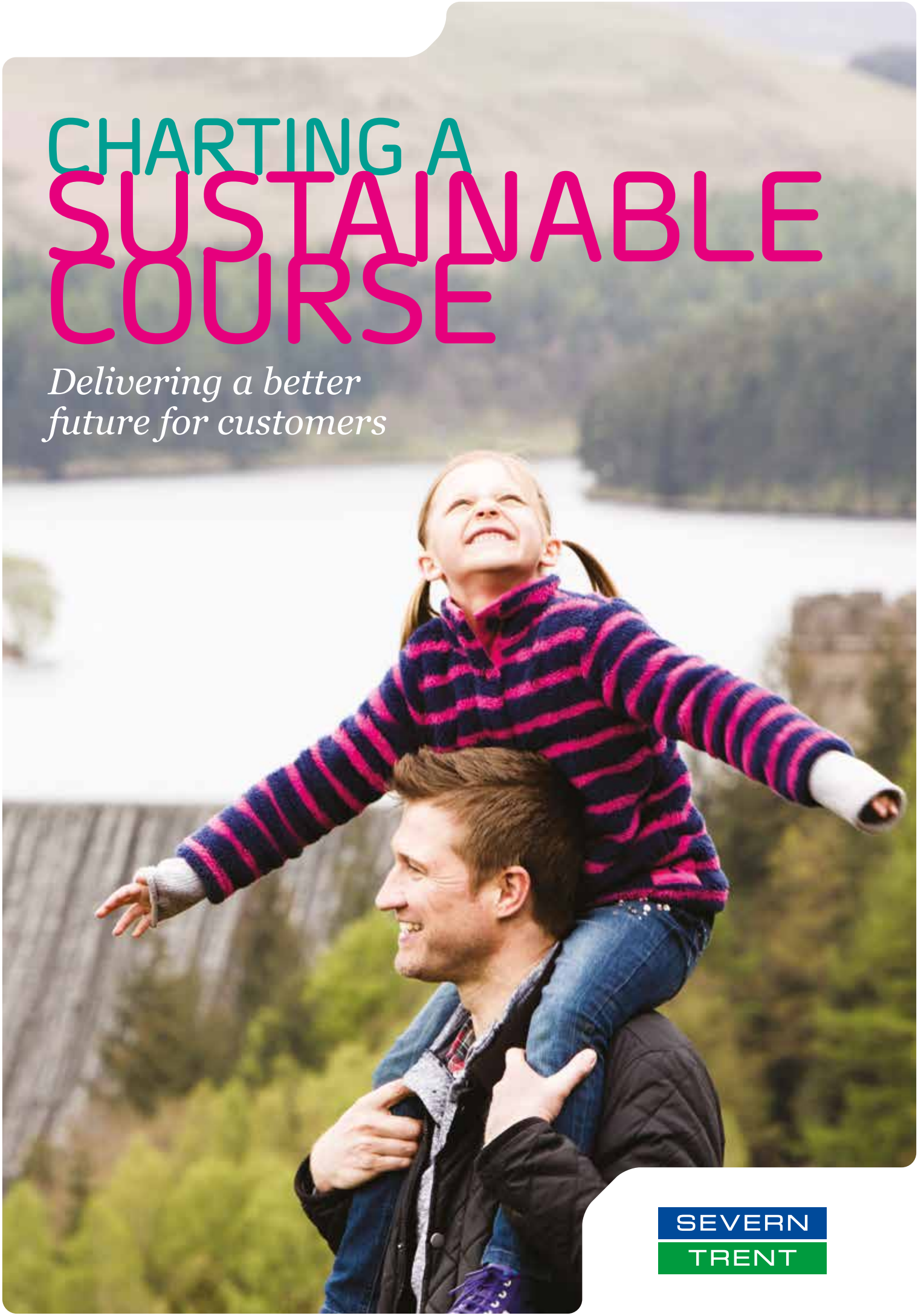
CHARTING A SUSTAINABLE COURSE

Delivering a better future for customers



SEVERN TRENT

Acknowledgements

We are grateful to Professor Stephen Littlechild for his foreword.

For more information on this report, please contact:

Dr Tony Ballance
Director, Strategy & Regulation

t: +44 (0)24 7771 5000
e: tony.ballance@severntrent.co.uk

Severn Trent Water Limited

Severn Trent Water Limited is one of the largest of the ten regulated water and sewerage companies in England and Wales. We provide high-quality services to more than 4.3 million households and businesses in the Midlands and mid-Wales. Our customers pay the lowest average bills in the UK.

www.severntrent.com

September 2015

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FOREWORD

Professor Stephen Littlechild

September 2015

The water sector in England and Wales has changed significantly over the last quarter of a century. It must continue to evolve if it is to provide clean and reliable water that also sustains the environment in an expanding economy at prices that customers can afford. The critical question is how best to do all this?

Following Severn Trent's earlier contributions to the policy debate, *Charting a Sustainable Course* makes further stimulating suggestions for the way forward. It argues that six main policy areas need exploring: customer empowerment, affordability, resilience, flooding and drainage, sustaining the environment, and the role of competition and markets. It provides thoughtful and sometimes provocative ideas. Let me comment on the first and last of these: competition and markets, and customer empowerment.

Competition in water supply may at first sound alarming, infeasible or uneconomic. But that's what some feared in energy too, and now competition is well established there, although questions remain about the detail of how best to promote it. In water, thinking and practice are less developed. But there is already competition for business customers in Scotland, and it is working well. Customers there report lower prices and better services. And retail competition is coming to England too.

A significant challenge in the water sector is how to create competition up the value chain. Again, energy suggests some directions of travel. Try to establish the costs and prices of different activities, so comparisons can be made between operators and so investment decisions can be better informed. Allow and encourage trading, so if it is less costly to produce water in one location than another, there is an incentive to find ways of transporting it to take advantage of this. Let companies that are better at particular activities replace those that are less effective, let companies specialise in what they do best, let new suppliers and producers enter the market. All this is consistent with the arguments set out in *Charting a Sustainable Course* and in Severn Trent's previous *Changing Course* publications.

None of this should jeopardise quality or security of supply. Rather, it should meet ever higher standards at more economic cost and using more innovative methods. This may involve a role for novel organisations, such as a water systems operator, as it has in the energy sector. But the market framework needs to be designed to meet the particular needs of the water sector, not lifted unthinkingly from another sector. Thought needs to be given, as *Charting a Sustainable Course* does, to those areas where markets can be most effective, and what can be done to promote competition most effectively and economically.

A greater role for competition means that companies have a greater need and incentive to discover and provide what customers want. But customers are important even where competition is not yet feasible, and there too some way must be found of discovering and providing what customers want. New regulatory approaches involving customer engagement are being developed to do this, and to ensure that companies develop and implement business plans consistent with customer preferences.

In the England and Wales water sector, companies were encouraged to form Customer Challenge Groups. Together, companies and customers did valuable work to research customer preferences and reflect them in their business plans. In some cases Ofwat accepted these business plans as the basis for its price determinations; in more cases Ofwat required adjustments to the plans to deliver better outcomes for customers, and/or to reflect what it deemed were more reasonably challenging assumptions about costs and efficiency. There is therefore scope to improve the process in future, by better coordinating discussions on customer preferences and efficiency.

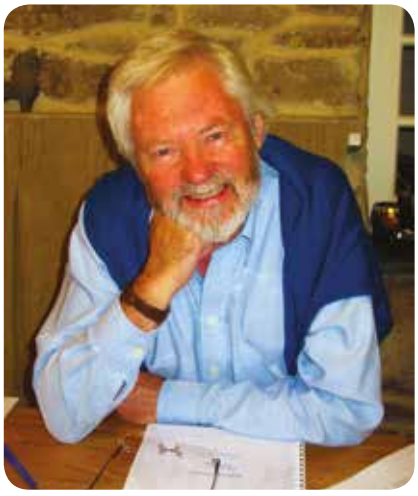
How precisely to do this, is again an important area for discussion. The experience of the Customer Forum in Scotland seems worth considering. There, the regulatory body fed in guidance on costs and efficiency throughout the process. At the end it set a price control based on the business plan negotiated and agreed by Scottish Water and the Customer Forum. Whether or how this approach might be adapted to the situation in England and Wales, where there are many companies rather than one, is a challenging question. And whether, as I have suggested elsewhere, it might be possible to create some form of competition in setting price controls, is another challenge again.

I have focused on two policy areas here, but in other areas too there is scope for learning from experience. The water, energy and other sectors have many great ideas – and we should seek to explore and develop the best of these.

Now is the time for posing questions and for engaging in debate. *Charting a Sustainable Course* makes a valuable contribution to many aspects of this debate. The issues are important, and thoughtful and informed contributions are essential. I hope that *Charting a Sustainable Course* will be widely read and its suggestions thoroughly explored.

Professor Stephen Littlechild

Fellow, Judge Business School
University of Cambridge



EXECUTIVE SUMMARY

The water sector finds itself at one of the most exciting times since privatisation in 1989. The regulatory framework is evolving and has a far greater focus on customer outcomes - and the opening of the retail market in April 2017 for all non household customers in England is a pivotal change for the sector. *Charting a sustainable course* drives for a sector that puts customers at the heart of all we do and aims to shine a light on the main policy issues facing the water sector - and promote a constructive and engaging debate about its future. Deciding on the right policy delivery options is not a straightforward task, but is vitally important to ensure the sector remains on a sustainable course, while maintaining the trust of customers and other stakeholders.

In Chapter 1 we explore the perception of trust by customers in the water sector and the reforms that help put the sector on a sustainable course

The achievements of the water industry in England and Wales since privatisation are well documented. Customer service has improved significantly, drinking water quality is higher and environmental standards have improved too. The industry has seen substantial investment in that time – at around £116 billion this equates to around £5,000 per household.[1] These successes have been underpinned by a robust policy and regulatory framework for the sector.

But the question remains as to whether the sector is on a sustainable course and will ultimately deliver the service improvements customers wish to see and a healthier environment, all at an affordable price, and in a way that the sector can continue to be financed in the long term.

We published our first in the *Changing Course* series in 2010, when we argued for a more sustainable sector that customers could trust. We emphasised the need for changes in the policy and regulatory framework to help more effective decision-making, and to provide incentives for sustainable solutions and more innovation.

Five years on and the sector does appear to be moving in the right direction. In particular there have been a number of policy initiatives from the UK and Welsh Governments during this time.

- The UK Government's white paper, *Water for Life* set out a vision for a resilient and sustainable water industry, putting customers at the heart of all that it does.
- The Water Act 2014 laid the foundations for the introduction of retail competition for all non-household customers in England from 2017. It also introduced a new primary duty for Ofwat to 'further the resilience objective'.
- The Welsh Government's *Water Strategy for Wales* set out its commitment to improving water quality and managing resources sustainably.

There have been some important customer-focused developments in the regulatory framework too, specifically at the last price review in 2014 (PR14). Customers' bills are now falling in real terms over the five years to 2020. There are new, stronger financial incentives for companies to deliver the right outcomes for customers, including performance commitments, Outcome Delivery Incentives (ODIs) and incentives to be more efficient and minimise total expenditure (Totex).

[1] Ofwat, Towards Water 2020 – meeting the challenges for water and wastewater services in England & Wales, 2015; and Severn Trent analysis

In Chapter 2 we explore customers' rising expectations

In Chapter 3 we set out the challenges of charting a sustainable course in a changing world

In Chapter 4 we discuss six key areas where policy reform is needed if we are to continue on a sustainable course for customers

Against this backdrop customers' expectations have continued to increase, in part shaped by the services customers receive elsewhere. The sector can and must respond to this – evolving to meet and go beyond their customers' expectations.

Customers today expect to be able to take their water service for granted. They assume that water will always be there when they turn on their taps, that it will be of a high quality, and that their waste will be dealt with efficiently. They also expect to be able to contact their water service provider in any way they choose, using digital channels and social media, at a time to suit them. Beyond this they would like water companies to provide a resilient and improving service; a cleaner, more sustainable service; a healthy water environment for everyone to enjoy; and bills that are both predictable and affordable.

At the same time as having to meet customers' growing expectations, companies also face a number of external challenges. These include having to: serve a growing and changing population; manage extreme weather conditions resulting from climate change (with hotter and drier summers, wetter winters and more variable weather patterns); meet higher environmental standards; and ensure that they remain financeable (with the pressure on the UK for investment in utility infrastructure and reductions in government budgets).

Striking the right balance in these outcomes and providing customers with what they want while addressing these challenges is not straightforward, with trade-offs inevitably having to be made. It is for that reason, we believe, that customers must be empowered and engaged in making decisions about the outcomes they want. There is also a growing and important role for markets in helping to deliver the right outcomes for customers.

We set out below six key policy questions in the areas where we believe reform could help the sector deliver the outcomes customers want. We also set out our responses to each of these questions and have suggested a number of potential delivery options that we believe could help ensure the sector continues on a sustainable course.

There are inevitably critical choices to be made about which policy options will help ensure customers are engaged and receive the services they want to see, and will deliver a healthier environment, all at an affordable price.

The six key policy questions:

A. How do we further empower customers in decisions about the future of their water services?

B. How do we ensure that the sector can deliver affordable services for customers in the long term?

C. How do we create a more resilient sector for water resources?

D. How do we tackle flooding and drainage?

E. How do we establish a fairer approach to delivering further environmental improvements?

F. How do we deliver innovation and introduce market solutions for the benefit of customers?

CHAPTER 1
Becoming a sustainable sector, trusted by customers

Backdrop to the water sector

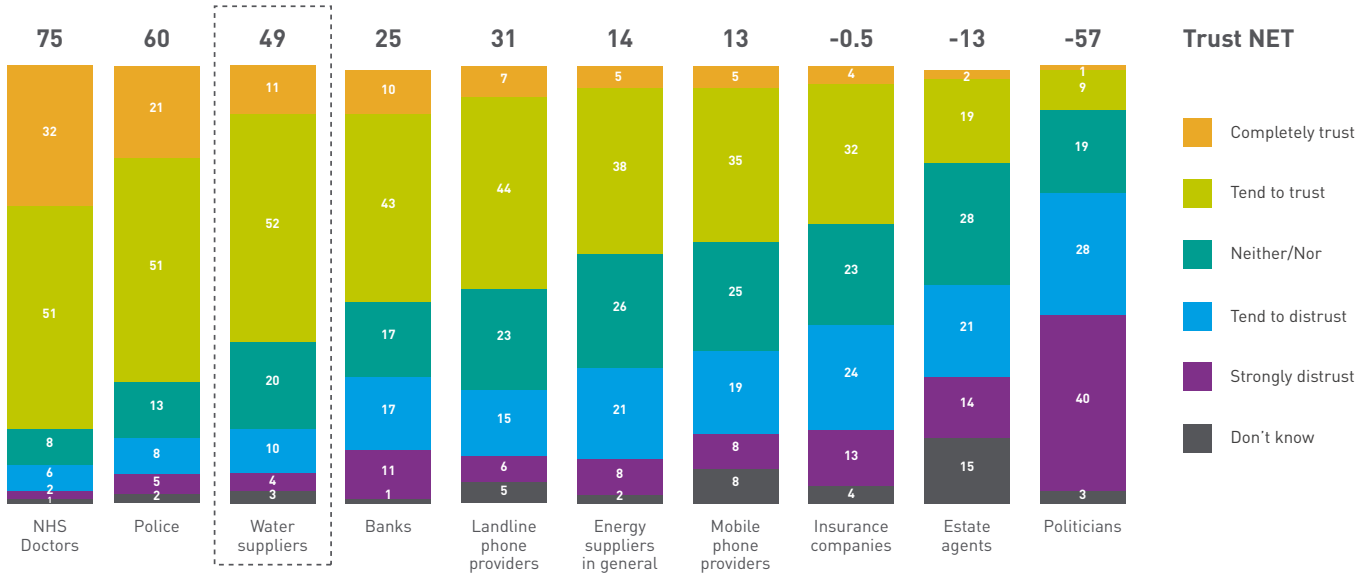
The water sector has been through a period of substantial transformation since it was privatised in 1989:

- Leakage has fallen by 35% since the mid-1990s.
- Sewer flooding has fallen by 75% in the past decade.
- 99.97% of drinking water in England meets the EU Drinking Water Directive standards.
- 98.6% of bathing waters in England and Wales now meet EU standards (up from 78% in 1990).
- Efficiencies by the industry have meant that bills are £120 lower than they would otherwise have been.
- Bills are set to fall by a further 5% in real terms over the next five years.
- Customer complaints have almost halved since they peaked in 2007/8.

These service improvements have been driven by the clear policy objectives that the Government has set and by the robust and predictable regulatory framework that is in place. These two factors have led to a doubling of investment in the sector since privatisation, such that this now stands at around £9 billion a year.

To continue to be legitimate in the eyes of customers, however, the sector must continue to maintain their trust. This is hard to win, yet easily lost. The water sector is in a relatively positive position at present, sitting just below doctors and the police as the third most trusted sector – and well ahead of banks and the energy sector. Trust in the energy sector is at an all time low. Poor service, higher bills and the failure to pass on lower wholesale costs to customers have resulted in intense, negative scrutiny by the media and an investigation by the Competition and Markets Authority (CMA).

Figure 1 - Extent to which consumers trust or distrust the following to be fair in the way they deal with customers or citizens



The water sector is without question committed to making sure that it maintains the position of trust it has gained by adhering to high standards of governance and by delivering its promises to customers.[2]

The industry is also developing a reputation for looking to the future and embracing steady, evolutionary change. This can only be good news for customers.

[2] Retail Market Review Baseline Survey, Report prepared for Ofgem, 2014

Changing Course

We have tried to be active in the debate about sector reform and published the first in the *Changing Course* series in April 2010. Our report, *Changing Course – Delivering a sustainable future for the water industry in England and Wales*, highlighted the need for a more financially and environmentally sustainable approach to be taken to the future evolution of the water sector.

Subsequent reports in the *Changing Course* series set out:

- proposals for how water trading in the sector could be developed (published jointly with Ernst & Young);
- the importance of sustainable financing for the sector (published jointly with National Grid); and
- proposals for implementing the Water Framework Directive (WFD) more sustainably.

We are pleased that a number of our proposals have since been reflected in changes to the policy and regulatory framework for the sector.

Recent action

There has been a great deal of positive development in the water sector in recent times.

Water for Life

The UK Government's white paper, *Water for Life*, was published in December 2011. It set out a vision for a resilient and sustainable water industry with customers at its heart.

The white paper noted that water supplies were already under stress, particularly in the south-east of England, that many rivers and lakes were not as healthy as they should be, and that challenges posed by population growth and climate change would be significant. The broader agenda set out in the white paper included abstraction reform, encouraging innovation and maintaining the confidence of investors.

A number of the elements of this vision were put into legislation within the Water Act 2014.

The Water Act 2014

The Act introduced reform with the aim of making the sector more efficient, innovative and resilient It also seeks to make the sector more responsive to customers.

