July 2015

Trust in water

Towards Water 2020 – meeting the challenges for water and wastewater services in England and Wales

www.ofwat.gov.uk

OFWAT

About this discussion document

This discussion document considers the challenges facing the water sector in England and Wales, and how Ofwat can help it to address these challenges.

We are seeking the views of all interested parties to promote a shared understanding of the challenges facing the sector and all those with an interest in it.

In December 2015, we will consult on our initial proposals for regulatory change at the 2019 price review.

Contents

Executive summary

The water sector faces demanding challenges…

High-quality, reliable water and wastewater services are an essential service. They are fundamental to:

- our quality of life;
- our health;
- the environment; and
- the economy.

Population growth and climate change mean that the water sector in England and Wales faces growing pressure to address challenges such as water scarcity and environmental quality while improving the resilience of systems and services to customers. This all takes place in a world of rising customer expectations and new opportunities to innovate to deliver services.

It is vital that the framework for economic regulation facilitates and stimulates the sector to deliver service that maintains and deepens the trust and confidence of its customers. The Water Act 2014 provides new opportunities to make better use of markets to deliver services to customers in England, both at the retail level with the non-household market opening in April 2017 and in the wholesale (or upstream) services such as water resources and sludge treatment.

In this discussion document, we:

- outline the challenges and opportunities facing the sector;
- identify issues with the current regulatory framework;
- set out the key questions that we think our regulation of the sector needs to address; and
- describe the enduring high-level principles for the 2019 price review (PR19).

We see this document as a first step to gain common understanding around issues facing the sector and how we can help it to respond to the challenges it faces. Our approach to economic regulation can enable and incentivise the sector to meet these challenges.

Economic regulation has a role to play in enabling the sector to meet challenges

Economic regulation can drive how service providers (that is, those companies that provide water and wastewater services) operate their business and how they seek to meet their customers' needs. We consider that our approach to economic regulation can help to both create and allocate value for the sector. Economic regulation can help to create value by encouraging and incentivising innovation, and discovery of new ways of delivering to customers. Economic regulation also allocates this value to customers, for example, through lower bills and better service, and by enabling a better environment or allowing investors to share value they have helped to create.

We have set up our Water 2020 work programme to:

- develop our approach to upstream markets;
- adapt our regulation to accommodate greater use of markets; and make sure that the sector is able to evolve to address the challenges facing it and deliver more to its customers.

The Welsh Government has decided that some provisions in relation to competition in the Water Act 2014 will not initially be extended in Wales. If the Welsh Government later decided that new evidence supported extending the role of competition in Wales then these provisions could be switched on and hence markets extended to Wales. Discussion of the use of markets in this document is therefore more pertinent to England, and the discussion of regulation, while important for England, will be even more significant for Wales.

We have identified key high-level questions for the future of economic regulation in the sector

Based on our analysis of the challenges facing the sector and the new opportunities that the Water Act 2014 provides, we have identified the following high-level questions for the Water 2020 programme.

Table 1 Key questions for our future regulation of the sector

Key questions for our future regulation of the sector
KQ1 How do we regulate to encourage service providers to focus on their customers over the longer term, rather than focusing their effort around periodic price reviews?
KQ2 How do we build on the customer-focused approach to the 2014 price review (PR14) and promote and maintain genuine customer engagement that drives companies' businesses?
KQ3 How do we regulate to encourage service providers to discover new ways of delivering outcomes to customers, which reduce cost and improve service?
KQ4 How do we encourage service providers to discover and reveal the efficient cost of providing services?
KQ5 How can we best align the interests of investors, management and customers?
KQ6 How can we maintain investor and customer confidence through the transition to any new arrangements?

We have maintained a consistent set of principles to guide PR19

As part of PR14, we developed a set of principles to guide the design of our price review methodology. We have reviewed these principles, taking account of the revised statutory framework within which we are working, and our new resilience duty in particular. We recognise the importance of consistent and stable principles in the regulatory framework. This is why, in line with our strategy, we are retaining the principles that underpinned PR14, and some of the key aspects of the regulatory framework we introduced for it.

Key aspects of the PR14 framework that we propose to retain include the:

- focus on customer engagement and outcomes (such as safe and reliable drinking water); and
- total expenditure (totex) approach to cost assessment.

We have engaged with stakeholders to capture the lessons from PR14 and to inform the design of future price controls. We have set out our findings in PR14 lessons learned, which is published alongside this document.

We are promoting discussion on the future regulatory framework

In line with our strategy, we have encouraged a “market place of ideas”, with stakeholders contributing to shaping the regulation of the future. We appreciate the willingness of stakeholders to engage and contribute on a range of important issues. A number of stakeholders have already submitted papers setting out their approach to the evolution of sector regulation, and Water UK has provided links to these on its website.

This discussion document seeks the views of all interested parties to promote a shared understanding of the challenges facing all stakeholders with an interest in the sector. We will engage further on these issues over the summer and early autumn.

Next steps

In December 2015, we will consult on our initial proposals on the role of markets and the consequent changes in the regulatory framework, including the structure of price controls and how we deliver on our commitment during PR14 to protect the sector’s pre-2015 regulatory capital value (RCV).

Early clarity on these issues will help to maintain regulatory predictability. It will also help us to identify whether changes are required to company licences to support these regulatory changes, including those that are consequential to the Water Act 2014. And we will be clear on the areas in which we will be maintaining a consistent approach from PR14. Following consultation, we propose to publish our decisions on the issues outlined above in May 2016.

1. Introduction

This document discusses the challenges and opportunities facing the sector and how we might address these through the development of our next price review (PR19) and the implementation of the Water Act 2014. We intend it to promote discussion with our stakeholders and frame the development of further work. We will consult on our initial proposals in December 2015.

1.1 Document structure

In this chapter, we set out some context for the Water 2020 programme under the following headings.

- What is Water 2020?
- The water sector in context.
- Developments in the legislative and wider regulatory framework.
- Learning from PR14.

We then consider the issues and questions currently facing the sector.

- Challenges facing the water sector.
- Addressing challenges: role of markets and economic regulation.
- Key policy questions for Water 2020.
- Ofwat's principles for setting price controls as part of Water 2020.
- The timeline for PR19.
- Next steps.

There are also four appendices

- Appendix 1 explains the process for responding to this discussion document.
- Appendix 2 lists the questions that this discussion document poses.
- Appendix 3 sets out the legal and wider regulatory framework.
- Appendix 4 provides further information and evidence on the challenges facing the sector in the future.

This discussion document represents the first step for our Water 2020 programme. To initiate discussion on the way forward, we have outlined some of the key policy issues that will need to be considered as part of this programme in the following three associated policy papers.

- Customer engagement and outcomes.
- Promoting markets.
- Regulating monopolies.

Your views in these areas will help to inform our initial proposals, which we will publish in December this year.

1.2 What is Water 2020?

Through the implementation of the Water Act 2014 and the delivery of the 2015-20 price controls, the water sector will see significant changes over the next five years and beyond. These changes provide real opportunities to improve how services are delivered to customers and for the environment in the longer term. By using all of our regulatory tools and looking hard at the available options , we can help to ensure that the sector continues to be incentivised to deliver the best possible service for customers.

In line with the new legislation and its subsequent commencement by the Secretary of State[1], the Water 2020 programme will facilitate the introduction of markets for wholesale water and wastewater services in England, increasing the scope for entry and, ultimately, more efficient outcomes and innovation. Outcomes are the things that customers and society value – for example reliable access to clean and safe drinking water.

To ensure that the regulatory framework helps bring about these changes and continues to protect customers, the environment and wider society, the Water 2020 programme will also develop the framework for a proportionate price setting process for PR19 that builds on the success of PR14 and looks beyond 2020. The Water 2020 programme will also consider how customers in England and Wales can best be protected by regulation given the different stance on the use of markets of the UK and Welsh Governments.

We will carry out this work in the context of our statutory duties and the guidance we receive from the UK and Welsh Governments.

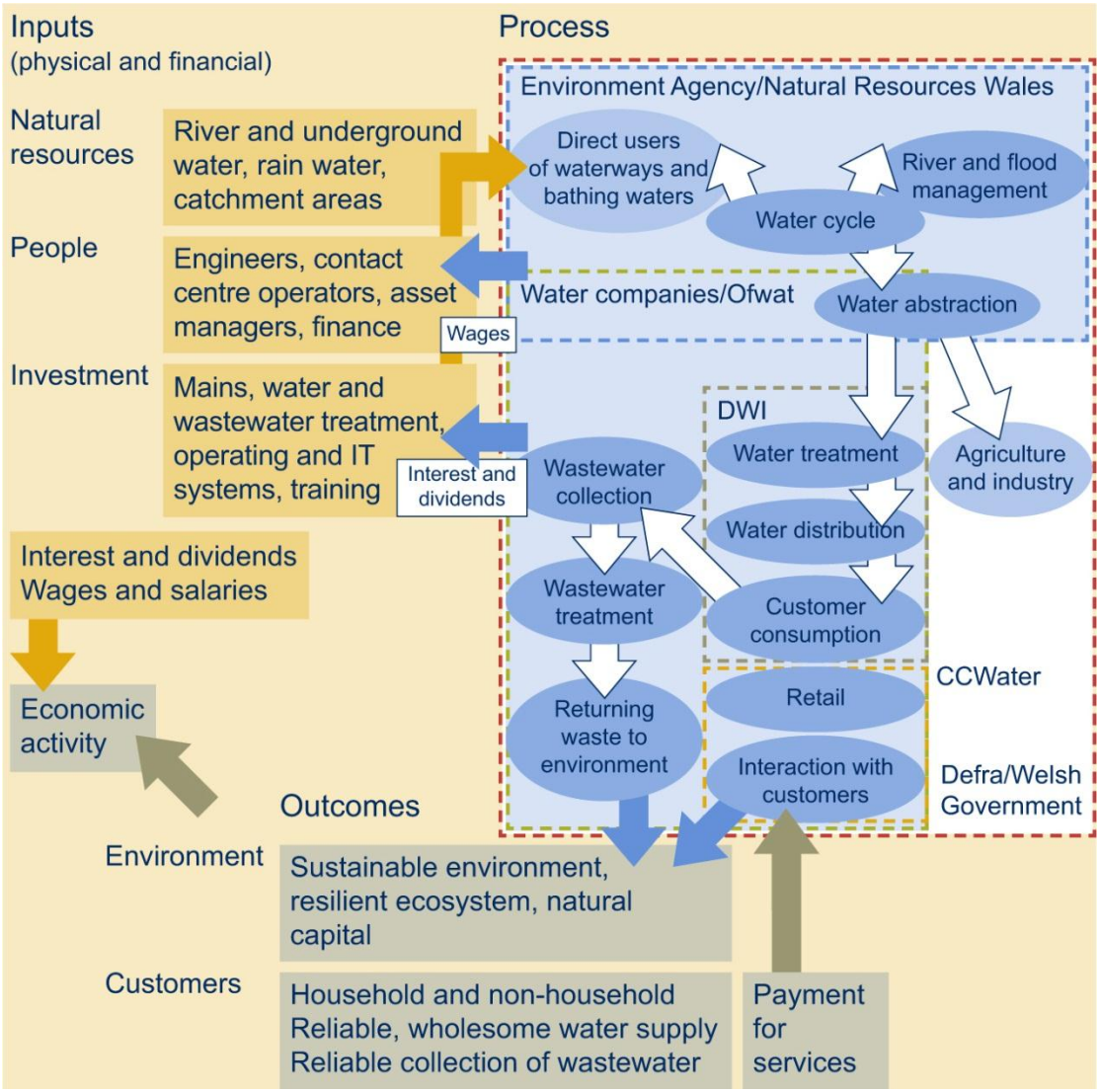
[1] Commencement of the legislation is a matter for the Secretary of State and not Ofwat. We expect to work closely with Defra to address a range of upstream related policy questions to assist Defra, who will advise the Secretary of State on the commencement of the Act.

We propose to consult on this framework in December 2015 and publish our decisions in May 2016.

1.3 The water sector in context

The water and sewerage companies (WaSCs) and water only companies (WoCs) that we regulate represent a significant part of the water and wastewater value chains. But, as figure 1 below shows, there are additional parties, outside the boundaries of these companies, in catchments and beyond, that can affect the outcomes that customers and society experience. For example, agriculture and industry both use water and impact on the quality of the environment but are not, of course, subject to our regulatory framework.

Figure 1 The water sector in context



As the diagram shows, both the activities that we regulate and those outside the sector will impact on outcomes. For example, they impact:

- **the environment –** the quality and scarcity of water in the system, as well as the ecosystem itself;
- **customer outcomes** – services received by bill-paying customers such as a clean and reliable water supply; and
- **customer bills** – both household and non-household, with the related implications for affordability.

The best outcomes for customers are likely to be delivered when there is effective interaction and appropriate co-ordination across the wider sector. Some companies are taking a more active role in facilitating co-ordination to benefit their customers, such as catchment management and collaborative approaches to demand/supply balance. Similarly, the outcomes approach to regulation and adopting a totex approach to cost assessment incentivises companies to focus on what matters to customers. It also gives them greater flexibility about how they address the challenges they face.

1.4 Developments in the legislative and wider regulatory framework

The Water Act 2014 provides for a range of changes.

- It introduces the ability to choose their retailer for all non-household customers of water companies under the jurisdiction of the UK Government[2] by April 2017.

- When brought into force, it will encourage greater use of markets for upstream (wholesale) water and wastewater services provided by companies under the jurisdiction of the UK Government.

- It gives us a new primary duty in relation to resilience[3] and amends our secondary duties.

[2] The UK Government's jurisdiction is over water and wastewater companies whose areas are wholly or mainly in England; the Welsh Government's jurisdiction is over water and wastewater companies whose areas are wholly or mainly in Wales.
[3] Reliable service for customers – Ofwat's consultation on resilience.
http://www.ofwat.gov.uk/regulating/tools/pap_con20150708resilence.pdf?download=Download#

- It gives the UK Government in relation to water companies in England, and the Welsh Government in relation to water companies in Wales, the power to publish statements setting out strategic priorities and objectives for Ofwat[4].

As well as the Water Act 2014, the proposed abstraction reforms (that is, reforms that look at how much water is taken from the environment) will provide greater opportunity for water trading when implemented, particularly in relation to water users that are not currently involved in public water supply.

Welsh devolution is a further potential change that we should be mindful of. In particular, the borders of responsibility between UK Government and Welsh Government for water companies could change to follow national instead of company boundaries. If this were to happen then the form of regulation and the scope of markets would need to be adjusted to reflect the changes to the legislative boundaries. The potential need to change the areas over which regulation and markets are applied should be considered when developing our policy.

We discuss the developments in the legislative and wider regulatory framework in more detail in appendix 3.

1.5 Learning from PR14

For PR14, we set a framework that focused on companies delivering the services that matter to their customers and the environment. This framework included the following key changes.

- **Customer engagement.** We placed the responsibility on companies to engage with their customers.

- **Focus on outcomes.** Each company developed a set of outcomes relevant to its local circumstances, along with associated performance commitments – levels of service that companies have committed to providing – to reflect its customers' priorities as identified through the engagement process.

[4] In this document we use the term "water companies in England" to refer to water undertakers and sewerage undertakers whose area is wholly or mainly in England. Similarly, "water companies in Wales" is used to refer to water undertakers and sewerage undertakers whose area is wholly or mainly in Wales.

- **'Enhanced' companies and risk-based review.** We adopted a risk-based approach to assessing companies' business plans, focusing on the issues that could have the biggest impact on customers. Companies that demonstrated their plans were in the best interests of customers were eligible for 'enhanced' status. They received direct financial and reputational benefits and benefited from the certainty of an early draft determination.

- **Totex approach.** Rather than split companies' expenditure allowance into capital expenditure (long-term investment); and operational expenditure (day-to-day running costs), we considered their total expenditure (totex).

- **Balanced package of risk and reward.** We have allocated risks to the party best able to manage these risks and provided meaningful outcome delivery incentives – financial and reputational incentives to deliver the agreed performance commitments – so that companies are incentivised to provide the best service.

Alongside this document, we have published the lessons from PR14. This follows extensive conversations to identify the key learning both within Ofwat and with all interested parties. Some of the key observations include the following.

- **Customer engagement.** There was real evidence of companies listening and delivering the outcomes their customers wanted. The customer challenge groups (CCGs) were really critical to delivering this result as they pushed companies to deliver more for customers. Looking ahead we believe there are opportunities for companies to better understand customer priorities, particularly by using information from day-to-day interactions with customers

- **Company ownership.** Some companies embraced the new methodology and delivered plans that we were largely able to accept in the round under the risk-based review. However there were many examples where this did not happen. This was most apparent in relation to the allocation of costs, and the way companies sought to identify and manage risks. Looking ahead we think there are opportunities to further company ownership through better use of financial, procedural and reputational incentives in the risk-based Review

- **New information.** The introduction of targeted retail and wholesale controls delivered greater visibility of costs and greater management focus on different elements of the value chain. The outcomes framework also revealed a wealth of information about customer priorities and service levels. This was all underpinned by our commitment to transparency and open and honest

conversations with our stakeholders. Looking ahead we think there are opportunities to reveal more and higher quality information about the cost of providing services and customer priorities, as well as scope to apply more targeted price controls.

- **Value for money.** The approach to setting the wholesale and retail cost allowances provided a sound basis for setting revenues in light of the information asymmetry between the regulator and the regulated companies. Looking ahead we will consider whether our models are sufficiently challenging and whether there are opportunities to strengthen the incentive for efficiency. This includes exploring whether more could and should be done to support water trading, and whether we can increase the power of incentives for operational outperformance.

- **Resilience.** The outcomes framework empowered companies to understand long term asset health and develop measures to give visibility to how they meet their legal obligation to maintain and improve the health of assets. We also introduced changes that will help better eco-system resilience and financial resilience. Looking ahead we think there are opportunities for companies to provide greater visibility over how they are planning for the long term.

- **Efficient and effective regulation.** PR14 was delivered by applying a flexible approach to the process. This allowed us and companies to deploy resources where they would deliver the most value for customers, although it also made the timetable particularly challenging. Looking ahead we see a continued need to operate flexibly and we also expect companies to operate flexibly so that that they can respond to changing circumstances.

We will continue to learn as companies operate within this new regulatory framework during the current regulatory period, and as we reflect on the outcome of the referral to the Competition and Markets Authority (CMA) of Bristol Water's price determination, which is due later this year.

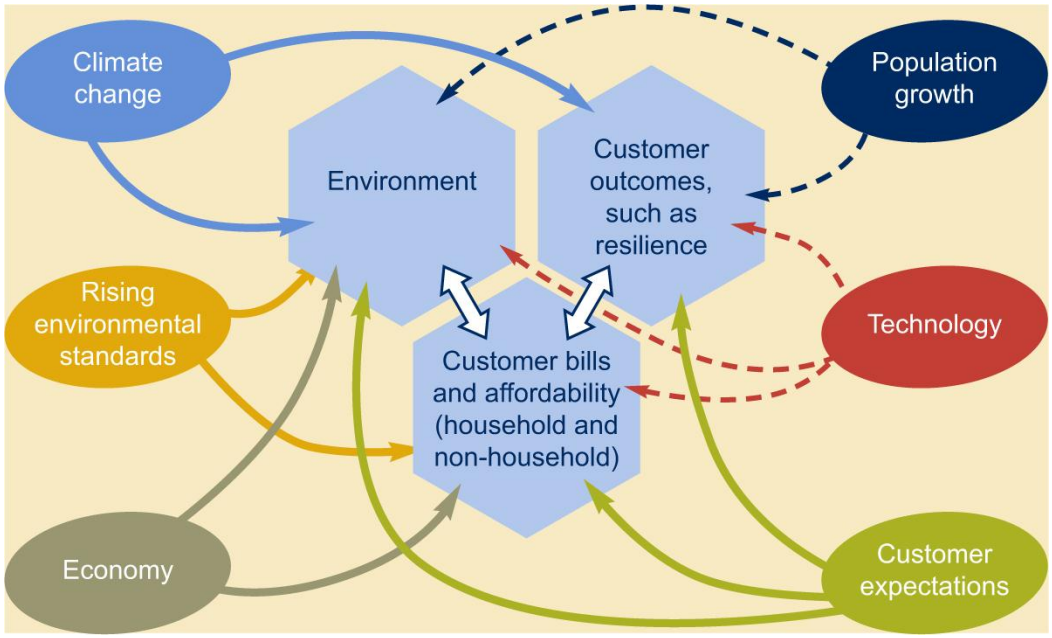
2. Challenges facing the water sector

The water sector faces a number of challenges, both now and in the longer term.

This chapter considers the extent to which companies are already facing challenges and how external drivers of change (as illustrated in figure 2 below) will exacerbate these challenges, as well as present opportunities to improve performance. We consider these challenges in relation to the following three broad outcomes.

- Environment (in terms of both water scarcity and water quality, as well as the ecosystem itself).
- Customer outcomes.
- Customer bills.

Figure 2 External drivers of change



Appendix 4 includes further information and evidence on the drivers for change illustrated in figure 2 above.

2.1 Environment

Both water customers and wider society are increasingly acknowledging the importance of our environment. In its Water Strategy for Wales[5], the Welsh Government stated its aim **"to maintain and enhance the resilience of ecosystems and the benefits they provide, and in so doing, meet the needs of present generations without compromising the ability of future generations to meet their needs"**. The Lawton report, published by the Department for Environment, Food and Rural Affairs (Defra) in 2010[6], also notes that **"we have recently begun to better understand that our natural world is not a luxury: it is fundamental to our well-being, health and economy"**.

Customer surveys that the companies conducted in the run-up to PR14, confirmed that customers are concerned about environmental issues. For example:

- more than 60% of Thames Water's customers suggested that they are concerned about the environment and give a lot of thought to environmental issues; and
- 85% of Wessex Water's customers thought that protecting rivers, lakes and estuaries was an important element of its business plan.

The water sector relies on and contributes to the quality and availability of natural water resources and natural resources more broadly. We consider the issues that the sector is already facing with respect to water scarcity and environmental water quality in turn below.

2.1.1 Water scarcity

Given the uneven distribution of population and water resources across England and Wales, the supply of water is often drawn from areas where water resources are under pressure. Already, a quarter of water bodies in England and 7% of water bodies in Wales will provide a reliable source of water for new abstraction for less than 30% of the time[7]. Many of the affected areas are in the south-east of England, which are also forecast to experience population growth.

[5] Water Strategy for Wales, supporting the sustainable management of our water resources, Welsh Government, May 2015.
[6] Making space for nature: a review of England's wildlife sites and ecological network, chaired by Professor Sir John Lawton, submitted to Defra on 16 September 2010.
[7] Current and Future Water Availability – addendum, a refresh of the case for change analysis, Environment Agency and Natural Resources Wales, December 2013.