The Act is an enabling framework that sets out general principles. It also provides for the introduction in April 2017 of full retail competition for all non-household customers in England, as well as establishing cross-border arrangements with Scotland (where a competitive non-household market has existed since 2008).

In addition to these changes the Act enables upstream reform. A key focus here is to encourage new entrants to provide new sources of water and offer sewage treatment services along with measures to tackle unsustainable abstraction.

Water Strategy for Wales

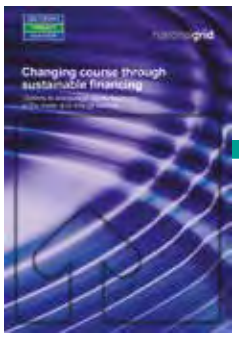
The Welsh Government published its *Water Strategy for Wales* in May 2015. The strategy included commitments to improving water quality. It also championed an integrated approach to water management and provided a framework for managing resources more sustainably.

The Changing Course series

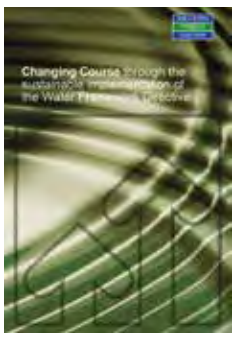
April 2010

June 2011

September 2012



November 2013



The regulatory framework

The most recent Ofwat price review in 2014 (PR14) represented the most significant development of the regulatory framework since privatisation. Ofwat sought to put greater responsibility on companies to develop their plans in consultation with customers, and reward well balanced plans. The following key changes were implemented:

- Placing far greater emphasis on engagement with customers, notably through the introduction of CCGs, giving customers and stakeholders a stronger voice in shaping companies' plans.
- Introducing Outcome Delivery Incentives (ODIs), designed to align the interests of companies with those of their customers by putting in place a framework of performance-related penalties and rewards.
- Encouraging companies to look at the whole life costs of their assets (by switching to a total expenditure cost assessment (totex)), and providing stronger incentives to reduce costs and, in due course, bills.
- Introducing separate price controls for water, wastewater, household retail and non-household retail, ensuring a greater degree of pricing transparency.

Future reform

Ofwat has been stressing in recent times the need for a water sector that maintains the trust and confidence of customers and other stakeholders.

Ofwat's recent document *Towards Water 2020 – meeting the challenges for water and wastewater services in England and Wales* poses a number of questions concerning the future of economic regulation in the sector. Ofwat asked water companies and other stakeholders to be part of a 'market for ideas' on key topics. It has encouraged the industry to contribute discussion papers to support this consultation. We have already contributed a paper on the initial topics of regulatory capital value (RCV) allocation and access pricing. Ofwat aims to consult in December 2015 on its initial proposals for regulatory change at the 2019 Periodic Review (PR19).

It is important that the industry takes a lead in shaping the sector's future and puts customers at the heart of the debate. Our report is designed to contribute to discussions in a positive way.

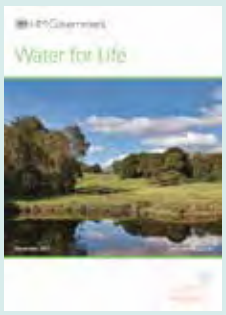
We welcome the opportunity to work with Ofwat and others in this area and this publication forms part of our contribution to that debate.

Maintaining trust

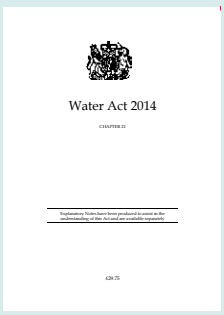
To maintain the trust of customers going forward it is essential for companies to:

- ensure bills remain affordable;
- deliver outstanding customer service (incentivised by ODIs);
- ensure the successful opening of the non-household retail market in April 2017, and successful upstream reform;
- deliver further environmental improvements; and
- continue to engage with, and educate, customers and the wider public.

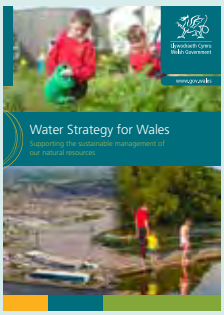
The recent legislative and regulatory developments



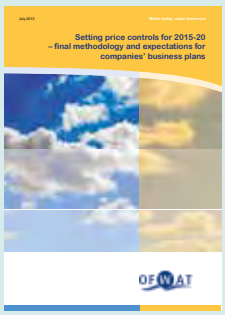
Water for Life



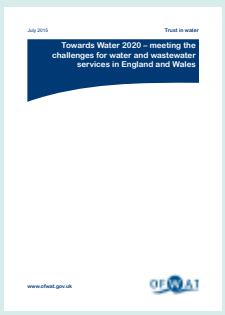
Water Act 2014



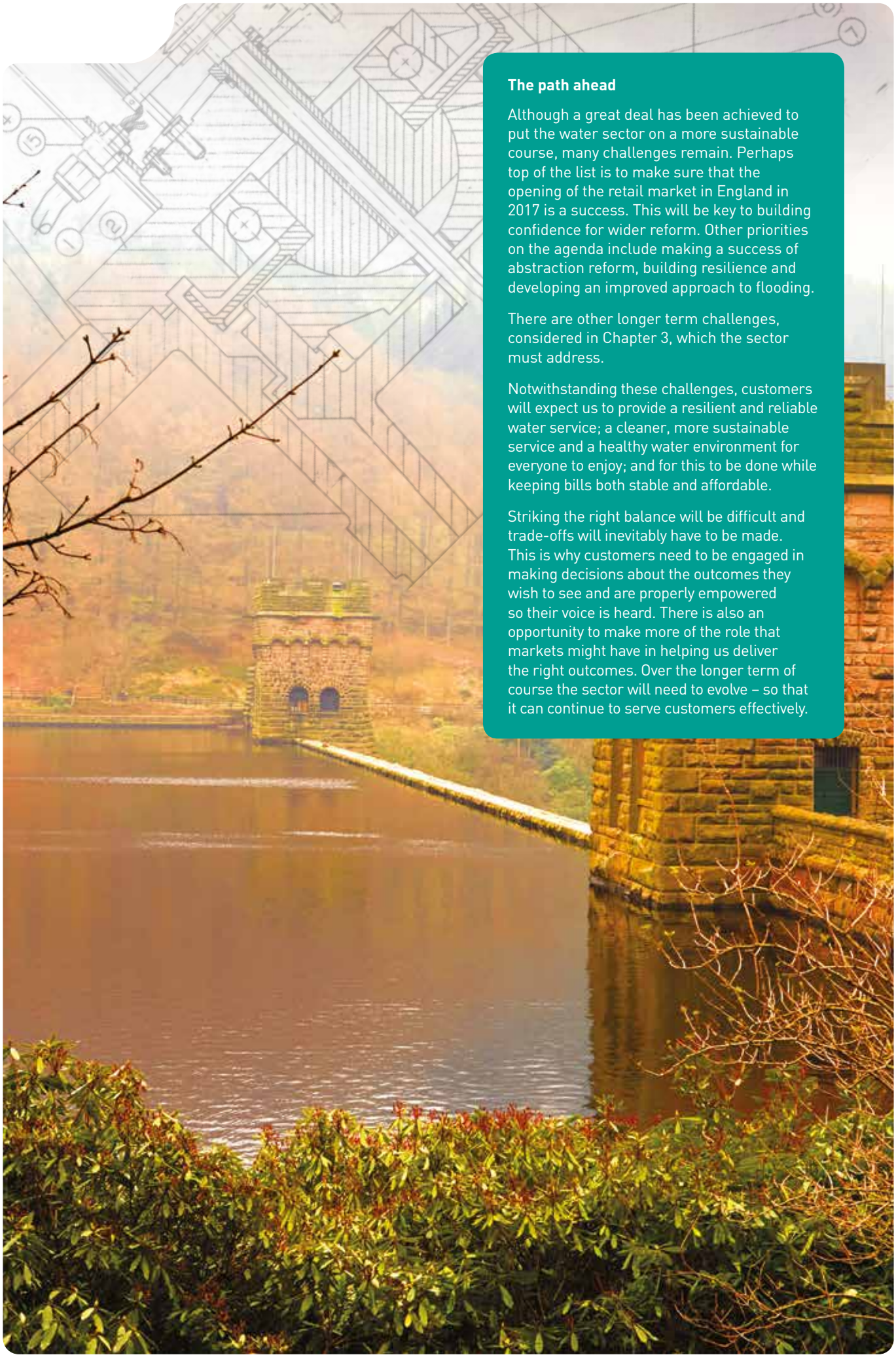
Water strategy for Wales



Ofwat PR14



Ofwat Water 2020



The path ahead

Although a great deal has been achieved to put the water sector on a more sustainable course, many challenges remain. Perhaps top of the list is to make sure that the opening of the retail market in England in 2017 is a success. This will be key to building confidence for wider reform. Other priorities on the agenda include making a success of abstraction reform, building resilience and developing an improved approach to flooding.

There are other longer term challenges, considered in Chapter 3, which the sector must address.

Notwithstanding these challenges, customers will expect us to provide a resilient and reliable water service; a cleaner, more sustainable service and a healthy water environment for everyone to enjoy; and for this to be done while keeping bills both stable and affordable.

Striking the right balance will be difficult and trade-offs will inevitably have to be made. This is why customers need to be engaged in making decisions about the outcomes they wish to see and are properly empowered so their voice is heard. There is also an opportunity to make more of the role that markets might have in helping us deliver the right outcomes. Over the longer term of course the sector will need to evolve – so that it can continue to serve customers effectively.

CHAPTER 2
Understanding customers' rising expectations

Customers' expectations from their water company are increasing, as is the case with many other services. However, it is not always easy to determine what customers really want and are willing to pay for.

On the face of it water is not an issue of immediate concern for the vast majority of customers. They often appear to be unaware of, or not particularly interested in, the issues that are carefully debated within the industry. For them, the most important thing is that their water flows and their wastewater is taken away.

Of course, this is actually a very simplified picture, as customers *do* care about a whole range of issues that are either directly or indirectly connected to the activities of the water industry. With care and effort it is possible to reveal a detailed and insightful picture of what customers want.

PR14: A major advance in understanding customers' views

The approach that many companies took for PR14 in understanding customers' views represented significant progress by placing customers at the heart of the process. During the review, companies carried our much more customer research than they had done previously, seeking to engage more fully with customers; gain a much clearer understanding of their expectations; and use these insights to shape their business plans.

With more than 250,000 customers consulted nationwide, the scale of the consultation demonstrated a far deeper, customer-centric approach over previous price reviews. Companies also appointed Customer Challenge Groups (CCGs) to oversee the whole process from start to finish.

The process we followed

We undertook a comprehensive process of engagement and consultation with three phases conducted over two years before to submitting our plan to Ofwat in December 2013. This process is illustrated in **Figure 2**.

Figure 2: Severn Trent's phased approach to customer engagement

Phase 1: December 2011 to April 2012

Customers shaped our consultation

We sought to understand how our customers and stakeholders wanted to be engaged. Our aim was to build a consultation exercise that was meaningful and convenient for them.

December 2011

Phase 2: April 2012 to April 2013

Customers shaped our plan

Our 10 objectives were developed in response to what our customers and other stakeholders told us.

April 2012

Phase 3: April 2013 to December 2013

Customers improved our plan

We invited our customers and stakeholders to challenge us about the balance of our plan and how it could be improved. We gave them real, costed choices.

April 2013

Plan submitted: December 2013

Customers supported our final business plan

Our proposals achieved an 88% acceptability rating among the customers we surveyed.

December 2013

At PR14 a number of water companies, including Severn Trent, went beyond the traditional stated preference approach to research as a model of engagement. This change in approach, where companies used different and multiple techniques to explore customers' wishes has led, in part, to the questioning of some of those cornerstone techniques of customer research such as Willingness to Pay (WTP).

As an industry, we have begun to embrace a better way of engaging with customers and conducting research. Part of this approach is to consult a broader and much larger audience. For example when we carried out our research we consulted future customers, in order to make sure that we encompassed the intergenerational implications of investment. Where previously the centrepiece of consultation might have been a WTP survey, this is beginning to be replaced by a much richer range of customer research.

We explored new ways to obtain more valid and more robust insights into the wishes of customers. We did this using both new approaches and fresh thinking. For example instead of simply trying to explain issues to customers, we:

- offered more relevant information that clearly put the choices in context;
- simplified subjects so that they were meaningful and comprehensible to customers;
- allowed customers to express a full range of choices (for example on service measures making choices even if they could simply elect for a lower bill and lower service standards).

Case study:
Simplifying and contextualising research with ODIs

The principles of ODIs are bound up in industry jargon and are often expressed in language that makes the actual proposals difficult to understand. Research carried out by Severn Trent, other water companies and CC Water all independently concluded customers were easily confused by terms such as reward, penalty, debt and financing. This is because these terms were being used in ways that are not typical to the layperson and often have negative connotations.

A number of parties conducted qualitative research into customer views about ODIs and concluded that customers were generally opposed to the concept. Customers seemed to reject the concept of rewards for companies, but understood the more familiar idea of penalties for failure. Customers were also confused about who would get the rewards and often could not see how the rewards could benefit either customers or the companies.

Our approach

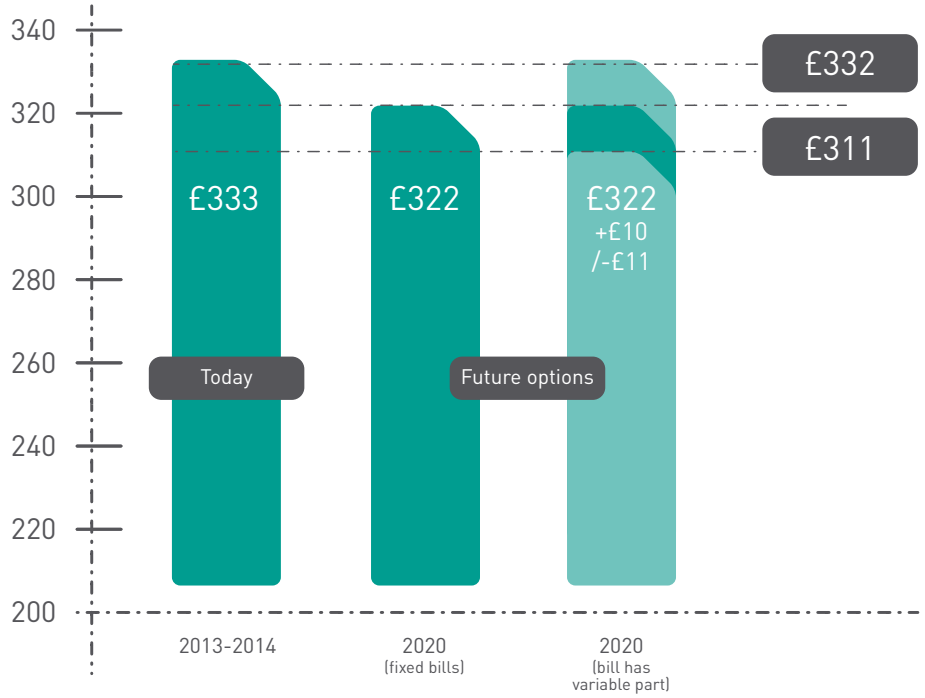
Our approach to ODIs was quite different. We sought to use the guiding principles outlined above, by clarifying and simplifying the issue and therefore removing the potential for confusion and negative associations. We showed the average bill for 2013-14 and then two possible options:

- A single lower bill produced by reductions in the cost of credit (but without explaining that aspect).
- A 'base bill' (of £322) with a variable component to it: this contains the reward and penalty aspect (but without referring to them in this way).

Providing some context and simplifying the ODIs in this way meant they became more meaningful to customers. After this point we could then go on to a more detailed examination of what might trigger the bill to be higher or lower than the base level – in other words, the penalties and rewards **(see Figure 3):**

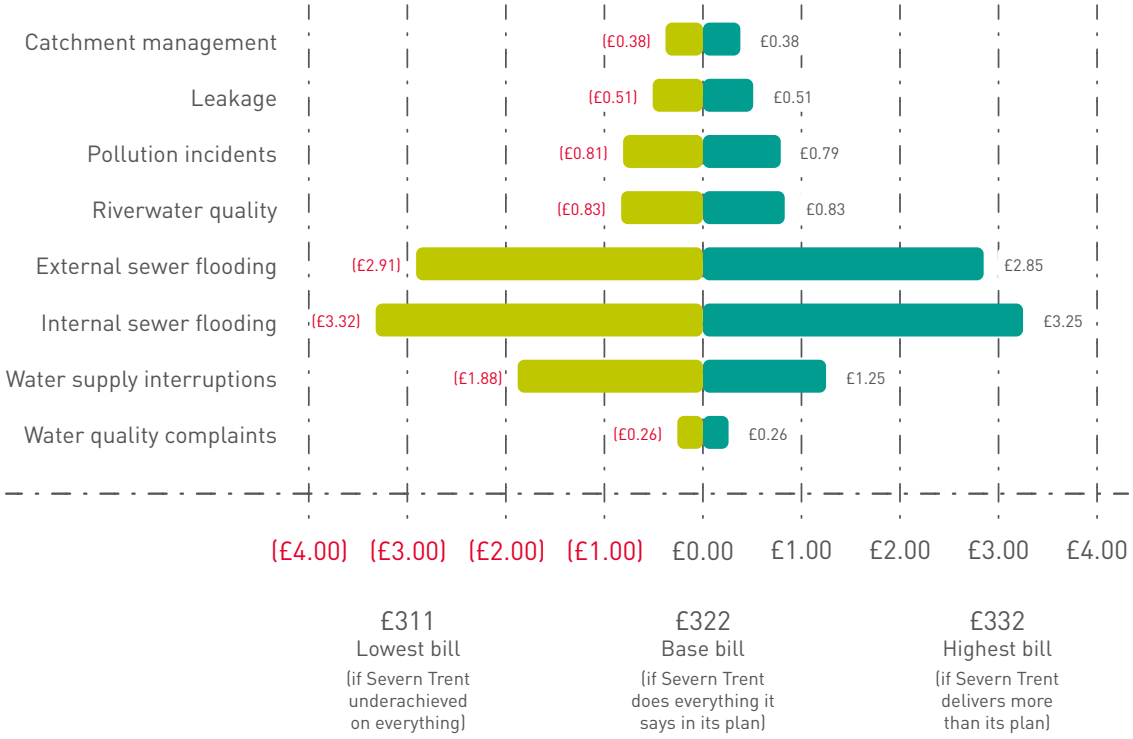
We would not envisage reflecting this on actual customer bills in due course as this could add confusion.

Figure 3 Simplifying ODIs for customers



SOURCE – STW PR14 research

The '+/- £10' could be explored, adjusted or even rejected completely by customers:



SOURCE – STW PR14 research

Using this approach, we found that the majority of our customers were supportive of both the principle and the details of the ODIs proposed.

Beyond PR14: More to do

In spite of the progress that we made at the last review on reflection it is clear that for many aspects we were simply repeating accepted industry best practice and relying on accepted theory – no doubt driven by a desire for standard results that we could use to make comparisons. An example of such an approach is the method that was used to derive values for WTP.

It is clear that we will be able to improve our approach further for the next price review, in part by ensuring that what we learned becomes business as usual and also by demonstrating increasingly robust ways to value what people want. In essence, what we have learned is that to reflect customer priorities successfully will require an evolving programme of customer understanding and engagement.

Customers have increasing expectations

Customers' expectations of the sector are being shaped by the world in which we live, with more choice, better service and rapid change. At the same time, customers are increasingly aware of local, national and international issues. As a result, customers are more empowered and better informed. Customers have come to expect more, and this applies for all sectors – from healthcare to on-line shopping.

Customer expectations are not confined to transactional aspects (i.e. the goods or services they receive). Customers also expect companies to perform an overall good within society and this is often evidenced by customer expectations of corporate social responsibility. In some instances, these expectations lead to customers choosing to purchase or boycott a particular good or service. What this means for water companies is that customer service, choice and low prices alone will no longer be enough. It also means that the idea that value for money is simply a relationship between service and price no longer holds true; 'service' needs to be replaced in this context with a broader, total package.

A customer's perception that a company offers a great experience is almost always based on the company's reliability. This concept of reliability is an increasing expectation across all sectors. An example today might be the confidence customers have when they place an order with an online retailer such as Amazon that their purchase will be delivered on time. Beyond that particular expectation is the knowledge that their website will always be able to cope heavy demand, seasonal peaks and other fluctuations. While Amazon's customers might not call this resilience, it is part of a real expectation and underlying need: reliable and dependable, no matter what.

Our changing expectations and preferences are evidenced in the use of digital technology, which facilitates choice, simplicity and convenience. Ofcom's annual Technology Tracker report for 2015 highlights this trend clearly: smart phones are now considered the most important internet device by customers, overtaking laptops and tablets.

Customers are drawn to companies such as Amazon because the service they offer works, is largely error free and enables effortless transactions. Even sectors that do not have the appeal of online shopping are recognising the benefits of such technology for their customers and becoming more digitally savvy. The digital strategy of HMRC for example includes enabling customers to file their tax returns on line. HMRC clearly sees that the transition from passively providing information to customers to making their lives much easier is vital. Not only is it good for the customer, but it also makes good business sense as it's faster, cheaper, and less prone to errors. So this type of digital development benefits both the provider and the customer.

Customer expectations have also shaped companies' responses to the overall social and environmental good they achieve. We see these aspects becoming increasingly important, with companies increasingly having environmental, philanthropic and other ethical trade aspects to their business. The expectation that corporate social responsibility is core to business, rather than an afterthought, is a relatively new expectation driven not just by a desire to ward off criticism, but rather a direct response to how customers value an organisation. Over time, these expectations have evolved to encompass not only what companies do (e.g. environmental good) but also how they go about business (e.g. they pay tax).

There are numerous examples of companies using this type of model to meet customer expectations of corporate social responsibility (CSR). Some are companies that have adopted this approach as they realise their value is increasingly linked to it while others were founded on this basis.

If such CSR activities really do meet customer expectations then companies who embrace them should attract more customers and do better than those that do not. The evidence shows that this can be the case, especially if the CSR activities are consistent with the perceived aims of the company as a whole. A good example in the UK is the manufacturer of drinks and smoothies - Innocent. The brand has been established with corporate social responsibility at its core, and the business has consistently strived to improve its ethical and sustainable credentials. Its success in the UK and Europe has demonstrated that product success is composed of good products, marketing and a platform of believable CSR.

In order to win and maintain customers, brands must evolve so that they meet customers' increasing expectations. In a sense, brands are as strongly differentiated by how well they deliver these expectations as they are by their actual products.

Customers' expectations of the water industry are increasing

The water industry is perhaps no different from other sectors in that customers have similar, as yet latent, expectations ready to be fulfilled by innovative companies. Having an affordable, basic, reliable service is important for customers, but it is not enough. The challenge is to deliver wider, long-term commitments in line with customer expectations for the environment and social good while remaining affordable. Only when we do this will customers feel we offer real value for money in the widest sense.

Throughout PR14 we undertook a great deal of customer research, some of which is summarised here as far as it relates to customer service and wider issues such as the environment and social good.

It is clear from many other companies' PR14 business plans that water companies found customers concerned about the same set of issues: a reliable system (with the intrinsic resilience to cope), doing wider social and environmental good, coupled with customer service delivered in the most convenient way.

Doing all of these things clearly has the potential to put upward pressure on bills. The challenge is to do all of the above while also ensuring that bills are affordable and in particular safeguarding those least able to pay in society.

Lack of progress and thinking only of the short term will not be accepted by customers as the price that has to be paid for bills to remain affordable.

A number of water companies show evidence in their business plans that customers value stable bills. Companies including Anglian, Wessex, and Northumbrian Water examined different aspects of affordability and, as we did, found that customers preferred changes to their bills to occur gradually, rather than sudden or large changes.

We have come to see rising expectations in the water industry falling into two broad categories, both of which must be provided at an affordable price: customer service/ transactional improvements (such as using technology to deliver a better and more convenient experience); and the wider social and environmental issues.

Another reason for rising expectations is that customers expect progress and improvement, they do not want lower service standards. That improvement has to be on network resilience, the environment and general good social responsibility.

In our research we found that people often stated that they wanted lower bills and the service to stay the same, yet, when given the opportunity, rarely chose this option.

There are five main areas in which customer expectations have risen over time:

- That companies provide faster, more convenient and easy ways to contact their water company, using digital technology.
- That the services provided are continuous and that the means of achieving this is sufficiently resilient so that it keeps going even in the face of a changing climate and population growth.
- That companies care for and enhance the environment, especially relating to rivers and other bodies of water.
- That companies are involved in activities that have good social outcomes, such as ensuring affordability and helping customers who struggle to pay.
- That companies 'do their bit'. Leakage is a good example here, as customers find it difficult when a water company asks them to use water wisely while leakage within the company's own network is (in the customer's eyes) high.

The combination of affordability plus meeting all of these expectations has been a feature of our research and that of other water and wastewater companies.

What customers want: research findings for water

Research has provided the sector with a strong steer on what customers expect to see from their service provider across a range of topics, including resilience, the environment and affordability.

Customers expect a service that is reliable now and will stay reliable

Various pieces of our research highlighted that a reliable water supply was vitally important to customers. Customers also wanted us to make sure it would remain that way in the face of a changing climate and population growth pressures.

To fully explore all of these issues we conducted four pieces of research into resilience, exploring customers' desires to prevent events such as long-term water supply interruptions and water restrictions. We considered overall levels of investment and customers' willingness to pay for them. We also took great care that customers understood what was asked of them and the choices were in the context of their overall bill.

Customers felt strongly that they wanted to avoid long-term water supply interruptions – in fact many found it simply inconceivable that future problems would not be planned for and addressed today.

Our research in this area uncovered clear customer views:

- Most take their water supply for granted – many have never experienced supply failures.
- Interruptions that last longer than a week are considered to be totally unacceptable.
- People are more tolerant if an interruption results from a natural cause or is out of the company's control (although most customers think we should be prepared for any potential threats).
- More than half thought that more than one source of water supply should be available for when things go wrong.

We were particularly interested in customers' views on our proposals to improve the resilience of Birmingham and surrounding areas. When told that currently 72% of customers had more than one supply of water available should it be needed, the majority wanted to increase this to either 78% or 87%. These choices represented either no bill increase or an additional £3 increase over the proposed bill for 2015-2020. A significant minority (around a third) were willing to pay even more to increase the proportion of customers with more resilient supplies to 95%.

Case study: Birmingham Resilience Scheme

What we asked customers

Customers were shown our proposals for the Birmingham Resilience Scheme and were asked to consider the consequences of the scheme both directly (the impacts on bills in return for higher 'resilience') and indirectly (the current and future consequences for choices made about resilience, including 'residual risks').

How we carried out the research

We explained to customers the specific challenges facing Birmingham supplies. We set out four potential solutions both with and without their bill impacts. Customers were told that the four options would add £3, £4, £5 and £6 respectively to their bills and that the average bill for 2015-2020 would be £318.

In keeping with the principles of making the research understandable and meaningful to customers, we showed customers basic lay-outs of the assets to help them make their choices. We were not able by law to show, describe or discuss actual assets and we knew that not doing so would keep things simpler, especially for those customers outside of the Birmingham area.

We showed customers a number of different stimulus slides, including the current situation and four alternative options.

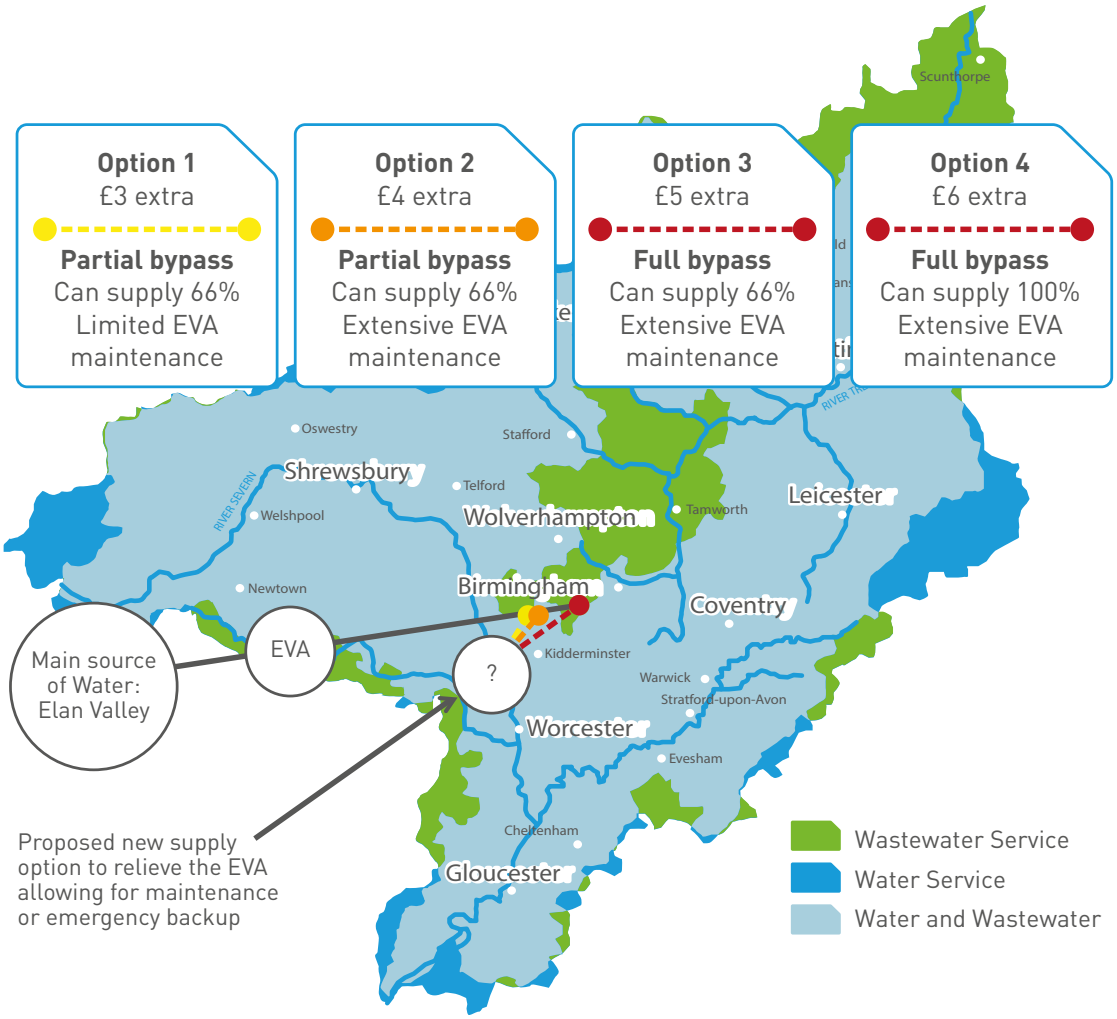
For each option we provided a simple figure showing the supply sources to Birmingham, how they would function in normal operation, and how each resilience option would work if and when called upon.

What customers told us

Perhaps surprisingly, customers overwhelmingly chose the most expensive solution offered, whether or not they as individual householders stood to gain from the scheme. This option would have added £6 to bills. This response was true across different income and demographic groups. So while the cheapest £3 option would have improved Birmingham's resilience, customers wanted a significantly more improved and lasting solution.

The scheme that we adopted in the end was the second most expensive solution, placing more reliance on other assets and adding £5 to bills. This option had received good customer support and made sense from a cost-benefit perspective.

This example showed that sometimes issues are so important to customers that they want us to be more ambitious. They want us to put forward high-quality solutions that offer a 'future proof' guarantee. They also want assurances that their money will be used to build something 'lasting'. Customers sometimes opted for solutions that appeared to go beyond the outcome of a more 'rational' cost-benefit analysis – particularly where issues really mattered to them.



Other companies' research into resilience

Other companies have carried out extensive research on the issue of resilience and reliable supplies both from a water standpoint and from a wastewater one. For example, 82% of United Utilities' customers support the idea of financial incentives to reduce supply interruptions. Universally, companies find that dealing with leakage is very important: customers see it as clear signal of waste and inefficiency.

Anglian Water's customers also support initiatives that safeguard the reliability of supplies; they see these activities as being important aspects of future planning. Like our customers and those of other water companies, views on resilience are strongly related to the customer's perception of climate change. Anglian Water's research also highlights the broader context of resilience: one in which customers were considering greenhouse gases as part of the problem that resilience was trying to mitigate.

Affinity Water has also explored the issue of resilience and its importance to customers. They found that customers were interested in looking at improving resilience by a combination of factors, but especially by managing demand.

We also found that customers adopted mixed supply and demand solutions in our research.

Resilience of the wastewater infrastructure is also important, especially with more unpredictable weather likelihood. Yorkshire Water has found through research that on-going communications before, during and after weather events has a role to play in resilience.

Customers expect an improved water environment

The issue of river water quality is important to our customers. Consequently we have explored this through willingness to pay studies, specific research into the nature of what customers expect and finally, testing and refining our proposals in the final business plan.

Customers strongly want to see river water quality improvements. They find environmental degradation unacceptable. This was backed up by our research, which found that investment to improve river water quality and to reduce pollution incidents attracted the highest willingness to pay values of any attributes tested.

Case study:
River water quality within the overall business plan

What we asked customers

We explored the issue of river water quality in the context of a variety of other things that customers could choose to invest in. River water quality was explored at the aesthetic and emotional level; what its means to customers and how it impacts on people's lives (for example for recreation). We also explored the river environment in terms of pollution, ecosystems and the location of any desired improvement. Armed with this detailed knowledge we tested and refined the packages of services that customers could have through both willingness to pay surveys and bespoke research that looked both at river water quality and at the overall balance of the final business plan.

How we carried out the research

After detailed research exploring customers' views on rivers and the water environment, we explored a number of investment levels that would deliver different 'service options or outcomes'. Rather than simply asking customers to 'pick' their preferred option, customers were able to change the level of investment and then see the impact of this on the average bill **(see Figure 4 below)**.

Customers could:

- increase spending in all areas – which would push their bills up significantly;
- increase potential spending in certain areas – and, on average, keep bills broadly the same;
- reduce spending in multiple areas – thereby opting for lower bills;
- select any combination of these options.

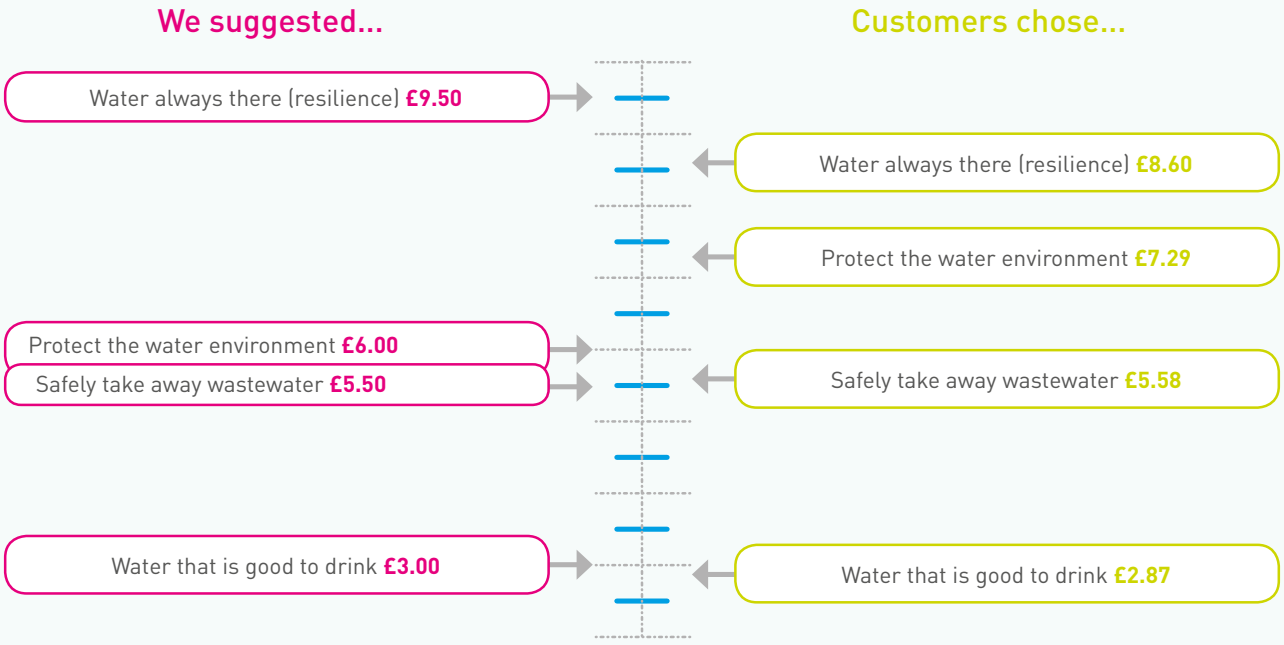
What customers told us

Customers place a high value on the quality of rivers, which they see as important for both ecology and recreation. More than half of customers felt that more should be done to improve river quality, primarily in relation to its ecology but also its aesthetics. The concern was highest for rivers with industrial pollution or where there is a deterioration of river flows. These sentiments are consistent across customers from both rural and urban areas.

Although these issues are important to customers, many are unsure about who is responsible for making improvements and about the particular role played by their water company. This raises the question of whether customers would be more interested if they knew what we do.

Figure 4: Customers' choices compared with our suggestions

On average, customers chose a very slight increase to their bills in exchange for an optimised set of investment choices:



Other company research into river water quality

Concerns about environmental and river quality issues are felt by other customers, not only Severn Trent's customers. Anglian Water's customers were also consulted about river water and other environmental issues. While they supported a modest degree of willingness to pay to reduce the loss of biodiversity and natural habitats, when it comes to rivers and canals views were more definite. Reducing pollution in rivers and canals and its subsequent impact on wildlife was found among customers to be the top priority for the local water environment. Similarly, 85% of Wessex Water's customers thought that protecting rivers, lakes and estuaries was an important element of the company's business plan.