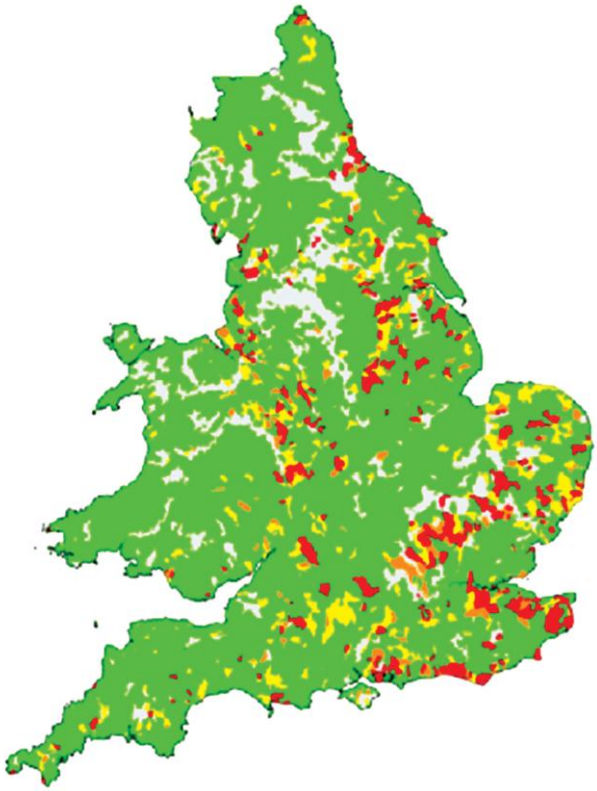
Many important species and habitats depend on water to survive. In 2010, a WWF UK study demonstrated a strong correlation between abstraction and groundwater levels at Axford on the River Kennet. The over-abstraction and the low river levels impacted negatively on the growth of water crowfoot and reduced water purity. The quality of river environments also promotes the well-being of communities and supports economic growth by creating social amenity for leisure activities such as angling[8], and supporting navigation along rivers and canals.

The River Kennet in drought. © WWF

Figure 3 below illustrates areas where good ecological status is at risk because of current abstraction levels.

[8] In the National Angling Survey 2012, pollution was the most important environmental issue for anglers, with 45.7% of those surveyed ranking it as “most important”.

Figure 3 Areas where good ecological status is at risk as a result of current abstraction[9]



© Defra.

Population growth and climate change will continue to put pressure on areas, such as the south-east of England, where water resources are already scarce. This will also impact on the environment. However, the challenge of future water resource availability is not likely to be limited to the south and east of England. Water catchments across Wales, south-west and northern England are predicted to experience significant unmet demand under many of the scenario combinations that the Environment Agency has considered[10]. And, as average incomes increase and customer expectations change, there is likely to be greater demand from customers for environmental improvements.

[9] Map from: Water for Life, Defra, December 2011. Areas of yellow, orange and red indicate areas at low, medium and high risk to good ecological status respectively. This assessment precedes the tightening of standards introduced as part of the EU Water Framework Directive.

[10] Current and Future Water Availability – addendum, a refresh of the case for change analysis, Environment Agency and Natural Resources Wales, December 2013.

2.1.2 Environmental water quality

The environmental quality of the rivers and beaches in England and Wales has improved dramatically since privatisation. Bathing water compliance with mandatory standards in England increased from 65% in 1988 to 99.5% in 2014[11], and from 77% in 1988 to 100% in 2014 in Wales. The water quality of the rivers in England and Wales has also improved consistently[12], supporting the recovery of wildlife species such as otters that were previously absent or in decline. We are no longer the "dirty man of Europe". Over the period since privatisation, the water companies have invested more than £116 billion in maintaining and improving services for consumers and the environment.

The tightening of environmental quality standards brought about by the EU Water Framework Directive and the revised EU Bathing Water Directive has already increased the pressure for improvements to the quality of discharges from sewage treatment works. Only 17% of our water-bodies in England are currently classified as being of 'good status' under new standards set down by the EU Water Framework Directive[13].

The sector continues to face challenges relating to water quality and the reduction of chemical pollutants, which can poison aquatic organisms, accumulate in the ecosystem, damage habitats and threaten human health. Unless these can be tackled at source, companies may need to install advanced (and expensive) treatment technologies at sewage treatment works.

For example, water companies are striving to reduce the levels of nitrates and pesticides such as metaldehyde in the water that are often the result of run-off from farmland.

There is also increasing awareness and concern about micro-pollutants such as pharmaceuticals, micro-plastics, endocrine disruptors and metals. The Priority Substances Directive supplements the Water Framework Directive by establishing environmental quality standards for 'priority substances' and 'priority hazardous substances'. There are already targets in place for some substances, with future

[11] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/419090/WQ_trends_2009-2014_March2015.pdf

[12] The percentage of rivers assessed as being at good biological quality increased from 62.6% in 1990 to 72.5% in 2009 in England and from 79.7% to 87.1% over the same period in Wales, whilst the percentage of rivers assesses as being at good chemical quality increased from 55.2% to 80% in England and from 86.3% to 94.7% in Wales over the same period. Source: https://www.gov.uk/government/statistics/river-water-quality-indicator

[13] 2010 to 2015 government policy: water quality, Defra

targets agreed for additional substances. This list of substances is updated periodically and there are a number of additional substances on the watch list for potential future inclusion.

The scale of fines for pollution incidents has also increased. Thames Water was recently fined £250,000 for polluting a nature reserve under new guidance issued in July 2014[14], and the Court of Appeal, which upheld the fine, noted that **"the objectives of punishment, deterrence and the removal of gain… must be achieved by the level of penalty imposed. This may well result in a fine equal to a substantial percentage, up to 100% of the company's pre-tax net profit for the year in question…even if this results in fines in excess of £100 million"**.

So, the challenge for water companies is to deliver improvements in a way that is efficient and does not compromise the environment. This means moving away from end of pipe solutions(cleaning up contaminated flows of water at the point where that effluent enters the environment) towards more integrated catchment management approaches. This will require the management of different risks – and different skill sets to manage these risks.

Maintaining and improving water quality in the face of population growth and climate change pressures will be an ongoing challenge for the sector. As average incomes increase and customer expectations change, there is likely to be greater demand from customers for environmental improvements. This is likely to be reflected in increased environmental standards over time.

2.2 Developing and maintaining resilience

Earlier this month, we published a consultation on how we take forward the primary duty to further the resilience objective, which we gained through the Water Act 2014[15]. Resilience is the ability to cope with, and recover from, disruption, trends and variability in order to maintain services for people and protect the natural environment, now and in the future.

Services will only be resilient if the systems that underpin them are resilient. The resilience of any system depends not only on each element within the system, but, crucially, on the links between those different elements. The overall system on which

[14] Definitive Guideline for Environmental Offences.
[15] section 22 of the Water Act 2014 introduced our primary duty to secure resilience by amending section 2 of the Water Industry Act 1991.

water and wastewater services depend is a complex one. It includes many different things – not only the infrastructure and networks that service providers own, maintain and operate, but also ecosystems and financial systems.

Customer surveys that companies carried out in the run-up to PR14, confirmed that customers are concerned about resilience For example:

- 99% of Anglian Water's customers thought that providing safe, reliable, clean drinking water was an important aspect of its service; and
- 82% of United Utilities' customers supported financial incentives to reduce supply interruptions.

Issues of network resilience were brought into stark relief following the floods in summer 2007. These had a significant impact on both water and wastewater services and are estimated to have cost the UK economy £3.2 billion.

- The Mythe water treatment works treats water drawn from the River Severn. In July 2007, the works flooded, leaving 350,000 customers in the Gloucester area without piped drinking water for up to 16 days. Since the floods, Severn Trent Water has invested in new pipelines and flood defences around the works.

- Widespread flooding took place in Hull in June 2007 as the drainage system was overwhelmed with rainwater flowing overground and flooding more than 8,300 properties.

- A wastewater treatment works in Sheffield, which serves more than 500,000 customers failed.

Flooding at the Mythe water treatment works, July 2007 © Environment Agency

The winter storms of 2013-14 also posed challenges for companies that had to deal with fallen trees, which caused issues with site access, and power failures.

We also note that the security of assets from terrorist threats is an increasing challenge that companies also have to address.

The pressures that climate change, weather variability and an increasing population create mean water and wastewater systems and services will face ongoing resilience challenges. For example, securing supply of a high enough volume and quality of water and managing increasing pressure on drainage systems will remain a challenge in the future. The challenge associated with securing a high volume of water is reflected in many companies' water resources management plans (WRMPs). These plans have identified the need for significant investment to develop new water sources and to upgrade existing facilities over the next 25 years.

The drought of early 2012 followed two dry winters, and was sufficiently severe that a temporary use ban on some non-essential uses of water (such as using hosepipes

to water gardens) was implemented in southern England. There were also preparations being made to impose more severe demand restrictions. As it happens, the wettest summer on record arrived in time for the London Olympic and Paralympic games.

The corporate and financial resilience of the sector may also be tested in the future by financial shocks to the system and changes to the financial landscape.

2.3 Customer bills and affordability

Overall, our final determinations for PR14 resulted in water and wastewater bills 5% lower on average in real terms in 2019-20, compared with 2014-15. Companies also committed to do more to help customers who are struggling to pay their bills. Currently, around 760,000 people benefit from some form of support from their water company. Over the next five years companies are putting in place additional measures, which are forecast to help a further one million people.

In its recent report 'Cumulative impact of regulation & policy on future water bills', Defra considers the potential cumulative impact of regulation on future water bills for the period 2015-50, taking into account the impact of:

- the development of non-household retail markets;
- the development of upstream markets;
- PR14;
- the Water Framework Directive; and
- the impact of other potential reforms such as abstraction licence reform.

In Defra's 'baseline' scenario there is a small projected increase in the 2030 average bill of 2%, with a slight overall decline of 4% over the period 2015-50. The overall trend is broadly flat, indicating that future cost pressures in the sector are being offset by efficiencies, including those generated by market reforms envisaged by the Water Act 2014, and PR14 measures.

Affordability and perceived value for money remain issues for a significant number of customers, and they are key UK and Welsh Government priorities[16]. In a report published in November 2013, the National Audit Office (NAO)[17] noted that incomes

[16] For example, in its Water Strategy for Wales, published in May 2015, the Welsh Government states "we will ensure fair and affordable water services for all and we are committed to reducing the percentage of people who have water affordability issues in Wales."
[17] Infrastructure investment: the impact on consumer bills, National Audit Office, 13 November 2013.

of low-income households fell 11% in real terms between 2002 and 2011. It further estimated that at least 12% of households were at risk of not being able to afford their water bills[18]. Although we appreciate that affordability is a complex issue, these statistics help to illustrate the difficulties facing some customers.