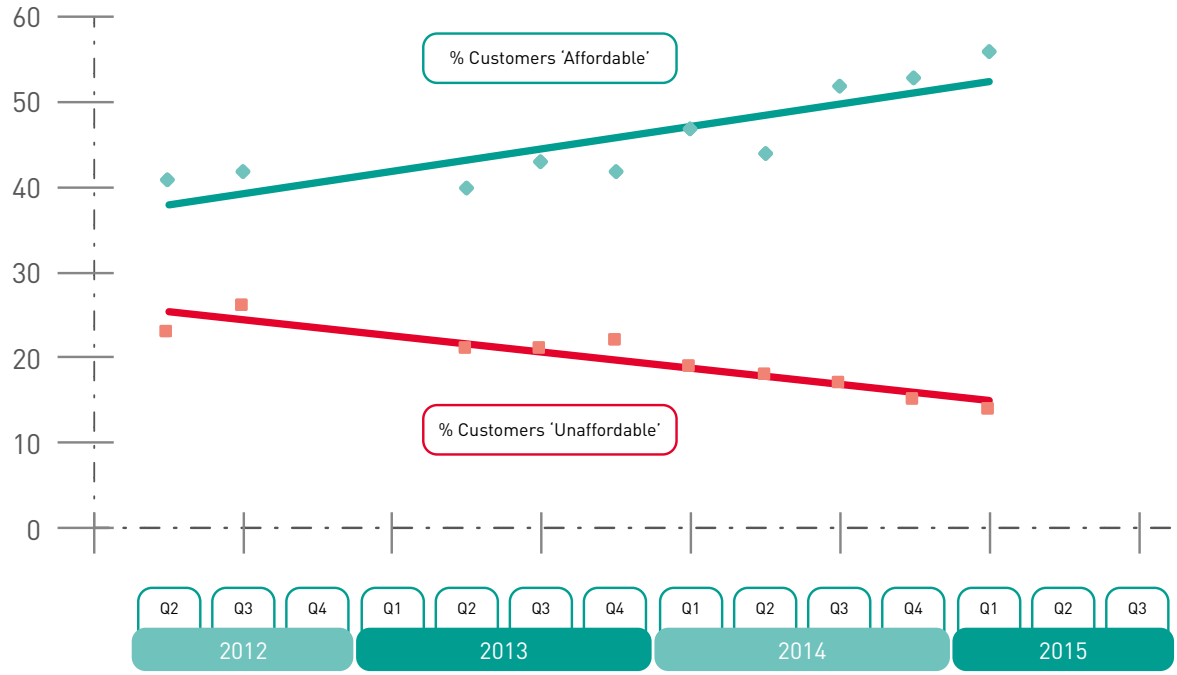
Affordability

Affordability is a vital aspect of the overall value proposition that water companies offer. However, customers do not want us to sacrifice what they see as 'progress'; increased investment, renewal and future thinking. In the research that we conducted only a small minority of customers opted to reduce bills from the proposed levels, if this meant that services deteriorated. For the vast majority of customers, value is more than just what they are being charged: it is affordable bills plus future-proof improvements.

That said, affordability of bills is of critical importance to customers. At present more than half (59%) of our customers consider their bills to be affordable, while around 15% do not. The number of customers who think we are not affordable is falling. Three years ago, more than 20% of our customers did not think we were affordable.[3] While this shows a generally positive picture we nonetheless explored affordability in almost every piece of research that was conducted.

Considerations of affordability were often a central test of customer research. For example, we made sure that the overall business plan was equally acceptable to a majority of those customers on annual incomes of less than £15,000 per household.

Figure 5: Percentage of customers who think their bills are affordable



SOURCE - STW Quarterly Tracking Survey, Q2 2015

[3] STW Quarterly Tracking Survey, Q2 2015

Case study: Helping customers who struggle to pay their bills

On average, customers of Severn Trent Water have the lowest bills in the UK. However, this does not necessarily mean that all customers find their bills affordable. Some customers will struggle to pay their bills, for a whole host of different reasons, whatever the bill level.

Since legislative changes have enabled the use of mechanisms such as social tariffs to help with customer affordability, we have undertaken a programme of research among different customer groups to obtain their views on the best way forward. This has included those who struggle to pay as well as the broader customer base. We explored how we could go about helping customers. Our research found the following:

- Helping people save water was a first step or went part way to helping them reduce their bills.
- Customers who struggle with their water bill typically need significant and immediate help in other matters. External organisations such as the Citizens Advice Bureau are able to provide such assistance, for example in making sure that these customers get all the help and assistance they are entitled to.
- Customers recognise that people with affordability problems often have complex needs that require individual solutions. Solutions that are seen as overly harsh, rule based and mechanistic are considered to be undesirable.

What we asked customers

We sought customers' views on the issue of those customers who struggle to pay and whether customers would be willing to pay anything on their bills towards helping. Within this research we explored the exact mechanisms by which people could be helped in detail, including who should be helped and what the conditions of this assistance should look like.

How we carried out the research

The research comprised qualitative and quantitative research: focus groups, individual interviews and a mixture of survey methods including online and face to face. A key aspect of the research was to ensure that we consulted those who would potentially benefit from assistance as well as those who could be net contributors to any proposed scheme.

What customers told us

Our research indicated that customers broadly supported a small part of their bill (£3) being used to fund an assistance scheme run by the Citizens Advice Bureau. These research findings have driven our overall approach in this area. Those who struggle to pay their bill can get tailored, individual support and advice and, if eligible, a tariff reduction of up to 90% of their bill. This approach has the backing of the majority of our customers.

Looking ahead, customers expect us to be innovative and to invest in the future in all areas – and affordability is no different. When it comes to helping those genuinely in need, customers want us to implement pragmatic, fair and personalised solutions.

Other companies' research into affordability and support for customers

Affordability is a major issue for the industry and while everyone finds a lower bill desirable, it is clear that most customers are not willing to accept service levels falling as a result:

- Anglian Water explored affordability with their customers and found that it was associated strongly with fairness and value for money. The vast majority of those surveyed considered this issue to be very important.
- Only 3% of Wessex Water's customers would want to have lower bills if that also meant service deterioration. As Severn Trent's own research shows, for most customers simply having cheap bills is not enough.

Other companies are also putting in place more ways to help customers who struggle to pay.

- Northumbrian Water conducted deliberative research into this issue and found, like us, that customers support such schemes provided they come with wider forms of help – such as metering or reducing consumption.
- Anglian Water's research also explored the issue of helping customers who struggle to afford their water bills. As our initial qualitative research found, there were some customers with mixed views about this sort of assistance, and concerns that it may go to those who are not truly deserving, especially if it is funded through cross subsidy by other customers. Our own research found that once the practical details of the level of cross-subsidy and the qualifying criteria were discussed, customers were generally much more supportive.

Moving forward

Changing and rising customer expectations within all sectors, including water, mean that it is more important than ever to understand and act upon them if we are to reflect what customers want. In fact, expectations shape the way in which people engage with us at all levels: good customer service is important, digital is important, but so are the environment, social good and affordability. It is the combination of these elements that represents the way in which customers measure our overall value.

During the PR14 process, we learned a great deal about our customers and about how best to engage with and understand them. The challenge now is to continue this process of understanding, further integrating it into everyday activities and making full use of the insights we get, not just from research, but from the myriad interactions that take place between us and our customers. Taken together, what we learn from our customers through research, engagement or interaction reveals what we need to do to meet and exceed expectations.

CHAPTER 3
Recognising the challenges of an ever-changing world

Against the backdrop of rising customer expectations, there are other challenges that the sector must respond to – in a cost effective way – if it is to remain on a sustainable course.

The main challenges are to:

- supply a growing population;
- manage the impacts of more frequent periods of extreme weather;
- improve the water environment in a more cost-effective way; and
- make sure that we have long-term sources of finance to meet the pressure on the UK for investment in infrastructure.

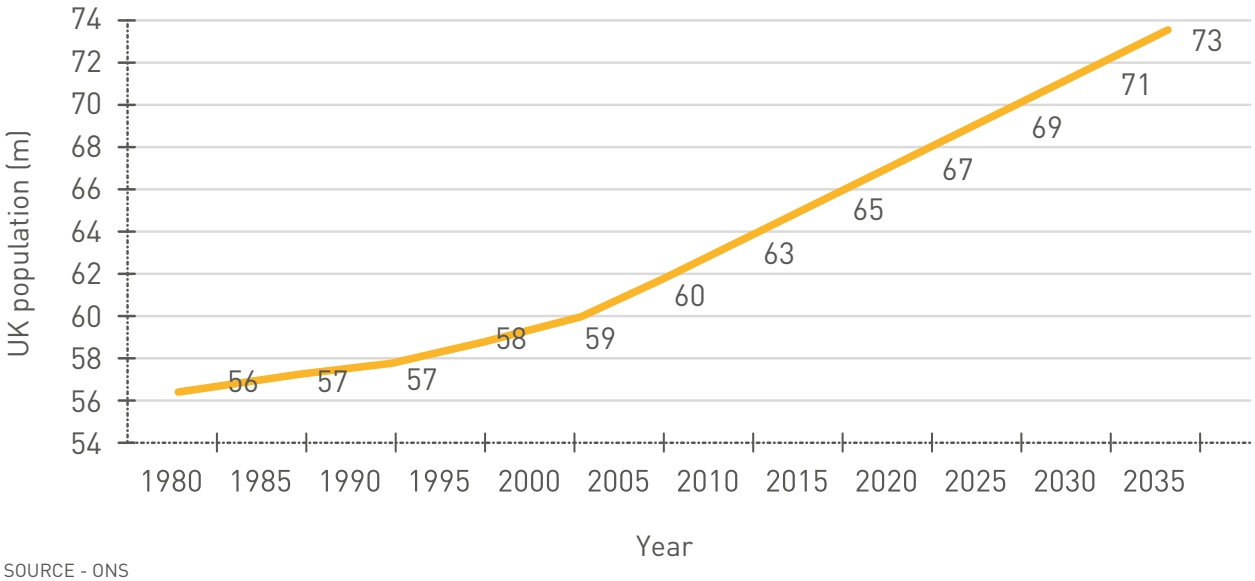
Challenge 1:
Supplying a growing population

The Office of National Statistics (ONS) has forecast that the UK's population will reach 73.2 million by 2035. That is around 8.5 million, some 13% more people than there are today. This rapidly expanding population, coupled with a growing trend in people living alone, means that many more households will need water and wastewater services – and the infrastructure this demands.

The challenge is compounded by the fact that much of the industry's existing infrastructure is ageing and needs to be replaced.

On current projections the sector will also need more water in order to serve these additional customers. Managing this at the same as delivering abstraction reform will be a considerable challenge.

Figure 6: UK population growth forecast

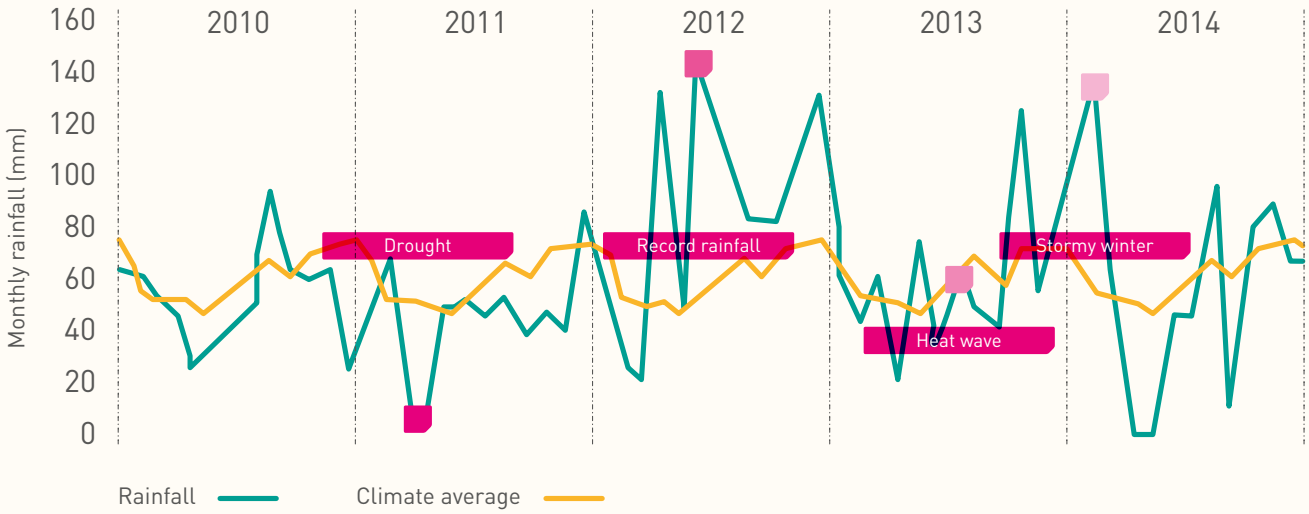


SOURCE - ONS

Challenge 2: Manage the impacts of more frequent periods of extreme weather

Extreme weather events over the past few years have put pressure on our infrastructure and the services we provide. Climate change means we are likely to experience more frequent extreme weather events in the future. **Figure 7** below shows the extreme weather that has been experienced over the past few years.

Figure 7: Extreme weather has been experienced first hand over the last few years



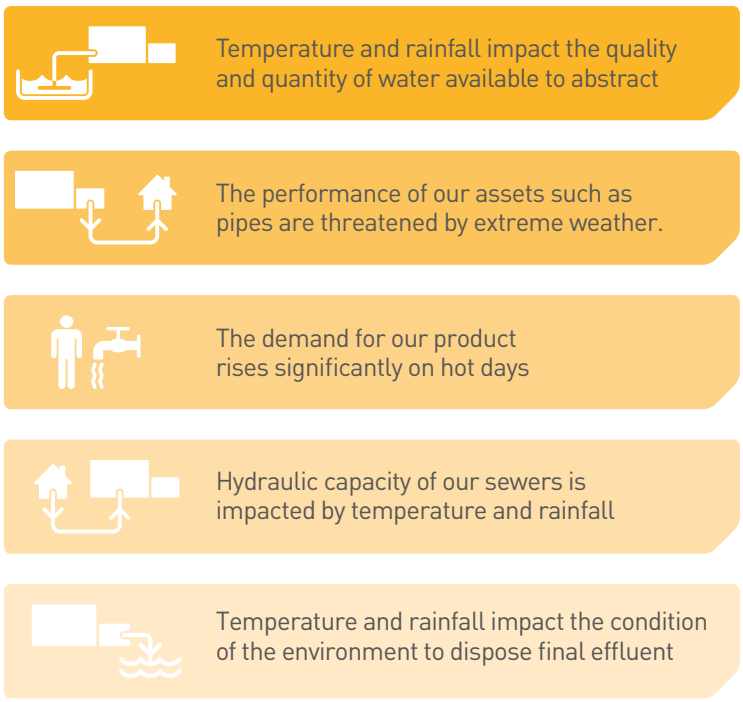
We have seen the impact of extreme weather first hand over the last few years:

- The drought conditions through 2011 and the early part of 2012 led to an increased number of sewer blockages, as sewer debris built up in the dry conditions. This period also challenged our supply/demand balance although we did not have to impose any restrictions on water use.
- Record rainfall levels and flooding in 2012 caused many problems for people across the UK. During this period we had to deal with a significantly higher amount of wastewater in our sewers and it proved a successful test of the defences we had built at our water treatment works since the floods of 2007.
- The heat wave in July 2013 led to sharp increases in demand for water across our region, on average 20% more than normal. This placed significant pressure on the short-term storage capacity across our network.
- The storms of February 2014 affected the national power network in the west of our region. As a result, over 6,000 of our customers lost water supply.

SOURCE – Future proofing, Severn Trent Water's climate change adaptation report, 2015

In the longer term, climate change presents a significant challenge to the sector and to customers. The water sector is arguably the more vulnerable to the impacts of climate change than any other sector.

Figure 8: The weather impacts all of the sector's activities



Although the sector has made significant progress in reducing its own greenhouse gas emissions, it needs to work harder to reduce, as far as possible, its carbon footprint (mitigation) and it also needs to address how it will manage services in light of the changing climate (adaptation).

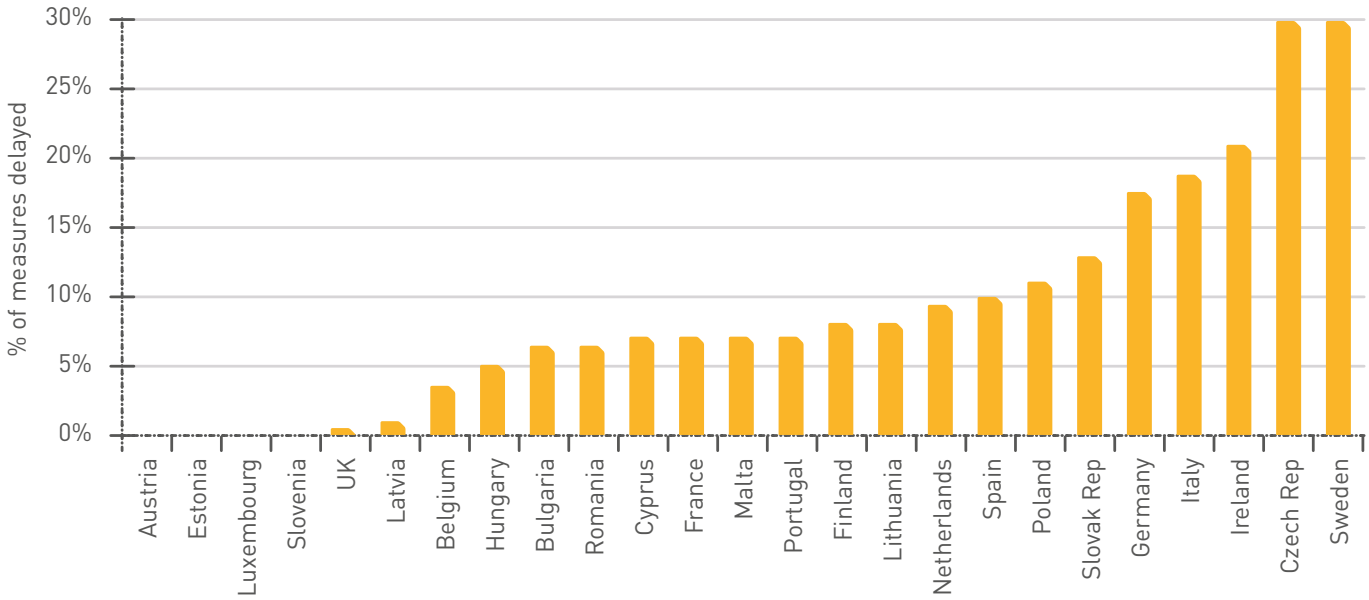
Challenge 3:
Improve the water environment in a more cost-effective way

The environmental performance of the water industry has increased considerably over the past 20 years and the industry should be proud of its contributions to this.