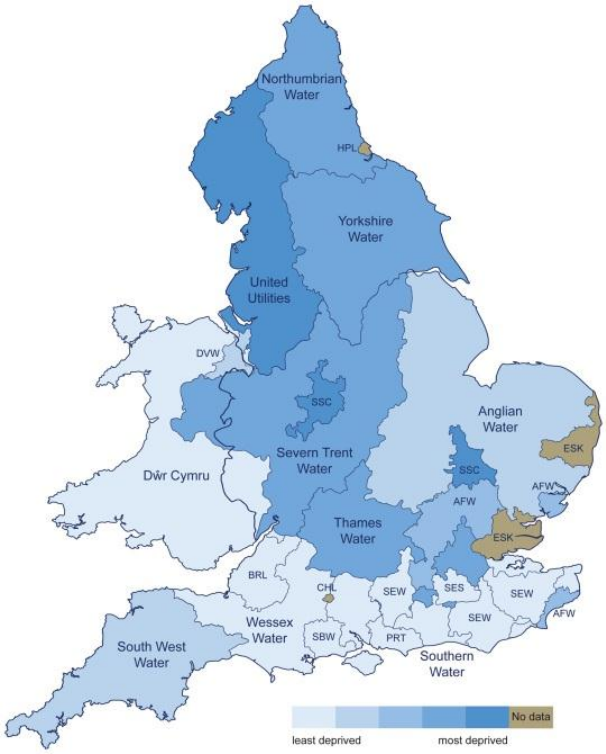
A Consumer Council for Water (CCWater) survey showed that satisfaction with the value for money of water services has been falling since 2011, and at 69% in 2013, stood at the lowest level for four years[19]. The same survey showed a marked increase in the percentage of customers who think that the water and wastewater charges that they pay were unaffordable between 2012 and 2013 (from 13% to 21% for customers of WaSCs, and from 11% to 18% for customers of WoCs).

We also note that affordability is an issue for business customers, especially small businesses, which play a crucial role in the growth of the economy. Another CCWater survey showed that the perception of value for money with small businesses has increased slightly since 2012, up 2% to 74% for water services, but has fallen 4% to 68% for wastewater services[20].

Affordability also varies by region, reflecting the different size of water bills in different areas and the varying levels of deprivation across England and Wales. Figure 4 below shows one measure of how levels of deprivation vary across England and Wales.

[18] That is, spent more than five per cent of their income on water and sewerage bills.
[19] Water Matters: Household customers' views on their water and sewerage services 2013, Consumer Council for Water, May 2014.
[20] Testing the Waters: SME customers' views on water & sewerage services 2014, CC Water, July 2014

Figure 4 Variation in deprivation across England and Wales[21]



The UK Regulators Network (UKRN) has been working to understand affordability pressures in the water sector. In a recent report[22], it noted that in 2012, customers in south-west England paid up to £99 a year more for water and wastewater services, than the amount paid on average for these services in England and Wales in that year. At the same time, in parts of the south west, annual income was up to £1,100 below the UK average. CCWater's survey found that customers in south-west England are less satisfied with value for money than in other regions, and 41% think that the water and wastewater charges that they pay are unaffordable.

Customers' inability to pay their water bills also imposes a significant cost on water companies, and other bill-paying customers as a result. The business plans companies submitted to us during PR14 forecast bad debt costs of £1.3 billion[23] in the period from 2015 to 2020.

[21] Represented by Severn Trent forecasts of the income domain of the Index of Multiple Deprivation, where income domain is calculated by a count of income deprived individuals in the area measure by the number of people receiving income support. See page 13 of "English Indices of Deprivation", Department for Communities and Local Government.
[22] Understanding affordability pressures across sectors, UKRN, January 2015.
[23] Stated in 2012-13 prices.

The increasing pressure on water availability, the environment and network resilience[24] outlined above will put upward pressure on customers' bills. Supply-side solutions are often costly and measures to manage demand are under-developed. In addition, companies will need to maintain an ageing network of pipes, treatment works and pumping stations. Consumers are likely to expect increasing levels of service in the future, more in line with other sectors (including greater use of digital communication channels), with potential cost implications. But advances in technology may change the economics of the sector, reducing the upward pressure on costs.

Household customers' ability to afford water, both now and in the future, is a growing concern made worse by the upward pressure on bills outlined above. As well as the direct impact upon the poorest in society, this adds to the bills of all paying household customers and could become a significant issue. Increasing average incomes would help to make water bills more affordable in general. But it is the incomes of the poorest in society that will determine the extent to which affordability remains an issue. As noted above, as the level of water bills and levels of deprivation vary by region, this is likely to be more of an issue for some companies than others.

2.4 Summary

As discussed above, the sector is already facing a number of significant challenges in relation to issues such as:

- water scarcity;
- environmental water quality;
- resilience; and
- affordability.

External drivers such as climate change, population growth and rising customer expectations will heighten these challenges in the future.

If these challenges are not addressed effectively, then this would be to the detriment of customers and wider society in terms of poorer environmental outcomes, reduced resilience and higher customer bills, than would otherwise have been the case.

[24] While increased resilience for the future may mean additional investment now, developing an integrated, more flexible network can represent more efficient investment resulting in a trade-off between current and future customers' services and bills.

So, it is appropriate for us to consider how we, as the economic regulator, can play a role in helping the sector to address these challenges. In the next chapter, we discuss how economic regulation can play a role in addressing sector challenges and the limitations of the current industry framework.

3. Addressing challenges: role of markets and economic regulation

As discussed in chapter 2, the water sector faces a number of challenges, both now and in the longer term. In this chapter, we consider:

- how **economic regulation can play a role** in addressing sector challenges; and
- how the **limitations of the current industry framework** could prevent the sector from addressing such challenges, unless it is reformed.

3.1 How can economic regulation play a role in addressing sector challenges?

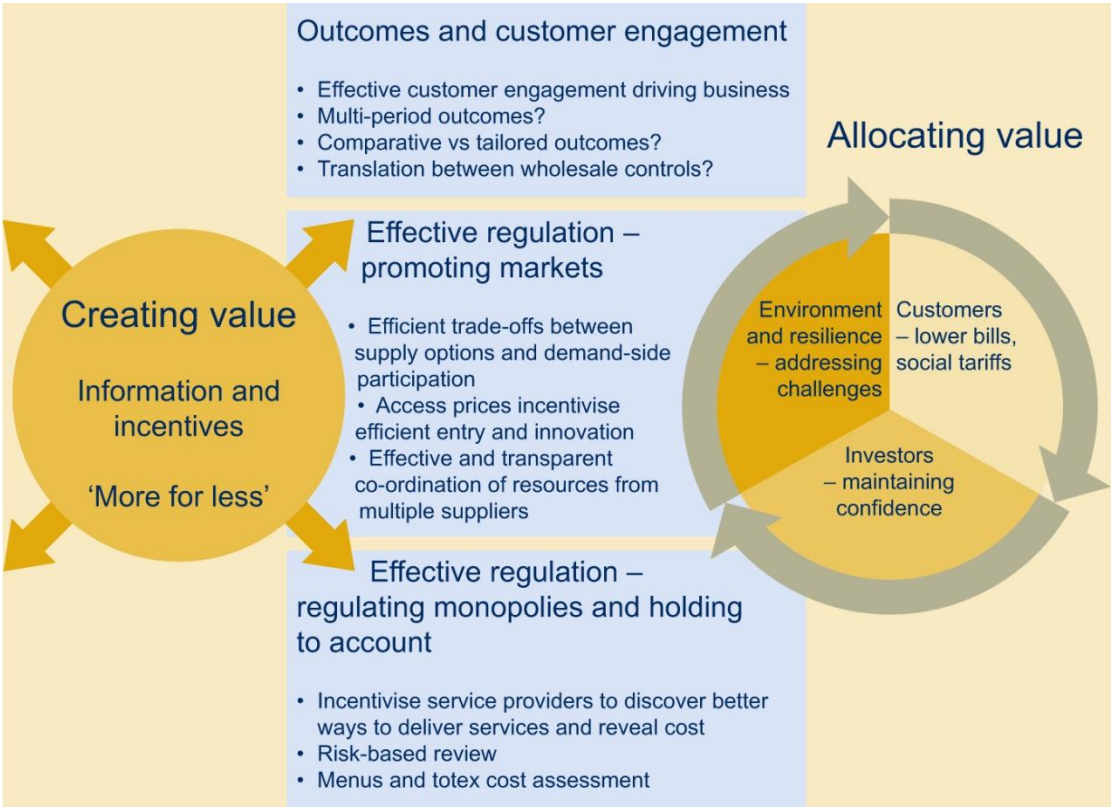
The sector faces difficult long term challenges and economic regulation needs to enable and incentivise a flexible, resilient and responsive sector. Economic regulation is about more than simply setting prices to the level of costs in order to protect customers. Rather, economic regulation needs to enable and incentivise innovation and new ways of working and delivering to customers. PR14 provides a sound basis for future regulation along with the scope for greater use of markets in England in the wholesale value chain, consistent with the Water Act 2014.

Figure 5 below shows the roles that economic regulation can play.

- **Creating value:** by providing the framework for companies to innovate and so deliver better services to their customers or reduce their own costs. This increases the value to society the water sector provides. And it enables the sector to meet environmental and customer challenges while improving affordability – that is, delivering more for less.

- **Allocating value:** by determining how the benefits from the sector are shared between:
  - customers, by lower bills and/or better service;
  - investors, from a share of the value they have helped to create; and
  - the environment, by improving water quality, reducing the over-abstraction of water or other environmental improvements.

Figure 5 Ofwat's role in the creation and allocation of value



As the economic regulator we have two powerful tools to protect customers and create value – **information and incentives**.

Information helps:

- providers identify the most efficient way to deliver services; and
- customers identify what they are getting for their money and hold companies to account for their service.

Incentives help:

- align the interests of investors with those of customers; and
- ensure that the sector innovates and works hard to deliver more for less.

It is also important that we ensure that the regulatory framework does not unnecessarily prevent companies' from responding to information and incentives.

3.2 Limitations of the current framework for economic regulation

As discussed in section 1.5 above, as part of PR14, we made a number of significant changes to the regulatory framework. Many of these changes worked well and we intend to keep them for PR19. These include:

- greater company ownership of business plans;
- a risk-based assessment of these plans;
- a focus on delivering outcomes consistent with the desires and aspirations of customers;
- greater customer engagement;
- the use of financeability levers; and
- the introduction of total expenditure (totex) approach to deal with perceptions of capital expenditure bias.

These changes should help the industry to respond to the challenges identified in chapter 2 above. For example, the move to a totex approach will provide companies with incentives to innovate and adopt new technology. This will allow them to meet the needs of customers and deal with new environmental challenges in the most efficient, flexible and sustainable ways practicable, rather than simply relying on traditional capital expenditure solutions.

We recognise that PR14 represented a big shift in the regulatory landscape and approach. As part of PR19 we propose to build on the PR14 framework and evolve and refine our approach given the lessons that we have learned. We outline some of the limitations of the current framework below in the following areas.

- Price control cycles and focusing on the long term.
- Understanding what customers want.
- Revealing efficient costs.
- Incentivising innovation and efficient use of resources and investment.

3.2.1 Price control cycles and focusing on the long term

Society and customers need confidence that water and wastewater services will be provided today and in the long term, without compromising the natural environment, and more widely, that decisions taken today will not impoverish future generations.

Since privatisation at the end of the 1980s, we have set price controls for five year periods. In doing so we have taken a number of steps to ensure that companies are incentivised for the longer-term, including incentivising asset serviceability, funding multi-period capital schemes and allowing additional transitional spending at the end

of price control periods enabling smoother transition between price control periods. We have also required companies to produce 25-year strategic direction statements (SDS) and there are wider industry initiatives that focus on the longer term, such as the process for Water Resource Management Plans. Companies adopted different approaches at PR14 – some companies put their five-year business plans into the context of their SDS, whilst others chose not to.

There remains a tension between the five-year period of the price control and the capital intensive nature of the water and wastewater sectors. This is because the timescale for the commissioning, construction and operation of many capital projects stretches is much longer than five years. So the regulatory framework and incentives must take account of future developments in both the short and longer term, and allow a smooth transition between price control periods. This includes encouraging efficient longer term delivery, ensuring prices remain affordable in both the short and longer term, and that licensees operating efficiently can continue to finance their activities.

In order to address this tension in our regulatory approach, we should also step back from the cyclical approach driven by price control reviews. We should increase our focus on financial monitoring across price control periods so that the settlement companies receive is based on a more holistic view than can be provided by assessing business plans in isolation. Our approach to setting price controls should also endeavour to encourage companies to consider a longer term view, for example by considering the role of longer term outcomes.

But this tension does not necessarily imply a move to longer price control periods. Doing so would not change the cyclical nature of the price review process – it would just lengthen the cycle. A longer price control period would also increase the risks for companies and customers that the world will differ from the assumptions used to set the price control during the period. There is therefore a trade off when deciding the length of the price control period.

3.2.2 Understanding what customers want

It is essential that companies understand what their customers want and that customers have trust and confidence that this will be reflected in the decisions that companies take on an ongoing basis, rather than just at the five-yearly price reviews. The relationship between companies and their customers should be at the heart of everything.

Customers care about both the quality and price of the goods and services they purchase and consume as well as about the environment and resilience. In many markets, competition provides a range of products which differ in both quality and price. And customers are able to purchase products which represent their preferred trade-off between quality and price. Currently there are only very limited or no competitive markets in wholesale water and wastewater , and the physical characteristics of the networks mean that it is difficult to provide different products (as customers connected to a zone within the network typically receive the same or very similar levels of service).

We and the companies have tried to take account of the views of customers in setting price controls using a range of customer engagement strategies, including CCGs and willingness-to-pay (WTP) surveys. Even so, the nature of the services provided in the water sector means that we cannot expect strong and proactive engagement from customers. While water and wastewater services are essential, their overall cost is relatively low for many customers compared to other household bills and customers' interest in water and wastewater services may be relatively low. Customer engagement is also more complex because water and wastewater services provide wider benefits to society and the environment beyond the benefits to individual customers (such as ensuring water abstraction is sustainable and improving the quality of discharges from sewage works).

All companies carried out research to understand what customers were willing to pay for in PR14. The results were important for developing outcomes and setting the penalties and rewards for under- and over-delivery of outcomes. However, there are methodological difficulties with WTP surveys and WTP results varied significantly between regions. We should consider:

- how best companies can engage with their customers throughout the price control period (including the role of CCGs);
- what the best approaches to gathering and using WTP information are; and
- whether there are other sources of information on customer preferences that we should use to help inform the setting of price controls.

3.2.3 Revealing efficient costs

Customers need to have confidence that companies are revealing their true costs and are incentivised to find further efficiencies.

At the last price control review we adopted a four pronged approach to setting allowances for efficient costs:

- using the risk-based review to identify enhanced business plans (including in relation to cost efficiency) and providing associated rewards;
- setting cost allowances using benchmarking models (and special cost factor claims to take account of factors not properly reflected in the modelling);
- assuming all companies should be able to match the level of upper quartile efficiency achieved in the past; and
- using menu regulation to incentivise companies to reveal their best forecasts of costs and allowing some flexibility in the setting of cost baselines.

This framework has a number of limitations.

- The approach relies very heavily on regulatory incentives rather than competitive forces to provide information on the efficient level of costs.
- The risk-based review was a new process for us and the water sector and so companies had limited information about the expectations and rewards for enhanced status and this may have reduced incentives.
- The emphasis on totex meant we needed to develop new benchmarking models and we may need to refine and improve these models in the future and supplement them with market-testing evidence.
- Assessing special cost factor claims can be bureaucratic and difficult, and companies were incentivised to submit claims even if their supporting evidence was weak.
- We assumed historical levels of upper quartile efficiency and made no assumptions about possible future improvements in efficiency that could be possible for all companies
- Menu regulation provides useful information going forward on whether companies think that they will outperform or not. But, as this was used only at the end of the review process, it had little or no impact on the original business plans. It is also a relatively complex regulatory instrument, which might undermine its effectiveness.

3.2.4 Incentivising innovation and efficient use of resources and investment

As discussed in section 2.3 above, affordability remains a key issue for customers and customers need to have confidence that their water and wastewater services represent value for money.

Water and wastewater companies face the challenge of delivering more, on the environment, resilience and customer service, than ever before. And to achieve this for less.

In the 25 years since privatisation, companies have exploited cost efficiency gains by reducing operating costs through reducing staff levels or increasing the efficiency of their contracting models. In PR14, there was a relatively small difference between the our view and companies' aggregate view of efficient costs. This may mean there is limited scope for further efficiency gains through reducing operating costs.

As noted above, some of the changes in PR14 such as separating wholesale and retail controls, the focus on outcomes and moving to a totex approach may provide substantial scope to improve efficiency in the current price control period and beyond.

But, monopoly water companies have tended to focus on solutions that are obviously and directly within their control, for example by undertaking investment programmes to improve resilience or address environmental issues. So far, there is little evidence of companies taking advantage of opportunities to optimise resources across water company boundaries such as water trading or sludge treatment and disposal. Similarly, companies have made significant investment to connect together their own water resources, but there is limited evidence of the development of interconnection arrangements between companies or contracting to provide services. There have also been few, if any, efficient price signals for potential new entrants to make investment decisions, due to integrated wholesale price controls and limited accounting separation data .

Several companies are developing more innovative and collaborative solutions to managing water quality in their catchments by dealing with issues at their source rather than relying on costly, capital intensive end-of-pipe treatment. Wessex Water's approach to catchment management and Argent Energy's use of fat, oils and grease from sewers are provided as examples below. But, it is far from clear that this represents the full potential for more integrated and innovative solutions to

Case study: Wessex Water catchment management

Wessex Water's catchment management work covers 15 catchments where nitrate or pesticide pollution affects raw water quality. This involves working with local farmers and landowners within the catchment of areas of public water supply boreholes and reservoirs to safeguard water quality. This work has included advice to farmers on changes to farming practices, including the development of pesticide management plans, and financial support for initiatives such as the construction of a purpose-built spray shed or the switch to non-metaldehyde-based slug treatments. Wessex Water have reported that, on average, when using catchment management solutions, water quality problems are addressed for approximately one-sixth of the cost of the treatment alternative.

the challenges facing the sector. We welcome views on how we can incentivise companies to shift the efficiency frontier both in terms of cost, but also physical performance.

Case study: the use of fat, oil and grease

The build-up of fat, oil and grease (FOG) in the wastewater network is damaging to the environment and can impact upon network resilience causing blockages and sewer flooding. Removing such fats from the network can be costly, as can the work needed to rectify any damage caused. For example, Thames Water spends £12 million a year on the removal of fats from its network.

The damage and disruption caused by fat, oil and grease in the sewer network has been the subject of press attention in recent years, most recently in April 2015, where a 40 metre long "fatberg" was removed from underneath Chelsea, London with resulting damage costing £400,000 to repair[1].

An example of emerging technology within the wastewater value chain is Argent Energy's process to convert FOGs into fuel. Argent Energy is a biodiesel producer taking wastes and residues to produce a sustainable fuel. At present, Argent operates a commercial scale demonstration plant in Motherwell, Scotland, capable of processing over 15,000 tonnes of FOG removed from the sewers each year. Argent is expanding these operations into the North West of England by building an additional plant to take in 150,000 tonnes of FOGs from the sewer network, fatty food wastes and other places.

Over the past four years Argent has worked with water companies such as Severn Trent and United Utilities to provide both an economically and environmentally sustainable means of dealing with FOGs that build up within the network and at wastewater treatment works. However, use of this approach remains limited and the question arises whether this approach or other innovative methods could be employed more widely to benefit the environment and customers?

3.3 Summary

In this chapter, and the previous chapter we have outlined the challenges facing the sector, our understanding of the role of economic regulation in helping the sector to meet these challenges and the limitations of the current framework. This has enabled us to take stock and ensures that our consideration of future policy developments is informed and considered.

In the next chapter we identify some key policy questions that will need to be considered as part of the Water 2020 programme.

4. Key policy questions for Water 2020

We have identified three broad ways to deliver better information and incentives:

- effective customer engagement and outcomes;
- promoting well-functioning markets and
- the effective regulation of the sector's monopolies.

And it is important that when we make changes to the regulatory framework, it maintains the confidence of investors and customers through any transition.

In light of the challenges facing the sector and our understanding of the role of economic regulation in helping the sector to meet these challenges,

We have identified what we consider are the key questions we, and the wider sector, will need to consider.

Table 3: Key questions for our future regulation of the sector

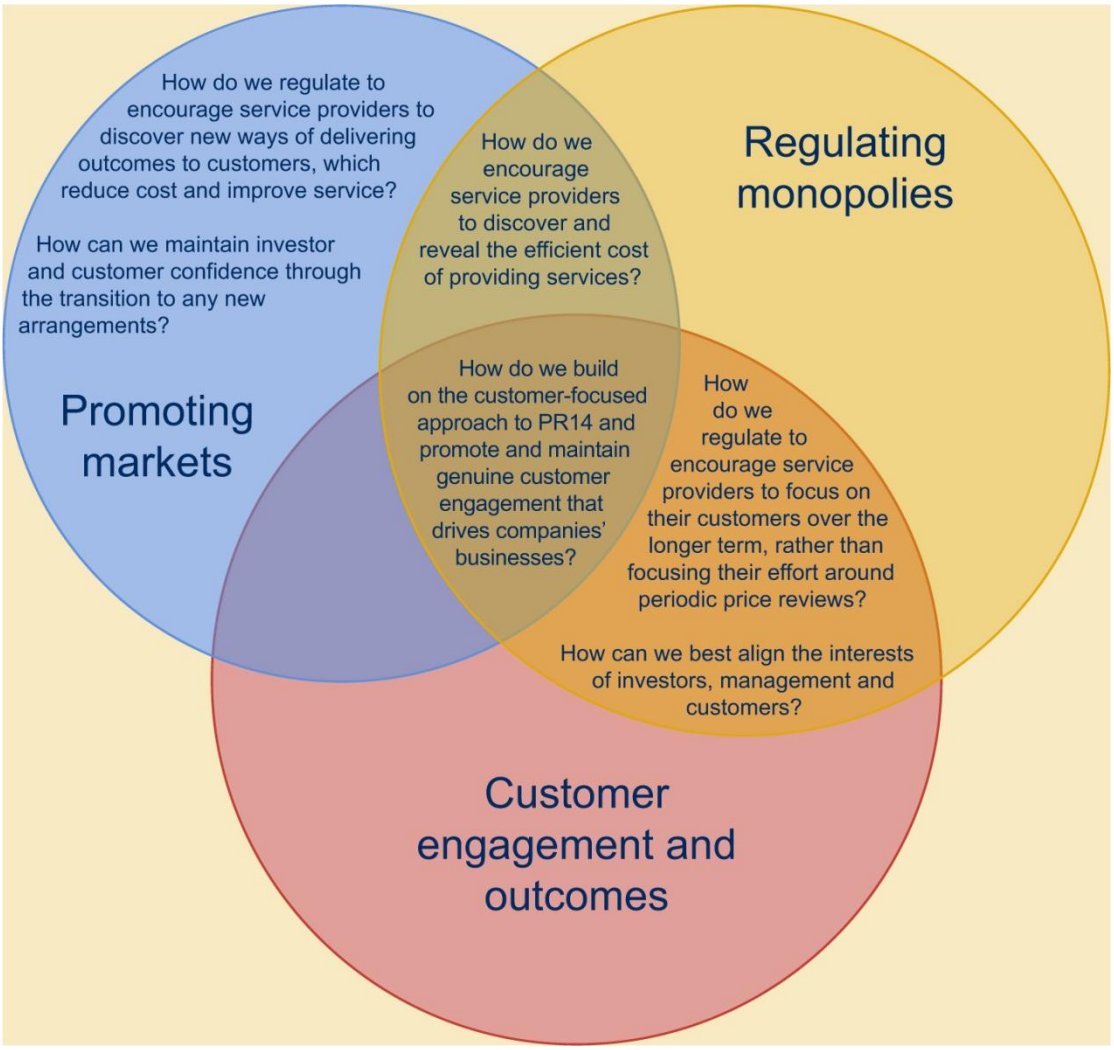
Key questions for our future regulation of the sector
KQ1 How do we regulate to encourage companies to focus on their customers over the longer term, rather than focusing their effort around periodic price reviews?
KQ2 How do we build on the customer-focused approach to the 2014 price review (PR14) and promote and maintain genuine customer engagement that drives companies' businesses?
KQ3 How do we regulate to encourage service providers to discover new ways of delivering outcomes to customers, which reduce cost and improve service?
KQ4 How do we encourage service providers to discover and reveal the efficient cost of providing services?
KQ5 How can we best align the interests of investors, management and customers?
KQ6 How can we maintain investor and customer confidence through the transition to any new arrangements?