Many of the improvements have been driven by new laws and regulations, including the Urban Wastewater Treatment Directive (UWWTD), the Bathing Water Directive (BWD) and the Water Framework Directive (WFD). Although environmental improvements are to be welcomed, they come at the price of higher customer bills. Defra estimates that the delivery of the WFD, for example, will cost between £30 billion to £100 billion over the next 20 years.

When this issue was discussed by the House of Lords' European Union Select Committee, Defra stated that "to comply with the provisions to 100% would require some really quite impossible measures. Where we think we could see the benefits outweighing the costs, we would probably get to something like 75% good status by 2027". The figure below shows the progress that has been made by countries in implementing the WFD . The UK has been one of the fastest countries to implement the new measures. The question remains what is the right level of compliance and the right level of investment required?

Figure 9: Substantial delays in implementation of WFD measures



SOURCE – Report on the progress in implementation of the Water Framework Directive – Programmes of Measures, 2015

Another consideration – beyond the mere financial – is that environmental improvements in one area must be balanced against the potential that they will cause environmental damage in another area. So for example while the WFD is leading to a very high standard of waste effluent being discharged into our rivers and the sea, the wastewater treatment and pumping process this demands are highly energy intensive, thereby creating more greenhouse gas emissions. This begs the question of whether we ought instead to be looking at a much wider picture, rather than pursuing individual parts without taking account of wider implications.

Challenge 4:
Making sure that we have long-term sources of finance

In our publication *Changing Course through sustainable financing* we stressed the need to ensure there was a sustainable approach to financing in the utility sector. The water sector does not rely on government funding. To invest for the long term to deliver the services customers wish to see, the sector needs to be able to attract private investment at affordable rates.

Financing the costs of investment of water infrastructure relies extensively on private investors as income from customer bills is insufficient to cover these costs. Infrastructure is funded by debt and equity and customers pay for it over its useable life.

There is continued pressure on the UK for investment to improve and renew its utility infrastructure – £100 billion is needed in the electricity sector by 2020,[4] while water companies have plans to invest £44 billion during the same period.[5]

The think tank Policy Exchange reported in 2009 that Britain will need to invest a minimum £434 billion in infrastructure by 2020. Similarly, the National Infrastructure Plan – December 2014 sets out more than £460 billion of planned public and private investment to the end of the decade.

It is unlikely that significant funds will be forthcoming from the taxpayer. Defra's budget, for example, has been reduced by more than a third, leaving the Environment Agency with significantly less resources (for example, to tackle issues such as the increasing problem of flooding).

There will therefore be an ever increasing need for private sector investment and a need to encourage both debt and equity to invest.

Although the challenges outlined in this chapter are significant it should be possible to address them. The fundamental difficulty is how to do this in a way that we can afford. This too is achievable if we focus on what is most important to customers, embrace innovation and deliver further efficiencies. There is also a need to protect what is good about the current arrangements. Customers would expect no less.

[4]National Infrastructure Plan, 2014

[5]Ofwat, PR14 Final Determination

CHAPTER 4
Charting a sustainable course for customers

The water sector needs to continue to deliver what customers want in an ever changing world. Customers want to be empowered, engaged and have a greater say in the decision making process. And with their views increasingly shaped by the service offerings of other sectors, customers want better, more responsive customer services for example being able to contact their water company in the way they choose and at a time to suit them.

Customers expect to be able to take for granted that clean water will flow when they turn on their taps and that their waste will be taken away without any problems. Behind this expectation is a requirement to reduce the number of interruptions to water supplies, to ensure adequate water pressure and to deal with sewer flooding.

But customers also expect companies to behave responsibly by helping to protect the water environment and to act sustainably, ethically and transparently in the way business is conducted.

We need to meet these rising customer expectations while at the same time addressing a number of significant challenges – some of these, as we discussed in chapter 3, beyond our control. And all the while we must remember that affordability remains a key concern for customers.

The sector needs to find the balance between sometimes competing requirements, and there is scope for markets to play a role in helping achieve this.

In this chapter we consider six key areas that we believe require policy reform if the sector is to remain on a sustainable course. *Charting a sustainable course* aims to promote further industry debate on the policy delivery options.

Policy response and delivery options

Putting customers at the heart of decision making

A. How do we further empower customers in decisions about the future of their water services?

	Policy response	Delivery options
A.1	Enable customers to voice their choices by empowering the Customer Challenge Groups (CCGs) to play a more important role in the price setting process	• Ensure earlier and more active involvement between Ofwat and the CCGs through the price setting process to achieve a more customer-centric settlement
A.2	Recognise customers' views in determining the right balance between prices and outcomes	• Allow greater scope in the price setting framework so that customers can choose the package and level of services they want • Allow companies to agree with their CCGs the level and scope of service measures based on customers' views • Make better use of our knowledge of customers on an ongoing basis.

Protecting affordability

B. How do we make sure that the sector can deliver affordable services for customers in the long term?

	Policy response	Delivery options
B.1	Keep the average level of bills at an affordable level	• Ensure that expenditure on resilience, the environment and other spend is kept at an affordable level • Do not introduce unnecessary risk into the regulatory framework as this could increase the cost of capital and create unsustainable financing
B.2	Recognise and enhance the benefits of existing water charging structures	• Ensure that the socially beneficial cross-subsidies that are present within companies' charging schemes (e.g. regional average charges) are not unwound without government direction • Start to develop tariff policies that send appropriate price signals about scarcity and value • Ensure that the sector gets access pricing methodology right to encourage cost-effective entry
B.3	Promote and develop companies' roles in using charging policies to deliver socially desirable outcomes (to protect vulnerable customers, for example)	• Maintain the 1.5% cross-subsidy cap for social tariffs but consider increasing this in advance of the next price review in 2019.

Delivering a more resilient service

C. How do we create a more resilient sector for water resources?

	Policy response	Delivery options
C.1	Protect critical national infrastructure (CNI)	• Establish clear requirements for CNI
C.2	Establish the level of resilience of the water sector, with the level of improvement determined by local choice	• Agree common measures of resilience • Allow local customer choice to determine local resilience standards
C.3	Secure long-term supply capacity by recognising the pivotal role of water companies	• Retain accountability for supply/demand planning with water companies
C.4	Prioritise demand management in a water constrained world	• Make water efficiency and storm water retention planning conditions for new homes • Unlock potential innovation by aligning retailer and wholesaler incentives.

Tackling flooding and drainage

D. How do we tackle flooding and drainage?

	Policy response	Delivery options
D.1	Implement legislative and regulatory changes required to unlock the full potential of innovative approaches	• Remove the automatic right for new developments to connect to the public sewer system or • Ensure charges for new development reflect the full cost that new developments impose on the sewerage system • Make water companies statutory consultees on all planning applications that have implications for the public sewer network
D.2	Empower water companies to play a greater role in managing, operating and funding flood defences	• Consider privatising flood defence assets while maintaining the strategic role of the Environment Agency
D.3	Explore opportunities to make better use of surface water	• Realise opportunities for surface water as a major water supply source.

Balancing environmental sustainability

E. How do we establish a fairer approach for delivering further environmental improvements?

	Policy response	Delivery options
E.1	Ensure that environmental legislation is implemented in a way that delivers improvements while also keeping water bills affordable	• Reconsider the scale of improvements to be made by 2027 • Use local priorities to determine the rate of progress • Allow overall affordability considerations to determine the pace of change
E.2	Ensure that other sectors make a proportionate contribution to environmental improvements	• Re-prioritise existing funding to help farmers make environmental improvements • Promote innovative practices and partnership working, building on the success of catchment management • Introduce stricter licensing of new products that might damage the environment • Introduce clearer labelling so that consumers understand the environmental impacts of their purchases
E.3	Progress abstraction reform at the earliest opportunity	• Ensure customer engagement and support for chosen reform option • Implement pilots before wide-scale implementation
E.4	Consider pricing for scarcity in the long term	• Commission research on options for scarcity pricing, building on successful international examples.

Driving greater innovation and market solutions

F. How do we deliver innovation and introduce market solutions for the benefit of customers?

	Policy response	Delivery options
F.1	Provide direction on where markets should develop	• Allow further flexibility in the licensing framework for companies to innovate the industry structure • Learn from non-household retail market reform
F.2	Progress the opening up of the existing water value chain	**For water resources** • Create greater transparency on systems, pricing and costs for market participants • Require more market testing of longer terms plans **For sludge** • Remove the barriers that currently exist to unbundling and separation
F.3	Encourage new markets and innovative ways to deliver better water management	• Encourage markets in eco-system services • Explore the potential for Catchment System Operators.

PART A

How do we further empower customers in decisions about the future of their water services?

Putting customers at the heart of decision making – key points

Policy response	Delivery options
Enable customers to voice their choices by empowering the Customer Challenge Groups (CCGs) to play a more important role in the price setting process	• Ensure earlier and more active involvement between Ofwat and the CCGs through the price setting process to achieve a more customer-centric settlement
Recognise customers' views in determining the right balance between prices and outcomes	• Allow greater scope in the price setting framework so that customers can choose the package and level of services they want • Allow companies to agree with their CCGs the level and scope of service measures based on customers' views • Make better use of our knowledge of customers on an ongoing basis.

Introduction

Customer choice is important. But for this to have meaning we have to have a real understanding of what customers want and value. It is not about offering choices that are simply variations on what we think matters to customers.

While the industry made significant steps forward in conducting customer research at PR14 as discussed in Chapter 2, a key question remains as to what extent the company plans truly reflected customers' choices.

Research that openly explores what customers want – or could want – is an important first step. Of equal or perhaps greater importance is how we listen and then act on the findings of that research. How well do we fully accept what we hear as an industry? Is there a risk that we only ask customers 'constrained choices', for example, schemes we are already pursuing, or ask for endorsements to marginal changes?

We also need to have informed and empowered CCGs, so that research findings are not overruled in favour of what is assumed to be the 'correct answer' (for example, if customers wish to have a scheme that is not cost beneficial in the short or medium term). Overruling what customers want risks undermining customer choice and representation. Finding out what people really might want, on the other hand, paves the way for industry innovation.

Improving research to give customers more meaningful choices

To build on the progress made at PR14, there needs to be a shift in the way we think about choice. We need to use more meaningful research to effectively 'democratise choice', with the findings scrutinised by the CCGs.

The use of more advanced approaches to customer research is important, particularly as the water industry has historically had low engagement with customers. To get the best feedback from customers, the industry must apply more effective research techniques:

- Subjects and choices need to be contextualised. For example, customer views on ODIs first had to be placed in the context of how they would work in reality, not simply the theory behind them.
- Complex or technical subjects need to be made more meaningful. Issues should be presented so that customers can relate to them easily and can draw on their own experiences.
- The full range of choice of what the water company can do should be clear to the customer. Choices should be meaningful, with customer-centric outcomes. Examples include the water and wastewater service they receive, the environment, the extent to which bills change and the causes of these changes e.g. increased environmental standards, serving a growing population etc.

Asking customers and accepting their choices

In addition to the considerations of research, a more significant shift needs to occur. We need to be prepared to ask customers what they want in an unconstrained way – and accept what we hear back.

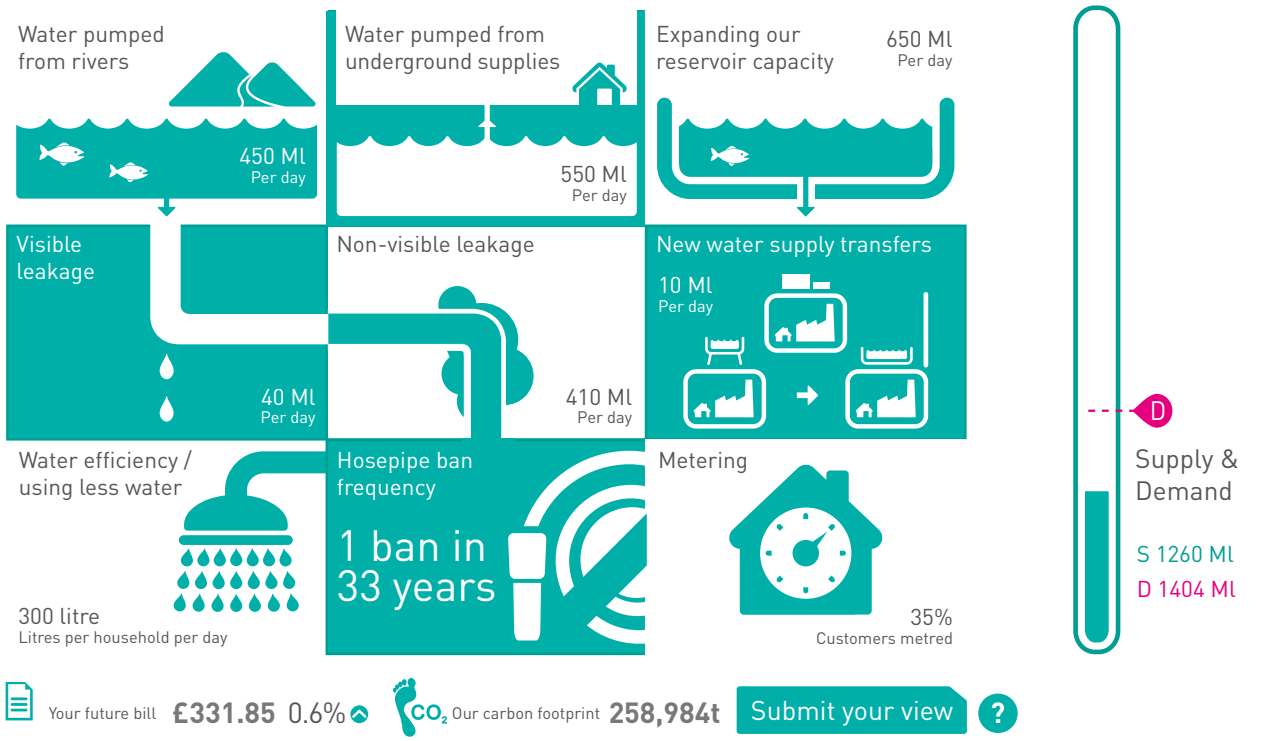
The combination of a sector characterised by low involvement, knowledge and relatively low interest means it will inevitably be challenging to get fully representative customer views. CCWater's recent research confirms that it is difficult to achieve representative engagement and problematic to combine different forms of engagement to form one overall 'view'. Innovation is needed to test out different techniques.

Case study:
Meaningful research to address supply and demand balance

At PR14 we asked customers to explore a hypothetical future where they could decide how to address the issue of balancing water supply and demand. We used an interactive, digital app where a variety of variables could be altered (e.g. leakage, metering, where and how water is abstracted etc.). We presented these subjects in a simple visual that allowed customers to change each variable by moving a 'slider' in the app.

Customers could see immediately the full impacts of the choices they were making on the supply-demand balance and on bills.

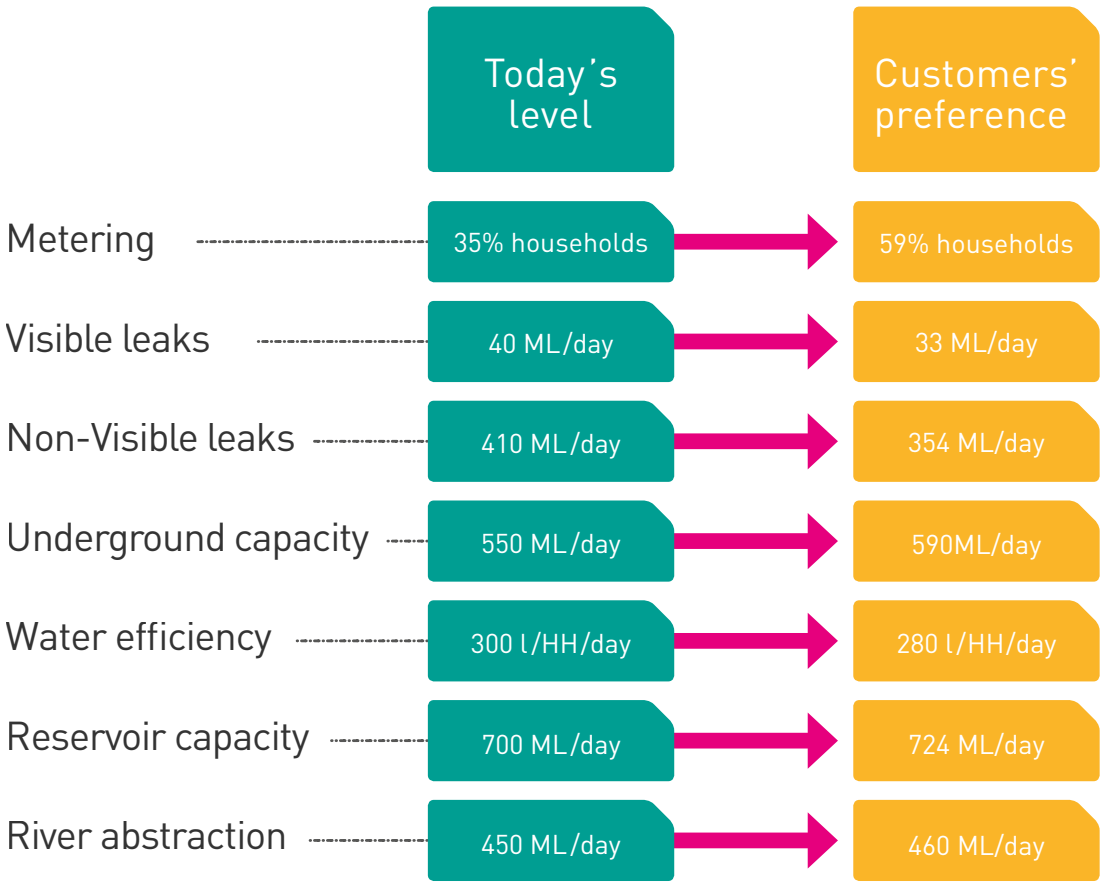
Figure 10: The impact of customer choices on the supply-demand balance and bills



By simultaneously linking customers' bills to outcomes (e.g. better rivers) and the way in which those outcomes are achieved (e.g. reducing leakage) it becomes easier for customers to express a meaningful choice and to place that choice firmly with their water company.

The approach also removes the need to 'educate' the customer per se, on a specific issue – by aiming to achieve it implicitly. Leakage is the best example in this case study. Instead of having to explain the concept of the economic level of leakage, it is built into the simulation.

Figure 11 - Customers chose to reduce leakage, even if it meant a bill increase



In this example, our research indicated that customers still chose to reduce leakage significantly, even if doing so meant a bill increase. The responses we received were much more nuanced and meaningful than if we had simply asked "Do you want less leakage?"

Policy response and delivery options

As a contribution to the debate, we believe there are two key areas for policy responses.

1. First, **empower CCGs** to play a bigger role in the price setting process to enable customers to voice their choices. Early and more active involvement between Ofwat and CCGs would achieve a more customer-centric settlement.
2. Second, **recognise customers' views** in determining the right balance between prices and outcomes by allowing greater scope in the price setting framework and make better use of our knowledge of customers on an ongoing basis.

Empowering CCGs to play a bigger role

Taking the experiences of PR14 and the examples of much improved research methods, we can, as an industry say we are getting much better at understanding customers' priorities. However, this cannot translate into meaningful choices if the processes after the research prevent customers' voices from being heard and acted on.

The CCGs are crucial to making this process work to the advantage of all. Empowered CCGs backed by meaningful customer research should help identify customers' views. This means, for example, that if customers want a package of 'service measures' that do not necessarily accord with what we think they should be, we should not simply decide that we know best and ignore them.

Allowing customer choice to be properly reflected in plans has many benefits:

- The regulatory burden and its knock-on costs to customers are reduced, not only financially but also in terms of being able to deliver the outcomes customers wish for.
- It allows for greater innovation in the industry through an agenda set by customers, overseen by Ofwat.
- The outcomes will have stronger legitimacy in the eyes of customers.

The notion of negotiated settlements between customer groups and companies shows one way in which good research and engagement can help deliver more of what customers want.

At the last price review in Scotland for example the equivalent of the CCG, the Customer Forum, worked with customers, the regulator (the Water Industry Commission for Scotland), the Scottish Government, and Scottish Water to put customers at the heart of the decision making. Similarly, the UK Civil Aviation Authority invited airlines and airports to engage constructively on certain elements of the price control.

There are examples in North America where customers and utilities have sometimes reached settlements that are then accepted by the regulator. Where regulators have encouraged such settlements, they have often led to outcomes that are innovative and incentive based.[6]

In these cases customers have been given a voice as far as is practically possible while regulatory oversight has been retained. Elements of the negotiated settlement process in Scotland are worth further consideration as it has been widely viewed as transparent, cost effective and delivering good outcomes for customers.

The Water Industry Commission in Scotland played a pivotal role in providing timely, clear guidance notes on technical matters such as financing and cost efficiency where the Customer Forum needed expert input. The guidance also helped to define the boundaries for negotiation.

Within England and Wales, there would be multiple companies negotiating their own settlements and care would need to be taken to not undermine the rivalry that played a powerful role during PR14.

There is further debate to be held on the precise remit of CCGs at the next price review and the areas where Ofwat would need to retain its discretion. Whatever the role the CCGs play in the next price review, it is clear that being well informed by Ofwat is a powerful enabler for making the CCGs effective in representing stakeholder interests.

In an industry where there is relatively little customer choice, customers are judging water companies based on their actions and intentions for the future. Building in better opportunities for customer choice to be revealed, expressed and acted on will be vital if we are to build that sense of value, trust and legitimacy that the water industry needs.

[6] Littlechild, S. Regulation, over-regulation and some alternative approaches, European Review of Energy Markets, 2009

Recognise customers' views in determining the right balance between prices and outcomes

In addition to empowering CCGs further benefits would also come from allowing:

- greater scope in the price setting framework so that customers can choose the package and level of services they want;
- companies agree with their CCGs the level and scope of service metrics based on customers' views.

The PR14 framework set standard levels of efficient costs and for a number of ODIs set an industry-wide upper quartile service level target for companies to perform against. Although this is helpful in defining a single benchmark for price and service, it can remove customer choice from the equation. Under the current structure, if customers wanted a lower service package in exchange for a price reduction, then the water company delivering that package would be seen to fail as it would miss its ODI targets. Hence there is a disincentive to deliver the package of service and price that customers may really want.

Not all customers should be necessarily compelled to pay for upper quartile service if they would prefer to trade a lower level of service for a lower price. This would of course not apply to the statutory targets set by the Drinking Water Inspectorate and the Environment Agency. However, other service dimensions such as leakage, sewer flooding and supply interruptions can be expensive to improve and savings could instead be passed to customers if they preferred a lower level of service in these areas.

In the illustrative example below, the service package and the efficient cost of delivering that package is determined through the price review process. We would then introduce a further step to allow the CCGs to represent customers' views by choosing a package that may be slightly different from that on different dimensions of service. The CCG would represent the generality of customers' views in the decision and would agree a service/price package for the entire customer base.

Figure 12 – Price/service packages examples

The package of lower service, lower price may for example allow a higher level of leakage and more interruptions to supply than today – compensated by a lower bill.

Change to service package - 10%
Change to bill - 3.2%

Change to service package + 10%
Change to bill + 3.5%

Making better use of our knowledge of customers on an ongoing basis

We conducted a significant amount of research during PR14 in order to develop a robust business plan that reflected customers' priorities. In addition to this, we conduct on-going, continuous research, surveying around 1,000 customers every quarter and extend this process to customers nationwide twice a year.

Moving forward and building on what we have learned from PR14, to better understand customer views, research should encompass three key themes:

1. It becomes more continuous in nature – it is not a step up of activity in response to an impending price review.
2. It relies much less on what customers say they want and much more on what they reveal to be important, through actual behaviour or other techniques that go beyond what is purely stated.
3. It seeks to represent the right mixture of customers' real wishes rather than getting supporting evidence for the activities a company wants to undertake.

Continuous and revealed insight

Knowledge of our customers' preferences is something that is all around us. Everyday we have many opportunities to learn from the interactions we have with customers. These include telephone enquiries, on-line interactions, social media themes, the interactions customers have with us in the community, the choice to visit a recreation site etc. All of these interactions will have a core purpose (e.g. paying a bill), but also contain the possibility for more to be discovered if we begin to examine them.

We believe that the key to better reflecting what customers want is to go beyond reliance on research that relies only on stated responses. Such approaches have been criticised as often people are not able to verbalise their view about something accurately (as it is not something they are consciously aware of), or their stated behaviour, as it is inconsistent with their actual behaviour. Revealed preference, experimental and implicit approaches are alternatives worthy of further examination. As with any research technique, the ability to uncover customers' underlying preference or predict real choices is also down to how the research is conducted and its context.

PART B

How do we make sure that the sector can deliver affordable services for customers in the long term?

Protecting affordability – key points

Policy response	Delivery options
Keep the average level of bills at an affordable level	• Ensure that expenditure on resilience, the environment and other spend is kept at an affordable level • Do not introduce unnecessary risk into the regulatory framework as this could increase the cost of capital and create unsustainable financing
Recognise and enhance the benefits of existing water charging structures	• Ensure that the socially beneficial cross-subsidies that are present within companies' charging schemes (e.g. regional average charges) are not unwound without government direction • Start to develop tariff policies that send appropriate price signals about scarcity and value • Ensure that the sector gets access pricing methodology right to encourage cost-effective entry
Promote and develop companies' roles in using charging policies to deliver socially desirable outcomes (to protect vulnerable customers, for example)	• Maintain the 1.5% cross-subsidy cap for social tariffs but consider increasing this in advance of the next price review in 2019.

The water industry: a case to answer 2015, New Policy Institute.

Introduction

The affordability of water bills has always commanded the attention of policy makers in the sector. This is to be expected for an essential service that customers cannot live without.

Improving the quality of water and wastewater services for customers and addressing the legacy of previous underinvestment, while keeping bills affordable, has been and remains a key industry challenge.

Bills increased markedly in real terms in the 25 years after privatisation – see **Figure 13.** The average household bill of £419 in 2014-15 is some 50% higher in real terms (i.e. after removing the effects of inflation) than in 1989-90. The PR14 price determinations will help slow this rise, and reduce bills by around 5%.

At the same time rising household incomes over this period (in real terms) has allowed the majority of customers to benefit from increased spend on water services while living standards were mostly improving.

However, the 2008 financial crash and the consequent impact on household incomes remind us that there is no room for complacency in relation to affordability.

The pressure on household incomes since 2008 in particular has made it essential for water companies, along with the Government, regulators and stakeholders, to prioritise affordability as an outcome.

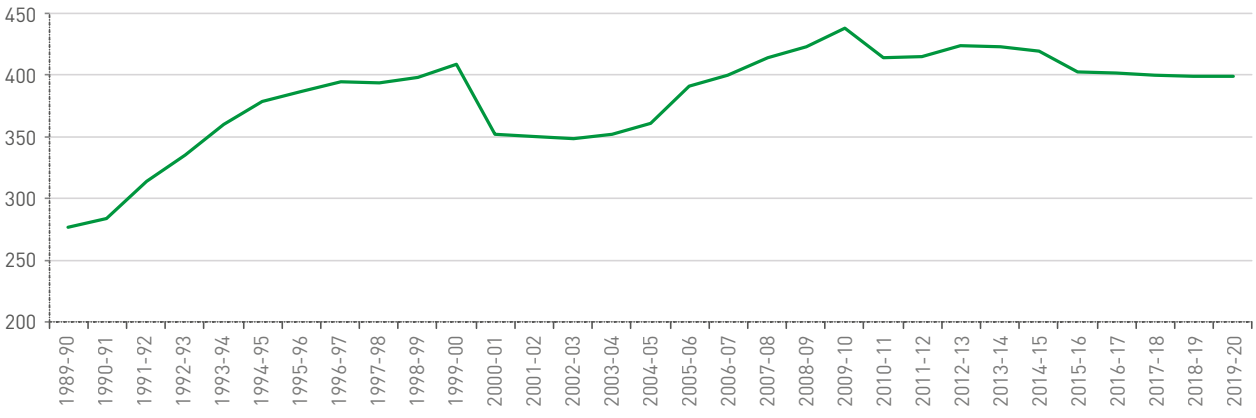
The Government's 2011 white paper *Water for Life* put it succinctly[6]:

For many household customers, the most critical issue is the affordability of their bills. While water and sewerage services are relatively cheap and good value, costing on average £1 per day, some households struggle to pay their water bill, either because they are on a low income or because they live in an area where bills are higher than average. (DEFRA, 2011, p. 61)

Severn Trent's average combined bills are the lowest in the UK. Even when we take this into account, the Ofwat analysis still suggests that 1 in 5 (600,000) of the households that we serve pay more that 3% of their weekly income on water bills. Around 1 in 10 (300,000) households were estimated to pay more than 5%.[7]

[7]Ofwat, Affordability and debt 2009-10 – current evidence, 2011

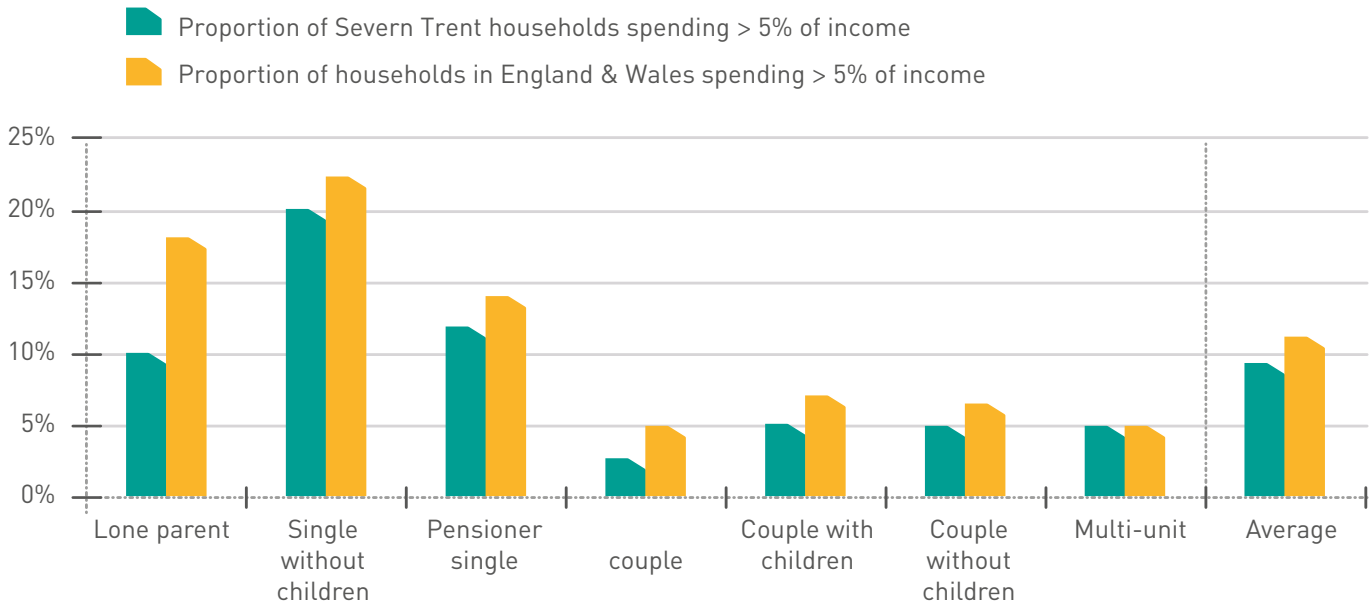
Figure 13: Water and sewerage company (WASC) household bill since privatisation (14/15) prices



SOURCE – WASC (unweighted) average bills, 2014-15 prices

Figure 14 provides comparisons by household type. This shows broadly that lone parents, working-age adults living alone, and single pensioners face the greatest proportion of affordability risks of all household types. Trends in the Severn Trent region follow the national trend, with some cushioning provided by the below average bills in our region.

Figure 14: Affordability by household type



Source: Ofwat analysis of Family Resources Survey 2008/09

The analysis presented above sets the context for the affordability challenge that the industry faces.

As a result of these pressures, there is no doubt that the industry's understanding of the affordability picture and the responses to it have improved markedly in the past decade or so. Most companies now offer social tariffs for customers who are struggling to pay their water bills. In a number of cases social tariffs are also complemented by advice on household water use and benefit eligibility. A majority of companies have also reported that affordability was the principal criteria guiding the setting of charges in 2015-16.

The outcomes of PR14 recognised the on-going pressures on affordability. The recently published government guidance on charging rules places fairness and affordability as one of four policy objectives for water charges. This reinforces an ongoing need to make sure that bills are affordable for all customers.

But the question is how do we do this? How can the water industry rise to meet the challenges of delivering affordable water bills while meeting policymakers' expectations and rising customer aspirations on service quality?

Policy responses and delivery options

We believe the policy responses can be developed at three levels:

1. First, keep the **average level of bills at an affordable level.**
2. Secondly, **recognise and enhance the benefits of existing water charging structures.**
3. Thirdly, promote and develop companies' roles in using **charging policies to deliver socially desirable outcomes.**

Keep the average level of bills at an affordable level

The average level of water bills in the years since privatisation has been intrinsically linked to the process whereby Ofwat sets price limits. These limits have been set under the regulatory process to allow water companies to meet their legal obligations (which have increased) and to recover efficient levels of costs.

The most direct way to keep all bills to affordable levels is to manage the costs of delivering water services.

There are three ways that these costs can be managed, and these should ideally work in tandem:

- First, new expenditure requirements – for example in areas such as resilience and environmental improvement – should be promoted in ways that are more flexible and recognise affordability objectives.
- Secondly, innovation in delivery solutions, ways of working and new technologies can reduce the costs of delivering services.
- Thirdly, financial risks need to be kept to a minimum. Developments such as Ofwat's new totex framework are helpful in this regard.

A significant proportion of customers' bills over the 2015-20 period – around 20% or about £80 average per customer per year – will be associated with financing new and past investment.

The industry and its customers have benefited historically from a low cost of capital (relative to other sectors in the economy). This means that customers have to pay less than would otherwise have been the case to finance investment in the sector.

This relatively low cost of capital for the water sector reflects a continuing perception by investors and the capital markets that water is a relatively low risk sector. A stable regulatory regime as well as predictable levels of market demand for their services allows water companies to attract finance at low cost. This translates to more affordable bills for customers.

Defra's work on water bills shows three potential outcomes arising, with choices on environmental spend being the biggest driver for future increase in bills. **Figure 15** shows the three projections.

There are nevertheless pressures on the horizon that could increase the perceived riskiness of the water sector to investors beyond these simulations and in turn could run counter to the objective of affordable bills.

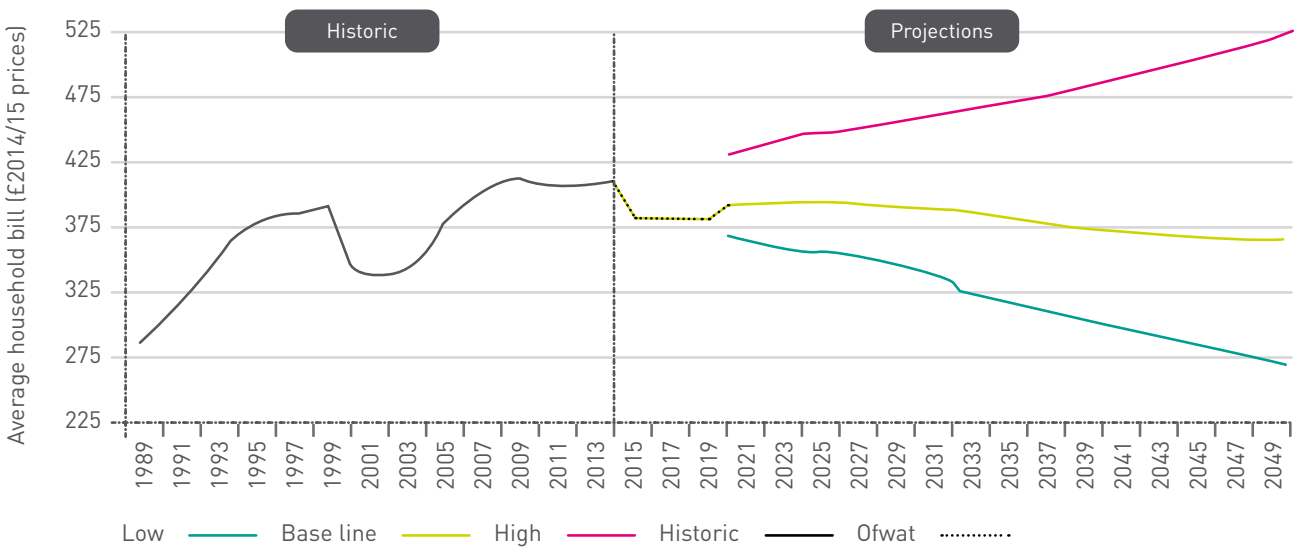
The opening of the retail market is intended to put water company retail revenues and margins under pressure like never before and this enhances the levels of financial risk under which the existing water companies will operate.

Similarly, Ofwat has intentionally allowed in its PR14 determinations a greater exposure of water company earnings to customer service performance through its system of ODIs.

While these are welcome market and regulatory developments they do come with the potential downside of higher financial risks and ultimately upward pressure on bills. These higher risks, we believe could be mitigated by making commitments to retain key elements of the present regulatory regime that would be a credible signal to investors that the water sector will remain stable and low risk.