We explore these key policy questions in the following associated policy papers.

- Customer engagement and outcomes.
- Promoting markets.
- Regulating monopolies.

Figure 6 below explains in which policy papers each of the questions is considered.

Figure 6 Mapping of high-level questions to policy papers



4.1 How do we regulate to encourage companies to focus on their customers over the longer term, rather than focusing their effort around periodic price reviews?

As stated in section 3.2.1 above, the water sector is capital intensive with long-lived assets, and so companies must consider the long term impact of their investment and operating decisions. But the current regulatory cycle is five years in length, with customer engagement focused around a five-year business plan, outcomes set for five years and companies focused on measuring their performance over that five-year period. This may discourage companies from focusing enough on the longer term and instead focus their attention on the once every five years price review. .

In PR14 we helped encourage a longer-term view by enabling companies to smooth the transition between five-year price control periods through a transition mechanism. This allowed capital investment that would deliver outcomes in 2015-20 to be brought forward into 2014-15, financed by the companies, with the capital investment funded by customers through price controls after 2015.

In order to protect the interests of both current and future customers and ensure the ongoing resilience of the sector, it is important that the regulatory framework focuses companies on taking an appropriate long-term view. So we should consider:

- how the preferences of future (as well as current) customers can be better taken into account in company decisions;
- how the determination of targets and incentives for company outcomes can acknowledge the long-term nature of many company decisions; and
- whether the regulatory framework can be adapted to encourage long-term planning, for example by extending the length of price control periods or further smoothing the transition between periods.

These issues are considered further in our policy papers on customer engagement and outcomes and regulating monopolies. Also the introduction of markets for water and wastewater services in some areas would help to move companies away from the focus on regulatory cycles towards the long term.

4.2 How do we build on the customer-focused approach to PR14 and promote and maintain genuine customer engagement that drives companies' businesses?

Customers should be at the heart of everything that companies do. In PR14 we placed the responsibility on companies for engaging with their customers and their wider stakeholders.

Our policy paper on customer engagement and outcomes directly considers how companies can improve their engagement with customers for PR19. For example, we ask whether we should make CCGs compulsory for PR19 and if so, how to maximise their benefits. We also consider consumer representation and how we can ensure that we have enough information to know what action is necessary to fulfil our duty to protect all customers.

The introduction of markets for water and wastewater services can help to empower customers by offering them choice and allowing them to directly reveal their preferences for different services and the value that they place on them. Our paper on regulating monopolies also considers changes to our regulatory framework so that the interests of consumers continue to be protected in England and Wales.

4.3 How do we regulate to encourage service providers to discover new ways of delivering outcomes to customers?

As stated in section 3.2.4 above, given the challenges facing the sector, companies need to discover new ways of delivering outcomes to customers and so deliver more for less. This will require innovation and new ways of approaching issues, both to reduce costs and to improve services.

In our paper on promoting markets, we consider how a change in approach could enable companies to deliver more for less by asking where markets can play a greater role in England. For example, making better use of water resources by improving water efficiency and using resources across company boundaries. We also consider how we can regulate access prices to provide efficient market entry signals to new service providers and how we could enable the effective co-ordination of multiple service providers across the wholesale value chains.

We expect the introduction of outcomes and totex in PR14 will enable innovation and we will monitor their impact during PR14 and take account of what we learn in PR19. In our paper on customer engagement and outcomes, we consider how approaches

to setting outcomes might evolve to support a more innovative sector and a longer-term focus.

4.4 How do we encourage service providers to discover and reveal the efficient cost of providing services?

When setting allowed revenues, we must assess the efficient cost of providing services in order to protect customers.

In our paper on regulating monopolies, we consider how companies can be incentivised to reveal information on efficient costs, for example through the use of a risk-based review and granting of enhanced status as seen at PR14. We also consider the extent to which our approach to assessing costs, both wholesale and retail, should be revised for PR19. For example, we consider the appropriate approach to comparative benchmarking and the process for the consideration of special factor claims.

Where it is possible (and desired by Government) to introduce markets, as discussed in our paper on promoting markets, such an approach can also help to reveal the efficient costs of provision. For example, tendering for monopolistic services (such as for Thames Tideway[25]) could:

- encourage lower costs;
- reveal important information on costs (including the cost of finance) and efficiency; and
- provide an alternative to the comparative benchmarking that we have typically employed.

Indeed, companies could use market testing to show that the included costs are efficient as part of their assurance of their business plans.

4.5 How can we best align the interests of investors, management and customers?

As part of PR14, we sought to ensure that companies face an appropriate balance of risk and reward. Effective rewards and penalties benefit customers by incentivising

[25] There are a number of alternate approaches (beyond the Thames Tideway approach) that could be used to tender for monopolistic services.

companies to provide the best service and by ensuring risks are allocated to companies where they are best placed to manage them.

In our paper on regulating monopolies, we consider what our approach to risk and reward should be for PR19. This includes consideration of the appropriate balance of risk and reward.

In our paper on customer engagement and outcomes, we consider how outcome delivery incentives can be determined to align the interests of investor and customers in the future and over the longer term and how we can draw on lessons learned from their use in PR14 and their application in the current price control period.

4.6 How can we maintain investor and customer confidence through the transition to any new arrangements?

In the [ref promoting markets paper], we consider our approach to the RCV and how it interacts with the regulation of access prices to facilitate markets. We also discuss our commitment to the protection of the 2015 RCV, as set out during the development of PR14.

4.7 Summary

The key questions identified above will help to frame our policy development for the Water 2020 programme – including the next price control review (PR19). The regulatory framework implemented by PR19 will need to protect the interests of customers and help to answer many of the questions identified above. However, it will also need to facilitate, and be compatible with, greater use of upstream markets in England as set out in the Water Act. We look forward to receiving the Strategic Policy Statements from Defra and the Welsh Government setting the priorities for our work.

In the next chapter, we outline our principles for setting price controls.

5. Our principles for setting price controls

As the economic regulator for the water sector in England and Wales, we help build trust and confidence in water by encouraging companies to focus on what matters to customers, the environment and society both now and in the future, and driving them to deliver this efficiently and sustainably.

We oversee how the sector is performing and seek assurance that service providers are engaging with customers and delivering services they want and can afford. We're ready to step in when things go wrong, and to act clearly and predictably with the right tools to achieve the best results.

As part of PR14 we developed a set of principles to guide development of our future price control methodology[26]. We have reviewed these principles, taking account of the revised statutory framework and government guidance (and in particular, our new resilience duty). We consider that they remain consistent with our duties and our strategy to help maintain and build trust and confidence in water and wastewater services. So we propose retaining our PR14 principles, as set out below, for PR19.

5.1 Targeted price controls

We will target our price control regulation appropriately, including:

- using appropriate tools for different parts of the businesses where the economic characteristics of those businesses are different;
- focusing incentives carefully to deliver desired outcomes; and
- reducing or removing regulation where it becomes unnecessary over time.

All markets can be regulated such that they work better, by reducing transaction costs and improving the flow of information. Targeted price controls are a means of improving information and transparency of the cost of providing a service. They may be help promote better outcomes for customers by improving quality of information and focusing service provider on a particular line of business. For example, the retail household control stimulated focus on the efficient cost of retail in a way not seen in previous controls. In cases, where competitive water markets are, or **may** be appropriate, we should regulate differently from where customers have no current

[26] Future Price Limits – statement of principles, Ofwat.

prospect of choice. Where competitive markets are working effectively, we should reduce our regulation.

5.2 Proportionate price setting

We will use our risk-based approach to compliance to ensure that we focus our regulation where it matters and reduce any unnecessary burdens.

This principle underpins our intention to take a risk-based approach to evaluating company business plans. So, as in the 2014 price review, where a company submitted a well-evidenced plan – including evidence of effective customer engagement – along with full compliance with environmental obligations, we took a less detailed approach to our challenge of that plan.

5.3 Effective incentives

We will develop clearer, simpler and more effective incentives that drive allocative, dynamic and productive efficiency in the sectors.

Our incentives will seek to allocate risk to those best placed to manage it – in order to make sure these risks are managed in the most efficient way. This informs our approach to setting outcomes, assessing costs and monitoring performance such that companies have more freedom to innovate in how they deliver. Incentives need to be simple in order to be effective: if those subject to the incentives do not understand how they work, then they are unlikely to have the intended effect.

5.4 Ownership, accountability and innovation

We will continue to set price controls in a way that gives companies ownership of and accountability for delivery of what customers want and need, and to ensure they remain resilient.

This principle drives our approach of continuing to ask the companies to set their own high-level outcomes in consultation with their customers.

5.5 Flexibility and responsiveness

We will design and use our regulatory tools in a way that is future proof and capable of adapting to support the sectors in delivering sustainable water and wastewater services as the environmental and other challenges change over time.

We will carefully consider the full range of our regulatory tool in deciding the appropriate approach to regulation, recognising that different approaches may be necessary to reflect underlying differences in the service provided and the nature of the challenges.

5.6 Transparency and predictability

We will continue to regulate in a way that is transparent and predictable, and changes we make to the regulatory framework will be based on clear evidence and subject to consultation with all stakeholders so that we can build trust and confidence in the sector.

We will need stakeholders to step up and engage in constructive dialogue with us in order to achieve the best outcomes for customers, the environment and wider society.

5.7 Summary

Our Water 2020 programme includes developing the policy framework for PR19. We propose doing so using the principles we developed and used for setting price controls at PR14.

The next chapter sets out our timeline for delivering PR19.

6. The timeline for PR19

In this chapter, we set out our provisional work programme for PR19. We want to reflect on learning from PR14 and improve on the process for PR19 and so discuss:

- how we could allow additional time between publishing the methodology statement and companies' submission of business plans; and
- how we can provide additional time between the submission of business plans and our final determinations, both to provide enough time for us, companies and stakeholders to consider the issues, and to allow additional time for further engagement with customers.

In figure 7 below, we have set out a provisional programme plan, which covers the period from July 2015 to publishing our final determinations for water and sewerage companies as part of the price review in December 2019.