For example, not unbundling company regulatory capital values (RCVs) – as recommended by Oxera[8] – and continuing inflation indexation for RCVs and prices – would allow confidence in the sector to be maintained for the benefit of customers. Similarly de-risking cost exposures which companies have limited ability to control, such as business rates, lowers the risk profile of the sector. Adverse changes in these areas could unnecessarily increase financing costs, reduce bill stability and lead to undesirable bill increases (thereby impacting on affordability).

Figure 15: Real average household bills in England & Wales, historic and projected, 2014/15 prices



SOURCE – DEFRA, Cumulative impact of regulation & policy on future water bills, 2015

[8]Oxera, Options for future treatment of the regulatory capital value, prepared for Severn Trent, 2015

Recognise and enhance the benefits of existing water charging structures

Water charging structures and policies have a crucial influence on the way in which the costs of providing services are spread across all categories of customer. As emphasised by recent industry guidance a pre-requisite for deciding on appropriate charging structures is clear criteria.[9]

Recent government guidance also emphasises the importance of clear criteria; namely fairness and affordability, environmental protection, stability and predictability, and transparency and customer-focused service.

Affordability as emphasised above is key, but no less so – we suggest – than fairness, stability and predictability. All of these considerations contribute to legitimacy from the customer perspective. During PR14 our customer research strongly endorsed a preference for stable and predictable bills.

Fairness also requires careful consideration in the context of water charging. Restructuring of charges has often in the past been motivated by a desire to more closely align charges for a category of customer or service to the costs of serving that category of customer or service.

The ability to identify the underlying costs of service to different categories of customer or service is constrained in the water industry by important characteristics of these network services. This is because we are often serving different markets or categories of customer through the same assets and processes; as a result, significant common costs are not easily divided across customers or services. Unlike other sectors and industries, it is therefore less clear when charges achieve a fair reflection of the costs to serve.

Even when circumstances allow a clearer understanding of the costs to serve (for example of serving urban areas versus rural areas) consideration of the social good embodied in water services should preclude any narrow cost-based interpretation of fairness. As in other network industries, recognising entitlements such as universal access to these services helps makes sense of a starting position for the water industry of the many cross-subsidies that are justified in terms of their wider social benefit. These cross-subsidies can readily be understood as fair and appropriate for a customer-focused business tasked with delivering an essential public good.

The best example of this would be regionally averaged charges. Another example would be using water customer charges as the vehicle for recovering the costs of providing drainage of the public highways, irrespective of highway usage. To quote government guidance to Ofwat:

In many cases unwinding these cross subsidies will be of little practical benefit and may lead to bill instability; creating winners and losers without delivering any measurable policy benefit. (DEFRA, 2015, p. 12)[10]

Defra's statement above introduces the key litmus test of measurable policy benefit to be applied when considering changes to existing water charging structures. Changes that promote the delivery of socially desirable outcomes (for example affordability as discussed below) should be encouraged within frameworks of clear objectives and success criteria.

[9] UKWIR, wholesale and household retail charging principles, volume 2
[10] DEFRA, Consultation on Charging Guidance to Ofwat, 2015

Further development of tariff policies should be evolutionary and incremental, in line with the wider set of policy objectives. For example environmental protection should go hand in hand with progressively developing tariff policies that provide appropriate price signals about scarcity and value. The objective of delivering stable and predictable bills will in turn act as important constraints on the pace and scope of any tariff changes.

The focus for water charging will continue to be on the outcomes for charges and bills. As market reform develops, however, the interplay between end user charges and access pricing is likely to come more to the fore. Severn Trent has recently examined the practical implications of different access pricing approaches in work commissioned from Oxera.[11] An important conclusion from this work is that stability of (regionally averaged) end user charges can be reconciled with de-averaged access prices through the choice of access pricing methodology.

Water companies are best placed to make these decisions, but we suggest they do so within clear decision-making frameworks such as that proposed in UKWIR (2015). This industry framework puts centre stage the importance of customer views, the need for robust data and clear criteria, and the requirement for board level assurance. It provides a decision-making process that can be used to underpin the implementation of the *measurable policy benefit test*.[12]

Promote and develop the roles companies play in using charging policies to deliver socially desirable outcomes

In the same way that water companies have and will continue to deliver significant social benefits through their operations and investment planning, water charging policies readily provide the means to deliver socially desirable outcomes on affordability. Two developments worthy of promotion and further development would be social tariffs and concessionary charging schemes.

Social tariffs

At the 2014 review, most water companies introduced social tariffs which involve an explicit cross-subsidy to those who struggle to pay. There was broad support for these measures among our customers, with 74% willing to see an increase of up to £3 in order to help those most in need.

At present legislation permits companies to determine their own approach to social tariff design within certain parameters such as evidence of customer support.

This means that there are slightly different schemes in operation across the industry. In some cases eligible households are offered a flat percentage discount on their bills, while in others the percentage discounts vary according to household circumstances. For example, discounts across all schemes can vary from a 10% to a 90% reduction in bills.

Differences are also evident in how eligibility itself is determined. In some schemes eligibility is limited to households in receipt of means tested benefits, while in others companies undertake direct assessments of a household's income to determine eligibility. The latter approach can be more administratively costly, but the benefit can be that it has wider customer support.

The uptake of social tariffs has been slow, and more ultimately may need to be done to help promote their uptake, for example, through working constructively with other agencies.

[11] Oxera, Options for access pricing methodology, prepared for Severn Trent, 2015

[12] UKWIR, Wholesale and household retail charging principles, volume 2

Severn Trent has a number of schemes to help customers

Customers who approach Severn Trent for help with their bills undertake a 'health check' to assess their circumstances to determine their eligibility for a scheme.

Severn Trent Trust Fund provides financial help to Severn Trent's customers who are unable to pay their water bills – holistically seeking to help customers out of poverty and debt. Customers can apply for help with both water and other debts. Around two-thirds of customers who receive a grant from this fund go on to become future bill payers.

To date, Severn Trent has donated more than £56 million, benefiting over 300,000 customers.

WaterSure is available for customers who need to use a lot of water, who are on a water meter, receive benefits and also fulfil additional criteria.

Severn Trent has recently extended the scheme to broaden eligibility of the customer base – aiming to help 11,500 customers between 2015-20

SOAC (Single Occupier Assessed Charge) is available for customers who live alone, would like a water meter but are unable to have one fitted at their property.

Where customers are not eligible for assistance through the fund or a scheme, customers may be eligible for the social tariff.

The Big Difference Scheme was launched in April 2015 and aims to assist 35,000 customers by 2020. The social tariff offers between a 10% and a 90% reduction in the average bill of £329.

Eligible customers will need to have exhausted all existing Severn Trent schemes or found that other schemes have not made their water charges affordable (e.g. having a meter fitted).

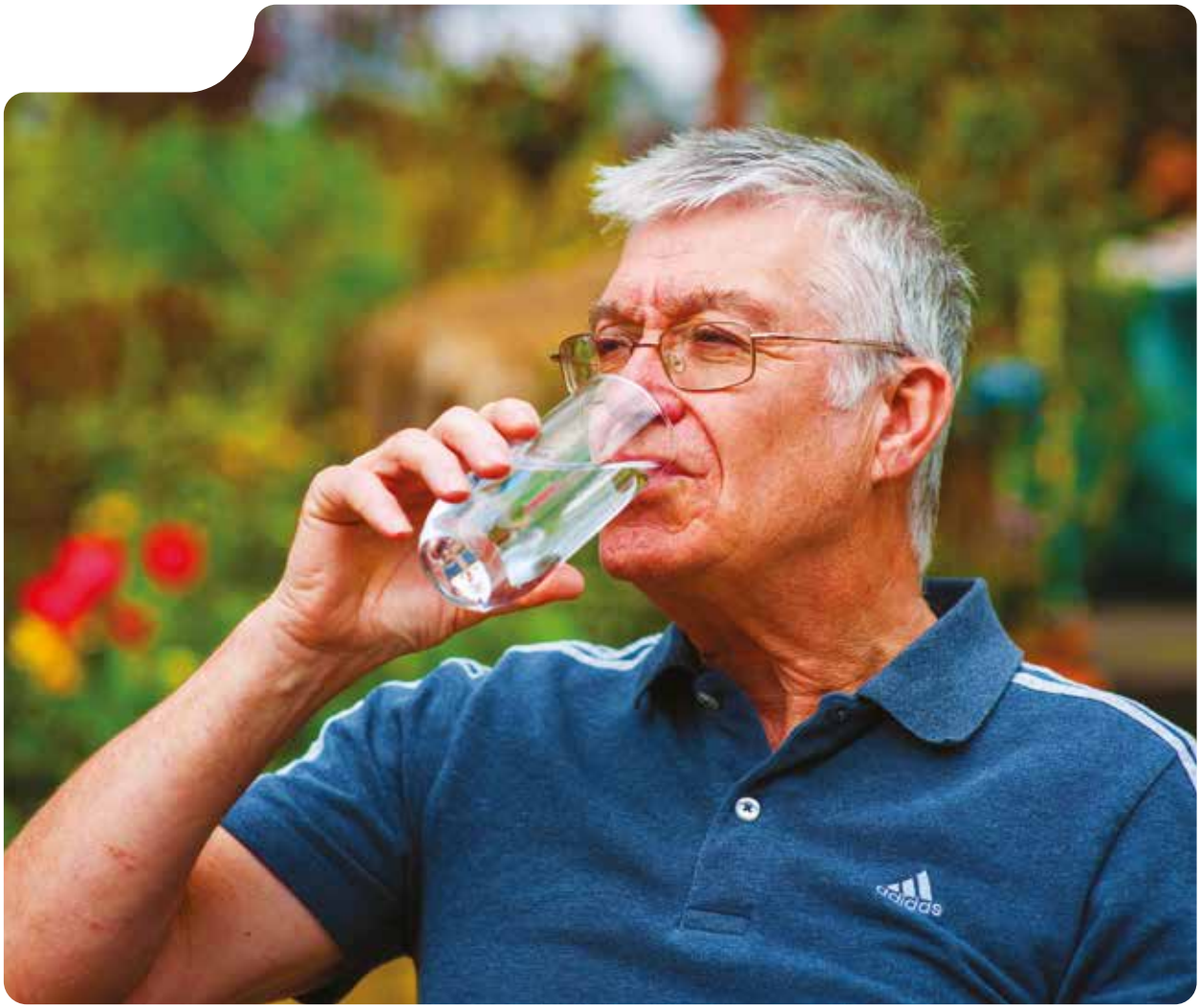
The scheme is being administered by Coventry Citizens Advice Bureau (CAB) who assess a customer's full situation. The level of bill reduction the customer receives is determined according to the amount of disposable income the customer has after essential expenditure. There are no other specific criteria – a customer's employment status is irrelevant, for example.

The design of any social tariff scheme requires decisions about two key elements:

- How is eligibility determined, verified and implemented?
- What level of financial assistance to eligible households is appropriate?

Figure 16 : Approach to guiding the development of social tariffs

1. For a social tariff to be legitimate it must command support and legitimacy from the customer base at large.
2. Any reduction in a customer's bill should be a meaningful one. The level of subsidy becomes meaningful when it drives changes in behaviour e.g. there are significant increases in the number of households paying their bills. Proportionate relates to issues around the ease of implementation, number of customers assisted and the total scale of income rebalancing that is required. The cost of administering a tariff should be considered alongside the benefits it delivers and the number of customers it supports. Currently around 98% of Severn Trent customers pay their water bills. This suggests a high degree of affordability (and commitment to pay bills even when overall household budgets are stretched). Over time income and household expenditure will change but those failing to pay provides a yardstick by which the number of people being assisted can be judged without acting as an absolute cap.
3. A social tariff should support the poorest households, which may not exclusively be those in receipt of benefits. A system that uses benefits receipt as the qualifying criteria may warrant consideration as it could be cheaper to administer. However industry evidence also shows that large numbers of equally deserving households may not receive help under a benefits passport approach. We have benefited greatly through our experience of partnership working with agencies such as CAB, as they are able to provide a deeper understanding of individual needs and circumstances.
4. An effective social tariff should not only support the achievement of affordable water for all, but should also avoid introducing any unintended secondary incentives. For example, a 100% subsidy would not encourage customers to use water wisely and could increase overall water use and therefore costs to bill payers.
5. Non-payment of water bills is estimated to add up to £15 a year to the bills of the vast majority of customers who do pay. A meaningful, targeted subsidy should help to make bills affordable and should reinforce the habit of payment. In the long term we should see improvements in levels of bad debt, all other factors being equal. If this materialises there is a net benefit to be shared by all customers. Water companies should retain the right to withdraw a social tariff if a customer's circumstances change or where customers are able but chose not to pay a subsidised bill.



Concessionary charging schemes

Having affordable bills and charges is not solely an issue for vulnerable customers and households with lower incomes. It is also socially desirable to monitor water services and to make sure that they are affordable for organisations that themselves deliver important social benefits. This provides the rationale for permitting targeted subsidies through concessionary schemes.

We are pleased to see this important objective reflected in the Government's recent guidance to Ofwat on charging rules. For example in the area of surface water drainage charging the Government has stated:

Ofwat is expected to encourage companies to use their discretion in applying area-based surface water drainage charges and to pay particular attention to the potential implications for organisations that provide a wider benefit to society" (DEFRA, 2015, p. 21)[13]

These principles and guidance from Government are to be welcomed. Severn Trent is one of four water and sewerage companies (WASCs) that have introduced surface water drainage charges based on site area. From its introduction a number of community organisations were permitted concessions from full site area charges (e.g. places of worship, community centres, and community groups).

Site based charging offers better incentives for the management of drainage (itself a socially desirable objective), but concessionary arrangements could include transitional arrangements to allow the management of bill impacts over a period of time.

The introduction of site area charging for 4 of the 10 WASCs non-household customers has proved challenging. As the industry moves towards retail market opening, transparency and comparability of charges will become increasingly important to non-household customers and whether they are charged for surface water drainage through their sewerage bill or via a separately disclosed charge is worthy of further debate.

Customer support and the sensible management of negative bill impacts through transitional arrangements ought to be the guiding principles for extending site area charging.

[13] DEFRA, Consultation on Charging Guidance to Ofwat, 2015

PART C

How do we create a more resilient sector for water resources?

Delivering a more resilient service for water resources – key points

Policy response	Delivery options
Protect critical national infrastructure (CNI)	• Establish clear requirements for CNI
Establish the level of resilience of the water sector, with the level of improvement determined by local choice	• Agree common measures of resilience • Allow local customer choice to determine local resilience standards
Secure long-term supply capacity by recognising the pivotal role of water companies	• Retain accountability for supply/demand planning with water companies with more cross border trading
Prioritise demand management in a water constrained world	• Make water efficiency and storm water retention planning conditions for new homes • Unlock potential innovation by aligning retailer and wholesaler incentives.

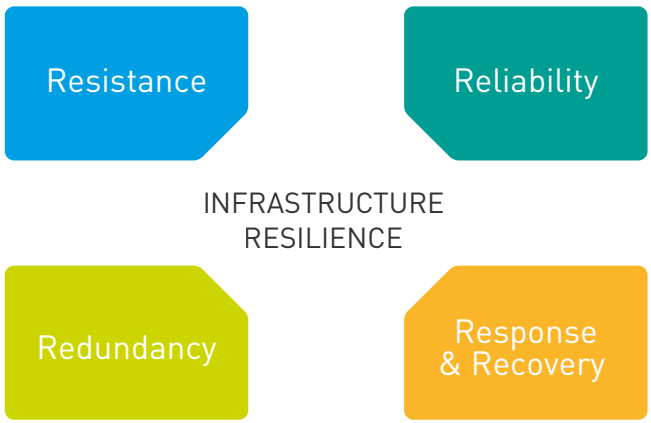
Introduction

Resilience is a key issue for our customers and our customer research tells us that ensuring a reliable, safe water supply is the top priority for our customers. This is not surprising given that resilience is essential to ensuring that customers enjoy reliable and sustainable water and sewerage services.

A number of definitions of resilience are used in the water sector, including the one proposed by the Resilience Task and Finish group.

The Cabinet Office guide *Keeping the country running* sets out four components of infrastructure resilience that should be considered when developing a resilience strategy. The guidance make is clear that there is no single right answer to building resilience and approaches taken will vary according to the situation. Although focussed on infrastructure resilience, the guide encourages a broad range of solutions to be considered.

The definitions show that resilience is a wide-ranging and complex area, with the challenges varying geographically and temporally; there is no single 'silver bullet'.
At every step of the water cycle there are hazards, both natural and otherwise, that can pose a threat to water and sewerage services. Some of these hazards will develop over the long term, through climate change for example. This means we must plan to build resilience over both short and long timescales. We know that as both the risks and customers' expectations grow, resilience will continue to be a key issue in the water sector.

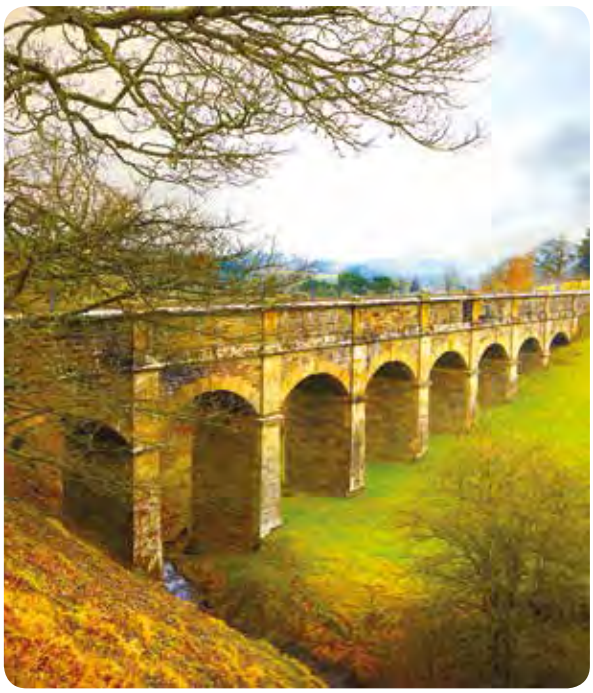


In the remainder of this section, we consider the challenges we face in building resilient water resources, and suggest how these may be overcome. Our response to Ofwat's consultation on resilience looks at how regulation of the sector could change in the light of Ofwat's new primary duty to 'further the resilience objective. It reflects the key points made in this section, in particular the need to establish clearer measures of the sector's resilience and the need to reflect customer views in company plans.

Policy response and delivery options

We believe there are four key areas for policy responses.

1. First, **protect critical national infrastructure** (CNI) by establishing clear requirements
2. Second, **establish the baseline level of resilience** in the water sector by agreeing a common framework of measures of resilience, with the level of future improvement determined by customers.
3. Thirdly, **secure long-term supply capacity** by recognising the pivotal role of water companies, letting them retain accountability for supply/demand planning.
4. Fourthly, **prioritise demand management** in a water constrained world by making water efficiency a planning condition and unlock innovation by aligning retailer and wholesaler incentives.



Protect critical national infrastructure

The Government's independent review of the response to the summer floods of 2007 was conducted by Sir Michael Pitt. The review put forward 92 recommendations covering flood warnings, prevention, emergency management, resilience and recovery. Many of the recommendations were far-reaching and called for a radical reshaping of our flood risk management practice.