Figure 7 Provisional high-level programme plan for Water 2020[27]

In developing the plan above, we have considered what lessons we can learn from PR14. In PR14 there was a relatively short period between the publication of the final methodology and the submission of business plans and between business plans and final determinations. In order to allow for more consultation and customer engagement, we have increased the time for these parts of the process. We hope

[27] We note that this does not include some of the interim steps planned between the publication of this document and the December initial proposals document – these are outlined in the next chapter on next steps.

that this will support the development of high quality business plans and give stakeholders confidence that it is a robust and transparent process.

So we propose publishing our methodology statement for the price control 7 to 8 months earlier than we did for PR14 and asking companies to submit business plans 4 to 5 months earlier than in PR14. This means that companies will submit their business plans to Ofwat in August 2018. We appreciate this provides a shorter period for companies to take account of their 2017-18 financial information in their business plans. It also lengthens the period over which companies will be focusing on their business plans as part of PR19, which could distract from 'business as usual' activities.

We welcome views on whether you think that this represents a more appropriate timescale for the delivery phase of PR19 or whether you think that there are better alternatives for reducing time pressures and providing more scope for engagement with customers.

7. Next steps

We welcome your responses to this discussion document, and the key questions set out at the beginning of this document, by 5.00 pm on **10 September 2015**. Appendix 1 explains how to respond.

We will engage further with stakeholders over the summer and early autumn and we hope your response will be only one part of an iterative conversation that has already started with such initiatives as the "market place of ideas". A number of water companies have contributed to this and we welcome anyone with an interest to contribute further ideas. We will also carry out a number of workshops and other forms of engagement to build on this paper as well as the wider sector conversation. We cannot make progress alone and need the sector and everyone interested in it to work to consider the way ahead.

In October, we expect the independent "task and finish group" to publish its report on resilience.

In November as part of the Water 2020 programme we will publish:

- our approach to the review of the retail non-household price control in 2017; and
- charges scheme rules.

In December, we then plan to

- consult on initial proposals for our approach to the regulation of water and wastewater wholesale controls at PR19; and
- publish our final approach to our resilience duty.

Appendix 1: Responding to this discussion document

We welcome your responses to this discussion document by 5.00 pm on **10 September 2015**.

You can email your responses to water2020@ofwat.gsi.gov.uk or post them to:

Water 2020
Ofwat
21 Bloomsbury Street
London
WC1B 3HF

Information provided in response to this discussion document, including personal information, may be published or disclosed in accordance with access to information legislation – primarily the Freedom of Information Act 2000 (FOIA), the Data Protection Act 1988 and the Environment Information Regulations 2004.

If you would like the information you provide to be treated as confidential, please be aware that, under the FOIA, there is a statutory 'Code of Practice' with which public authorities must comply and which deals, among other things, with obligations of confidence. In view of this, it would be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information we will take full account of your explanation, but we cannot give an assurance that we can maintain confidentiality in all circumstances.

An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as binding on Ofwat.

Appendix 2: Questions

We invite views on the challenges facing the water sector and how Ofwat can enable change to address these challenges.

In particular, we welcome your views on the following questions.

Question
Q1 Do you agree with our assessment of the challenges and the drivers of change facing the water sector?
Q2 Do you agree with the limitations of the current framework for economic regulation that we have identified?
Q3 Do you agree with the high-level questions that we have outlined in Table 3?
Q4 Do you agree with our principles for setting price controls as part of the Water 2020 programme?
Q5 Do you think that the provisional programme plan outlined in figure 7 is appropriate?

We welcome comments on **our approach to resilience**, both in response to this discussion document and the consultation on reliable services to customers being carried out in parallel.

Appendix 3: Developments in the legal and regulatory framework

In this appendix, we outline recent developments in the legal and regulatory framework for the water sector and how this could shape the industry in the future.

We first consider the Water Act 2014, which received Royal Assent on 14 May 2014 and highlight the main measures that are of relevance to the structure of the water industry and the regulatory framework within which it operates.

We then consider other regulatory reforms that are being progressed – Defra and the Welsh Government's work on abstraction reform, and work on reform of the Water Resource Management Plan (WRMP) guidance.

Water Act 2014

The Water Act 2014 will impact upon the regulatory framework of the water sector and how it operates as outlined below.

Non-household retail markets

The Water Act 2014 will introduce retail choice for non-household customers of water companies in England. The date for implementation is 1 April 2017. When brought into force, the relevant provisions of the Act will:

- enable all business, charity and public sector customers[28] of water companies in England to switch their water and wastewater service provider[29];
- allow water companies in England to seek permission from the Secretary of State to withdraw from the non-household retail market by transferring their non-household retail businesses to one or more retail licensees; and
- facilitate a cross-border retail market with Scotland.

[28] Only household premises (as defined in section 17C of the Water Industry Act 1991) will be ineligible to switch supplier.
[29] Whilst the relevant provisions could also cover Welsh water companies (water undertakers and sewerage undertakers whose area is wholly or mainly in Wales) in future, the Welsh Government has no current plans to bring these into force for that purpose. Non-household customers of Welsh water companies will continue to be able to switch their water supplier (but not their wastewater service provider) if they consume at least 50 megalitres of water a year.

Upstream markets

The Water Act 2014 will also facilitate the development of markets for upstream (non-retail) water and wastewater services in relation to water companies in England[30]. The relevant provisions of the Act when brought into force will:

- enable new entrants to provide new sources of water or wastewater treatment services, with obligations upon incumbents (the existing monopoly water companies) to provide access to their networks, treatment and storage systems;
- make it easier for water companies to buy and sell water and wastewater services from each other;
- enable owners of small-scale water storage to sell excess water into the public supply; and
- reform the way in which water and wastewater infrastructure laid by developers is adopted by water companies.

Charging

The Water Act 2014 will also make changes to the processes that water companies have to follow in fixing or agreeing water and wastewater charges. The relevant provisions:

- replace the current charges scheme approval process and allow Ofwat to issue charging rules for
  - end-user charges schemes (households and non-households);
  - new connections and infrastructure (developers);
  - the bulk supply of water (between water companies); and
  - access pricing (between water companies and retail licensees);
- remove the 'cost principle' from legislation[31]; and
- provide for the Secretary of State and the Welsh Ministers to issue guidance to us in relation to the principles we apply when determining charging rules.

Our role and duties

Our roles and duties have also been amended by the Water Act 2014 as follows. The relevant provisions:

[30]Whilst the relevant provisions could also cover Welsh water companies, it is our understanding that the Welsh Government has no current plans to bring them into force for that purpose.
[31] The cost principle is discussed further in our paper on promoting markets.

- provide us with a new primary duty in relation to resilience[32,33];
- provide Ofwat with a new secondary duty to secure that no undue preference or discrimination is shown by water undertakers and sewerage undertakers in relation to the provision of services by themselves or other service providers; and
- give the Secretary of State and the Welsh Government the power to publish guidance setting out strategic priorities and objectives that we must carry out relevant functions "in accordance with".

The Open Water programme[34] will deliver the competitive market for water and sewerage services for non-household customers of water companies in England by April 2017 and so the opening of this market is not covered by this discussion paper.

We issued a consultation on our role on resilience on 8 July.

As stated above, the Secretary of State and the Welsh Government have new powers to publish statements setting out strategic priorities and objectives for Ofwat which we must carry out relevant functions "in accordance with". This replaces the previous power under which they issued Social and Environmental Guidance to us. The existing Social and Environmental Guidance from Defra and the Welsh Government now has effect as statements setting out strategic priorities and objectives for us. Defra published its strategic policy statement to us, incorporating its social and environmental guidance, in May 2013[35]. We expect to receive a new strategic policy statement from Defra in due course and will need to take this into account in our work. The Welsh Government has published Social and Environmental Guidance for Ofwat[36] and aims to replace this with a strategic policy statement for us, which will set out the Welsh Government's strategic framework and policy priorities.

[32] The new resilience duty has not yet been commenced by the Welsh Government, but this is planned.

[33] The Water Act 2014 adds a new duty to our primary duties: to 'further' the resilience objective (in England and Wales). It highlights the need for long-term resilience of water and wastewater systems and service provision when faced with increasing external stresses, such as environmental pressures, population growth and changes in consumer behaviour. It also highlights the need to:

- promote long-term planning and investment and the use of a range of measures to manage water resources in sustainable ways; and
- increase efficiency in the water user and reduce demand for water to minimise pressure on water resources.

[34] http://www.open-water.org.uk/

[35] Defra's strategic policy statement to Ofwat, incorporating social and environmental guidance, May 2013.

[36] Social and Environmental Guidance to Ofwat issued under section 2A of the Water Industry Act 1991 (as amended by section 40 of the Water Act 2003), Welsh Government.

Defra propose to release their updated charging guidance by mid-August after a consultation period. This guidance will then be published in late November after it has been laid before Parliament for approximately seven weeks. The consultation on the Welsh Government's charging guidance will conclude in September and their guidance will be laid before the assembly from October onwards.

We are aware of differences in the public policy priorities between England and Wales. For example, we note the emphasis in the Welsh Government's new water strategy on well-being and that they are not convinced of the benefits of non-household retail competition. As the regulator for England and Wales, we will seek to ensure that the benefits reaped by initiatives in either country can be learnt from and harnessed for all customers. As such, we hope to learn from the work that has already been undertaken in Wales to inform how the most vulnerable customers in England can be further protected.

Other regulatory reforms

Water abstraction reform

The UK Government is committed to introducing a reformed water abstraction management system able to promote resilient economic growth while protecting the environment. The Welsh Government is committed to ensuring the sustainable management of water resources in Wales.

Defra and the Welsh Government consulted on options for long term abstraction reform in December 2013[37]. This consultation stated that any new system should:

- increase the amount of water that can be used by systematically linking access to water to the availability of water;
- incentivise abstractors to manage water efficiently;
- help abstractors to trade available water effectively, ensuring that we get the most value out of our water and do not waste water which could be used;
- ensure we have a more effective process to review abstraction licences, striking the right balance between providing regulatory certainty for abstractors and managing environmental risk; and
- incentivise abstractors to manage risks from future pressures on water resources, increasing their own resilience and that of river catchments.

[37] Making the Most of Every Drop: Consultation on Reforming the Water Abstraction Management System, December 2013.

The UK Government aims to legislate early in the current Parliament and implement the reforms in the early 2020s.

Our focus in this paper is on water trading, that is abstraction licence holders selling their water to others. Competition for abstraction licences themselves is outside the scope of this discussion document and is a matter for Defra and the Welsh Government.

Water Resource Management Plan (WRMP) guidelines

Later this year the Environment Agency will be publishing a joint consultation with us, Defra, the Welsh Government and Natural Resources Wales on reform of the water resource management plan guideline (WRPG). This consultation will consider how the WRPG can be revised to reduce the regulatory burden, focus more on the outcomes that matter to customers and other stakeholders, reflect the lessons learned from the 2014 water resource management plans (WRMPs) and reflect technical improvements in areas such as decision-making under uncertainty and population forecasting.

The finalised guideline will be published in 2016 with final WRMPs published in 2019.

Appendix 4: Sector challenges – further information and evidence

In chapter 2, we outlined the external drivers of change influencing the water sector in the future. We consider each of these drivers in turn below and the differential impact they may have across England and Wales.

Climate change

As noted in the recent Committee on Climate Change report[38], some changes in the UK climate are already being observed with changes in air and sea temperatures, average sea levels rising by around 3mm a year, and increased incidence of extreme weather. Climate change is likely to have an increasing impact on the distribution and frequency of rainfall, leading to more extreme weather events and episodes of flash flooding or water scarcity, with a significant impact on the water cycle and on the management of water resources[39]. However, the probability and scale of impact for each region or catchment area remains uncertain[40].

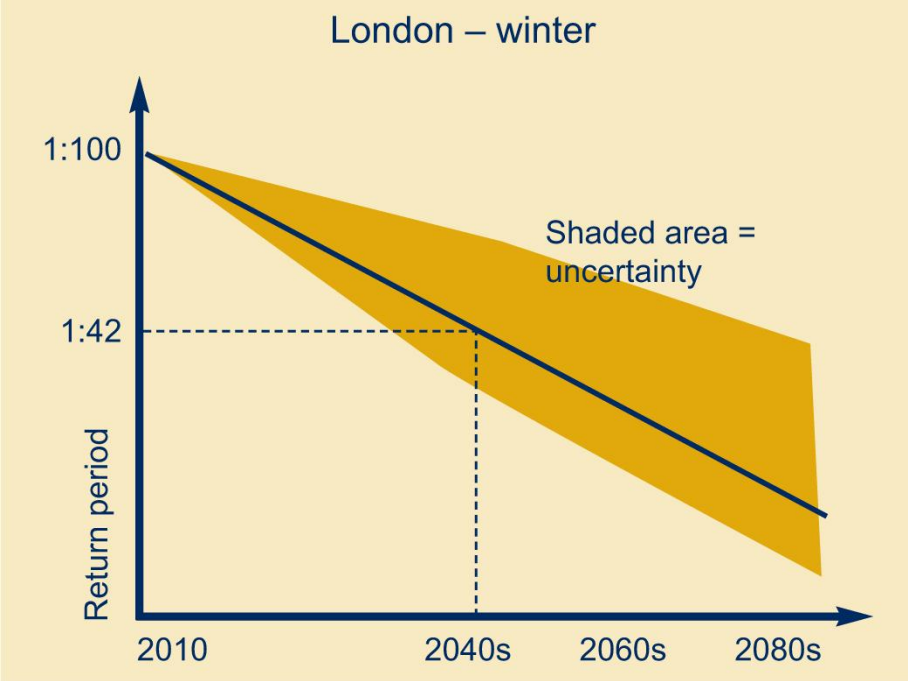
The UKCP09 projections show that in the 2080s, and under a medium emissions scenario, all areas of the UK warm on average relative to the 1961-90 baseline. Summers warm more than winters, particularly in southern England[41].

In 2010, we commissioned a report by the Met Office to provide information on how daily rainfall return periods will change in the future ('Changes in the frequency of extreme rainfall events for selected towns and cities'). This report found that winter daily rainfall events of a particular magnitude are projected to become more frequent. For example, using the central estimate, a current winter 1 in 100-year

[38] Reducing emissions and preparing for climate change: 2015 progress report to Parliament, Committee on Climate Change, June 2015.
[39] One example of increasing extremes of weather occurred in 2012. Across southern England, the two-year period April 2010 to March 2012 was the equal-driest such two year period in records from 1910 prompting the Environment Agency and Secretary of State to grant drought permits and orders, which affected approximately 20 million people. However, this was then followed by the wettest April to June since 1766. There were eleven flood events from April to December 2012, lasting a total of 72 days. This impacted just under 8,000 homes. The Environment Agency estimates that this event cost the UK economy £600 million.
[40] All climate change projections are subject to uncertainty - the degree to which temperature or rainfall, for example, might change in the future cannot be predicted exactly. The government's UKCP09 projections give a measure of uncertainty over a range of possible outcomes.
[41] http://ukclimateprojections.metoffice.gov.uk/21708

daily rainfall event in London is predicted to become a 1 in 42-year event by the 2040s as shown in figure 9 below.

Figure 9 Projections for a current winter 1 in 100-year daily rainfall event in London

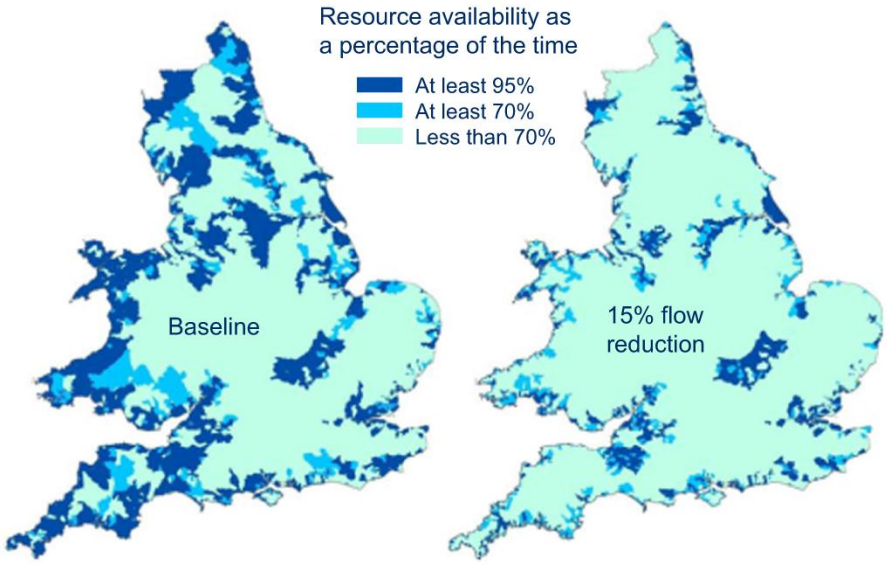


Climate change is also likely to increase the frequency of extreme droughts, such as the one in the summer of 1976[42]. To assess how climate change might affect the amount of water available for new abstractions, the Environment Agency has assessed the impact of a 15% reduction in flows on resource availability as shown in figure 10[43].

[42] An extreme value analysis of UK drought and projections of change in the future, Met Office, 2010. Journal of Hydrology

[43] The Case for Change – Current and Future Water Availability, Environment Agency, December 2011.

Figure 10 Resource availability as a percentage of the time



Rising environmental standards

The tightening of environmental quality standards brought about by the EU Water Framework Directive and the revised EU Bathing Water Directive has already increased the pressure for improvements to the quality of discharges from sewage treatment works. And we can reasonably expect that permit limits at treatment works will be maintained or further tightened, whether the UK remains part of the EU or not. In addition, we expect that when the courts apply recent sentencing guidelines for environmental offences they may result in higher financial penalties for pollution incidents than they have previously imposed.

Population growth

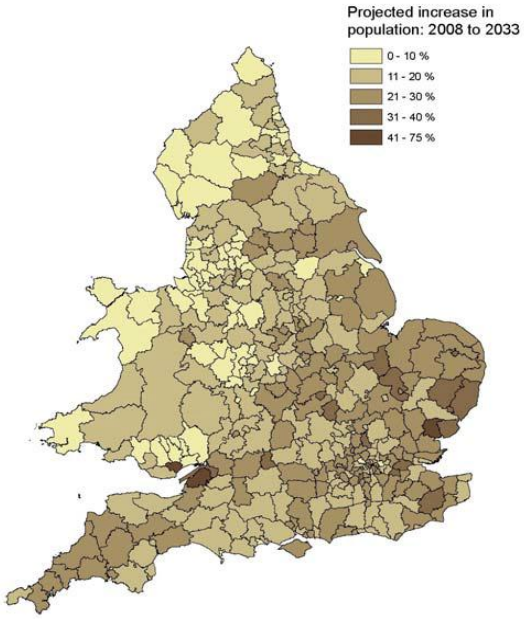
The populations of England and Wales are projected to increase to 61.6 million and 3.3 million respectively by 2035, a total increase of 7.2 million (12.5%) over the next 20 years[44]. The number of households in England is projected to increase from 22.3

[44] http://www.ons.gov.uk/ons/rel/npp/national-population-projections/2012-based-reference-volume--series-pp2/results.html#tab-Future-Size-of-the-Population

million in 2012 to 27.5 million in 2037[45]. And, in Wales, the number of households is projected to increase by around 190,000 (or 15 per cent) in 2011, to around 1.5 million by 2036[46].

Whilst consumption per person is expected to fall[47], increased supply will also be required to meet the demands of these larger populations. Also areas where resources are already constrained, such as, London, the east and south-east regions are projected to grow at a faster rate than many other parts of England and Wales as shown in figure 11.

Figure 11 Projected increase in population (2008-33)[48]



45 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/407556/Household_Projections_-_2012-2037.pdf

46 http://gov.wales/statistics-and-research/household-projections/?lang=en

47 For example, Ofwat's 2014 price review final proposals noted that 370 million litres of water a day would be saved in the period from 2015 to 2020 by tackling leakage and promoting water efficiency – enough to serve all of the homes in Birmingham, Liverpool and Leeds and per capita consumption is expected to continue to fall.

48 Figure taken from: The Case for Change – Current and Future Water Availability, Environment Agency, December 2011. Original data source Office for National Statistics.

Economic growth and structural shifts

As the size and structure of the economy changes over time, the amount of water demanded by industry will change. Such changes are likely to vary geographically, reflecting the industrial footprint of each area.

Future increases in overall energy costs or price volatility, and any increase in the cost of finance could increase customer bills.

Increasing average incomes would affect affordability and customer demand and expectations. Research carried out by Severn Trent Water during PR14 showed differences between the resilience and environmental priorities of different socio-economic groups:

- 84% of households with above average income thought it quite or very important that Severn Trent had a target to tackle leakage, against 72% of households with below average income and 68% of households with income below the poverty line; and
- 72% of households with above average income thought it quite or very important that Severn Trent tackled river water quality, against 70% of households with below average income and 62% of households with income below the poverty line.

We expect customers to give greater priority to resilience and environmental issues as their incomes increase.

Technological advancement

We will inevitably see advances in technology in the future. In some cases, technology already being applied in other sectors may transfer to the water sector, for example, the greater use of digital technology for customer engagement and metering or the more extensive use of sensors to enable more intelligent networks. In other cases, technologies currently under development may be rolled out or new technologies, which are not currently foreseen, could change the economics of the sector.

Customer expectations

Both household and non-household customers are becoming more demanding over time with respect to the outcomes they receive, including resilience and customer service, and also in relation to the environment. Customers' expectations for customer service are influenced by their experience in other utility sectors. So they are increasingly likely to expect combined bills across water and wastewater services and, in the case of large business customers, a single bill for multiple water supply areas and sites. They are also more likely to expect more tailored information using digital technologies and ultimately more control over their bills.

Summary

There is an array of challenges facing the water sector over the next five years and far into the future. These challenges come from external pressures and we need to consider how as a regulator we adjust the framework to account for these pressures. In our paper on customer engagement and outcomes we discuss the nature of consumer expectations, how these views are captured and how outcomes deliver what customers want. It concentrates how we can build on our PR14 experience to ensure customers are at the heart of companies' decision making.

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 leading economic regulator, trusted and respected, challenging ourselves and others to build trust and confidence in water.

Ofwat
Centre City Tower
7 Hill Street
Birmingham B5 4UA

Phone: 0121 644 7500
Fax: 0121 644 7533
Website: www.ofwat.gov.uk
Email: mailbox@ofwat.gsi.gov.uk

Printed on 75% minimum de-inked post-consumer waste paper.
July 2015

ISBN 978-1-910739-08-2

This document is also available from our website at www.ofwat.gov.uk.

Any enquiries regarding this publication should be sent to us at mailbox@ofwat.gsi.gov.uk.