The review called for a more coordinated and systematic approach to be taken towards building infrastructure resilience to natural hazards.

It also called for clear and unambiguous standards for resilience to be set by government to reduce the vulnerability of essential services. The review considered that for the purposes of building resilience in critical infrastructure, a minimum standard of 1 in 200 annual probability would be a proportionate starting point for flood hazards.

What is Critical National Infrastructure?

National infrastructure is categorised according to its value or 'criticality' and the impact of its loss. This categorisation is done using the government criticality scale, which assigns categories for different degrees of severity of impact.

Within the sectors there are certain critical elements of infrastructure, the loss or compromise of which would have a major detrimental impact on the availability or integrity of essential services, leading to severe economic or social consequences or to loss of life. These critical assets make up the nation's critical national infrastructure (CNI).

This standard was never formally adopted although many companies, including ourselves, use it within design standards for water treatment works. We think that for critical national infrastructure, across all sectors, adopting this common standard would help build resilience. Interdependency between sectors is a key resilience issue and adopting a common flood standard would be a sensible step. This would reduce the risk of cascade failures in which a service failure in one sector causes subsequent failures in others.

Adopting a common standard for flood resilience for critical national infrastructure would help build resilience for the most significant assets (by population served). This type of resilience is focussed, by its very nature, on large assets of national importance.

Establish the level of resilience in the water sector

Each individual water company has a good understanding of its own level of resilience. By analysing each company's performance, priorities and plans, an overall picture of the sector's resilience could be established.

While individual elements may be reviewed on a regular basis (companies report to Defra on climate risks and adaptation action every five years, for example) an overall industry-wide picture is not constructed on a routine basis at present.

Given the prominence of resilience with customers and stakeholders, along with Ofwat's ongoing focus on the topic, we think a clearer view of the overall resilience of the water sector in the UK is essential.

Currently there are no common sets of metrics to measure resilience to give a consistent industry-wide view. This issue was compounded at the last price review as more freedom was given to the companies regarding the metrics they use to track their ODIs. This produced a large and diverse set of more than 500 measures. The table below illustrates a sample of the resilience ODIs from across the sector. They take many different forms, with some focusing on flood hazards alone. The bottom four entries in the table, which includes our resilience ODI, are broadly comparable. Many companies did not have a specific resilience ODI at PR14. While ODIs are a very positive step forward because they allow companies to track the issues that are important for them, they do not allow straightforward industry comparisons to be made nor do they help customers understand, monitor or track the resilience of the water service.

Table 1 : The range of resilience ODIs included in companies PR14 plans

Resilience ODI	Company
The number of company sites at risk of flooding as defined in the business plan	South East Water
The number of incidents where drinking water supplies are interrupted (greater than 24 hours) due to flooded South West sites over the five-year period of the AMP	South West Water
Ml/d of sites made resilient to future extreme rainfall events	Thames Water
Population equivalent of sites made resilient to future extreme rainfall events	Thames Water
Contributing area disconnected from combined sewers by retrofitting sustainable drainage	Thames Water
Completion of schemes to reduce the amount of surface water entering the company's systems	Welsh Water
Resilience of impounding reservoirs	United Utilities
Percentage of critical assets that are resilient against a set of criteria	Welsh Water
Properties supplied by a single source	Wessex Water
Percentage of properties connected to more than one treatment works	Sutton and East Surrey Water
Populations in centres of greater than 25,000 who are at risk of failure of the single supply source serving them	Bristol Water
Security of supply index (SOSI)	Various
Percentage of population supplied by a single supply system	Anglian Water
Percentage of customers with a resilient supply (those who benefit from a second source)	Severn Trent Water

SOURCE – Ofwat, PR14 Final Determination

In order to target where investment, policy change or future market reform are required, it is first necessary to understand the scale of the current and forecast resilience deficit. Without this understanding, there is a risk that ineffective action could take place and/or resources could be misallocated, leading to service standards being threatened.

The need for consistency in this area was highlighted in the *Committee on Climate Change's 2015 Progress Report*: "The Cabinet Office should work with all infrastructure sectors as part of the next round of sector resilience plans in 2015 to develop consistent incident reporting, together with indicators of network resilience and performance, to allow improvements to be measured over time. The results should be presented by operators as part of their reports under the third round of the ARP. Reporting as part of the third round of the ARP should be made mandatory."

A consistent picture of resilience cannot be produced by one company alone. We think it is appropriate for government or Ofwat to take a lead in this area in collaboration with other bodies. The existing ODIs could be used as a starting point to develop a small basket of measures that reflect key aspects of water and wastewater service provision, with the additional of further forward-looking and capability building measures. With the introduction of Ofwat's new resilience duty, the time is right to address this clear need in the sector and we would like to play our part in making it happen.

However, many of our customers are served by assets that are not defined as critical national infrastructure. There is a wider conversation to be had with customers regarding acceptable resilience standards. For this reason we believe that local resilience standards should be determined by local customer choice.

Variability between resilience standards

The standards for resilience in relation to protection from natural hazards can vary significantly. For example, the standard for water use restrictions that are driven by drought, such as the frequency of hosepipe bans, is entirely at the discretion of water companies. The frequency of temporary water use restrictions adopted by companies as their service standard tends to be far lower than the 1 in 200 proposed by Pitt for flood resilience. Our own company standard for hosepipe bans is 1 in 33 years. Whilst it may be logical to have variable standards, the variability is not planned and is more likely to be accidental.

Promoting local choice

A clearer picture of the sector's resilience will provide useful context for discussions with our customers on their expectations for water and sewerage services. It is clear that there is a wider conversation to be had regarding acceptable resilience standards. We know that the levels of resilience vary across our region based on a number of factors, including the differences between rural and urban water supply networks or whether the infrastructure is classed as Critical National Infrastructure (discussed above). For this reason we believe that local resilience standards should be determined by local customer choice.

Secure long-term supply capacity by recognising the pivotal role of water companies

The most important strategic water management task is to form a long-term view of the supply/demand balance and to plan accordingly so that customers are kept on supply within acceptable levels of risk. This area is different from most other areas of company activity because of the long lead times involved in developing new resources or implementing demand side measures. A new reservoir, for example, can take decades to plan and build.

While in many countries the long-term view of the supply/demand balance is managed centrally either by regional or national governments, in the UK this role falls to water companies.

In England, water companies have to produce statutory Water Resource Management Plans, (WRMP) following guidelines set by the Environment Agency. These plans contain a 25-year prediction of supply and demand, incorporating major drivers such as population growth and climate change. The plans must also set out how any deficits will be met. Similar arrangements exist in Wales and Scotland between the water companies and their environmental regulators. This governance ensures that water companies produce high-quality plans and maintain a sensible balance of risks into the future. This is a well established, well understood and well run process.

Further upstream competition is likely to be developed in England and this will have significant implications for long-term water management. Reforms have to be designed and implemented in a sensible way so that there is sufficient focus on the impacts of climate change, population growth and the environment. A critical part of any new structure is to maintain sufficient visibility of the long-term supply/demand balance. Without coordinated planning and robust information, produced in a complete and consistent way, there is a risk that the overall resilience of the water sector could be eroded. It is vitally important that the benefits of the existing WRMP process are retained and the introduction of retail competition for non household customers from 2017 means that it will be important for the companies' wholesale water functions to maintain visibility of the supply-demand drivers so they can form a long term view. Alternative models have proposed the creation of an overarching system operator, which we discuss further in Section F below.

Prioritise demand management in a water constrained world

To date the focus of reform of the sector has mainly been on the supply side. In a water-constrained future world more attention will need to be given to managing water demand. More effective demand-side measures will allow greater resilience to be delivered from existing resources and networks.

There has been innovation in demand-side measures in both the water sector elsewhere in the world and within other sectors, particularly energy. We think there is scope to test some of these ideas in the water sector.

California mega-drought: driving innovation and changes in attitude

The past four years have been the driest period in the state of California since records began. A variety of water efficiency measures are being implemented in response. These include a change in attitude towards garden lawns, with many lawns being taken up and replaced with drought resistant plants. This has been coupled with innovative irrigation systems that 'communicate' with the weather forecast so that they are only operational on days when watering is required.

Some of these points were raised by the Green Alliance in its recent report *Cutting the cost of water*. This suggested that it would be more effective to use demand-side measures to tackle future water scarcity than to develop new resources and that future bills could fall as a result of accelerated water efficiency programmes.

With retail separation for non-household customers beginning in 2017 we would like to encourage further debate on how incentives can be aligned so that retailers and wholesalers both have adequate incentives to deliver demand-side measures. Retail separation provides an important opportunity for retail companies to understand the needs of their customers and they should be able to use water efficiency as a potential differentiator from competitors.

Smart grids: innovation from the energy sector

Smart grids link those who are connected to the electricity network – encompassing generators, consumers and those who are acting as both generators and consumers – in order to ensure that the power system has low losses and offers a secure supply.

There have been more than 450 smart grid projects in Europe, involving more than £3 billion of investment since 2002. These include innovative storage devices, electric vehicles, smart control of devices and distributed renewable generation.[14]

[14] European Commission, Smart Grid Project Outlook, 2014

PART D

How do we tackle flooding and drainage?

Tackling flooding and drainage – key points

Policy response	Delivery options
Implement the legislative and regulatory changes required to unlock the full potential of innovative approaches	• Removing the automatic right for new developments to connect to the public sewer system or • Ensure charges for new development reflect the full cost that new developments impose on the sewerage system • Make water companies statutory consultees on all planning applications that have implications for the public sewer network
Empower water companies to play a greater role in managing, operating and funding flood defences	• Consider privatising flood defence assets while maintaining the strategic role of the Environment Agency
Explore opportunities to make better use of surface water	• Realise opportunities for surface water as a major water supply source.

Introduction

Since the flooding of the Mythe Water Treatment Works in Gloucester in 2007, we have made substantial progress in increasing the resilience of our assets, particularly water treatment works. Progress has also been made to secure more sustainable wastewater services, including further adoption of sustainable drainage systems (SuDS), targets for reducing the amount of surface water entering sewerage systems and separation of foul and surface water systems. However, as evidenced by the continuing and frequent news coverage of significant flooding events in the UK, there is still much to do. The issues relate to both scale and complexity.

The scale of the problem is widespread: around one in six properties in England is at risk of flooding, with over 2.4 million properties at risk from flooding from rivers or the sea with an additional 2.8 million properties susceptible to surface water flooding.[15]

The challenges are complex: the interaction between surface, river and groundwater flooding coupled with a complex number of stakeholders with different responsibilities means that it is more difficult to provide a united response to the challenges of rising sea levels and changes in rainfall as a result of climate change, ageing drainage and flood infrastructure, more buildings in flood-prone areas and increased run-off due to more paving. The multitude of stakeholders is also potentially confusing for customers – it is difficult to know where the ownership and accountability for long term management of flood and drainage issues lies.

[15] Environment Agency, Flooding in England: A national assessment of Flood Risk, 2009

Policy response and delivery options

As a contribution to the debate, we believe there are three key areas for policy responses.

1. First, implement the legislative changes required to **unlock the full potential of innovative approaches** such as SuDs to reduce pressure on drainage systems.
2. Secondly, **empower water companies to play a greater role** in managing, operating and funding flood defences.
3. Thirdly, explore opportunities to **make better use of surface water** by recognising the significant opportunities available.

Implement the legislative changes required to unlock the full potential of innovative approaches such as SuDs to reduce pressure on drainage systems

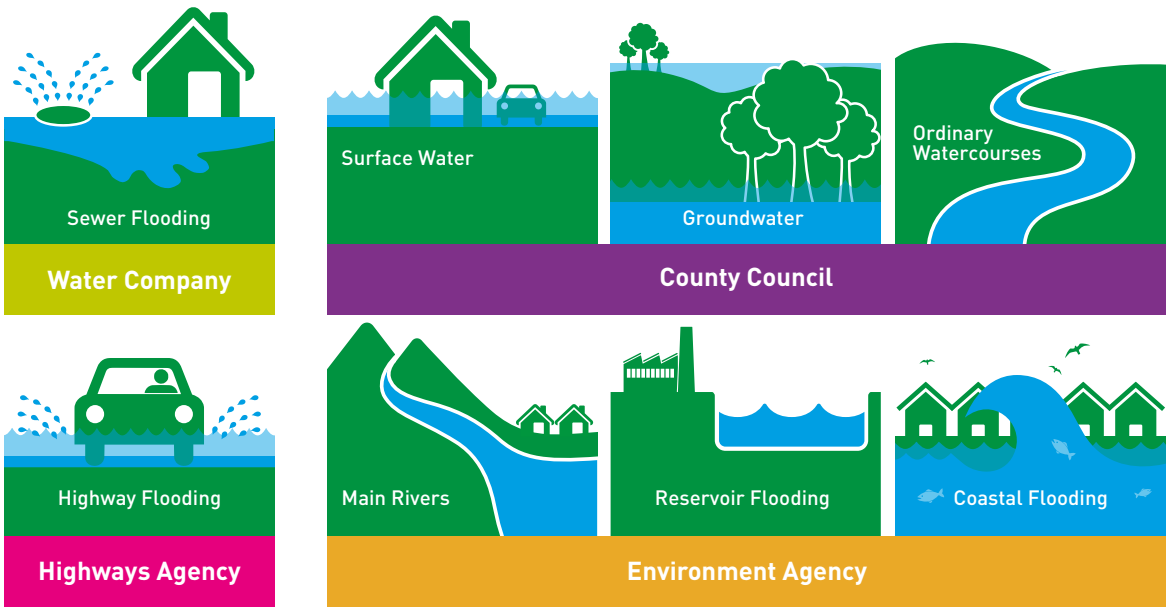
It is unrealistic to think that we can simply increase the capacity of our sewers to cope with the scale of the challenges, and even if that were possible, the cost of doing so would be prohibitive. We think it is appropriate to move the debate onto how we can reduce the pressure on drainage systems by keeping surface water out. In our view, more could be done to incentivise adoption of innovative approaches such as SuDS to reduce pressure on drainage systems. This is consistent with the approach set out in the 2008 Pitt Review and in the Flood and Water Management Act 2010.

We think these changes could be in the form of:

- Removing the automatic right for new developments to connect to the public sewer system, as recommended by the 2008 Pitt Review and Flood and Water Management Act 2010. This could act as a catalyst to increase the uptake of SuDS, as developers would have no alternative other than to include them in all new developments; or
- Ensuring charges for new development reflect the full cost that new developments impose on the sewerage system. This would incentivise developers to implement SuDs where they offer a cheaper solution than the cost of connection (and thus reduce the cost of developments).
- Making water companies statutory consultees on all planning applications that have implications for the public sewer network. It is a positive step forward that lead local flood authorities have recently been made statutory consultees on the surface water impacts of major developments; however, we think this should be extended to water companies. This would not only encourage early engagement on the use of sustainable solutions, but would also aid companies' long term planning for their networks.

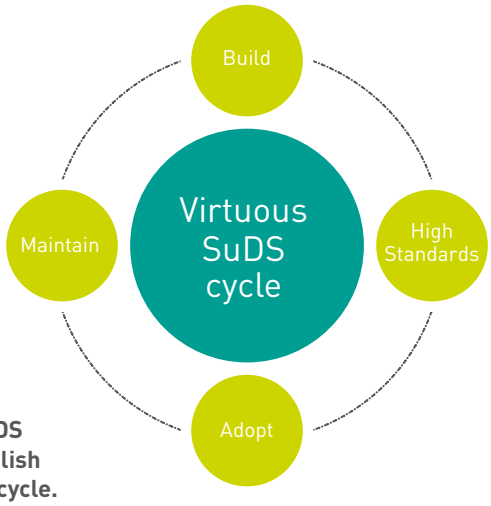
Another issue relates to the legislative framework in operation when water companies adopt SuDs that others have built.

Illustration demonstrating how complex responsibility for flooding is



Water companies may construct, maintain and operate drainage systems that take pressure off the public sewerage system, including sustainable drainage systems. The legal basis is set out in section 114A of the Water Industry Act 1991, as amended by the Water Act 2014.

However, there is still confusion over the legal aspects of water companies adopting SuDs others have built. Further clarity is essential as the current situation acts to discourage companies from adopting third party SUDS. Once adopted, water companies would then be responsible for long-term maintenance with costs included within wholesale wastewater bills.



Removal of the automatic right to connect and clarity over ownership of SUDS would help establish a virtuous SUDS cycle.

The Climate Change Committee 2015 Report to Parliament states that surface water risk is not being adequately addressed. The report's recommendations included the following:

RECOMMENDATION 3: Defra should (a) amend in this Parliament the 1991 Water Industries Act in order to remove or make conditional the current automatic right to connect new development to public sewers and (b) work with local government representatives to improve local flood risk management arrangements. Both elements should be part of an action plan to tackle surface water flood risk, to be published by Defra within a year of this report.

RECOMMENDATION 4: DCLG should by the time of the ASC's next report in 2017 (a) make water companies statutory consultees on all planning applications that have implications for the public sewer network; (b) put in place a process for monitoring and evaluating the effectiveness of planning policy in (i) achieving a high uptake of SuDS in new development and (ii) limiting the paving-over of front gardens with impermeable surfaces.

RECOMMENDATION 5: Ofwat should require each water company to report on the area of land where above-ground SuDS, including permeable paving, has been installed over the current Asset Management Plan (AMP) period to 2020, as part of delivering the industry-wide commitment to reduce sewer flooding incidents by 33%.

RECOMMENDATION 6: DCLG and the Environment Agency should by the time of the ASC's next report in 2017 publish an assessment quantifying the impact of new development on long-term flood risk. The evidence from this assessment should be used to inform subsequent Environment Agency long-term investment scenarios.

Empower water companies to play a greater role in managing, operating and funding flood defences

The Environment Agency is responsible at a national level for strategic oversight, prioritisation and delivery of new flood defence schemes. The Environment Agency's *Long Term Investment Scenarios Study* suggests that the optimum investment in flood defences is around £750m - £800m year. This compares to the £2.3bn 6-year flood defence investment plan announced by the previous Coalition Government in December 2014. There is also a disparity in the way in which investment in this area is assessed. The average benefit to cost ratio for investment in flood and coastal erosion schemes is 8 to 1, which compares to around 1.7 to 1 applied to investment needed meet Water Framework Directive standards.

Environment Agency's long-term investment and scenarios study

The Environment Agency published updated long-term investment scenarios for flood and coastal erosion risk management from 2015 to the 2060s. It estimates that the optimal investment profile in the first 10 years will be around £750 to £800 million a year in present day costs. This is expected to rise from the 2020s to the 2040s to £850 to £900 million a year, although there is scope to influence this by choosing different policies.

Once discounted to present values, the cost of funding all activity to manage flood and coastal erosion risk where benefits are greater than costs would be around £25 billion over the next 100 years. This takes into account the expected rate of deterioration of flood defences. Future damage from major storms may need additional repair funds.

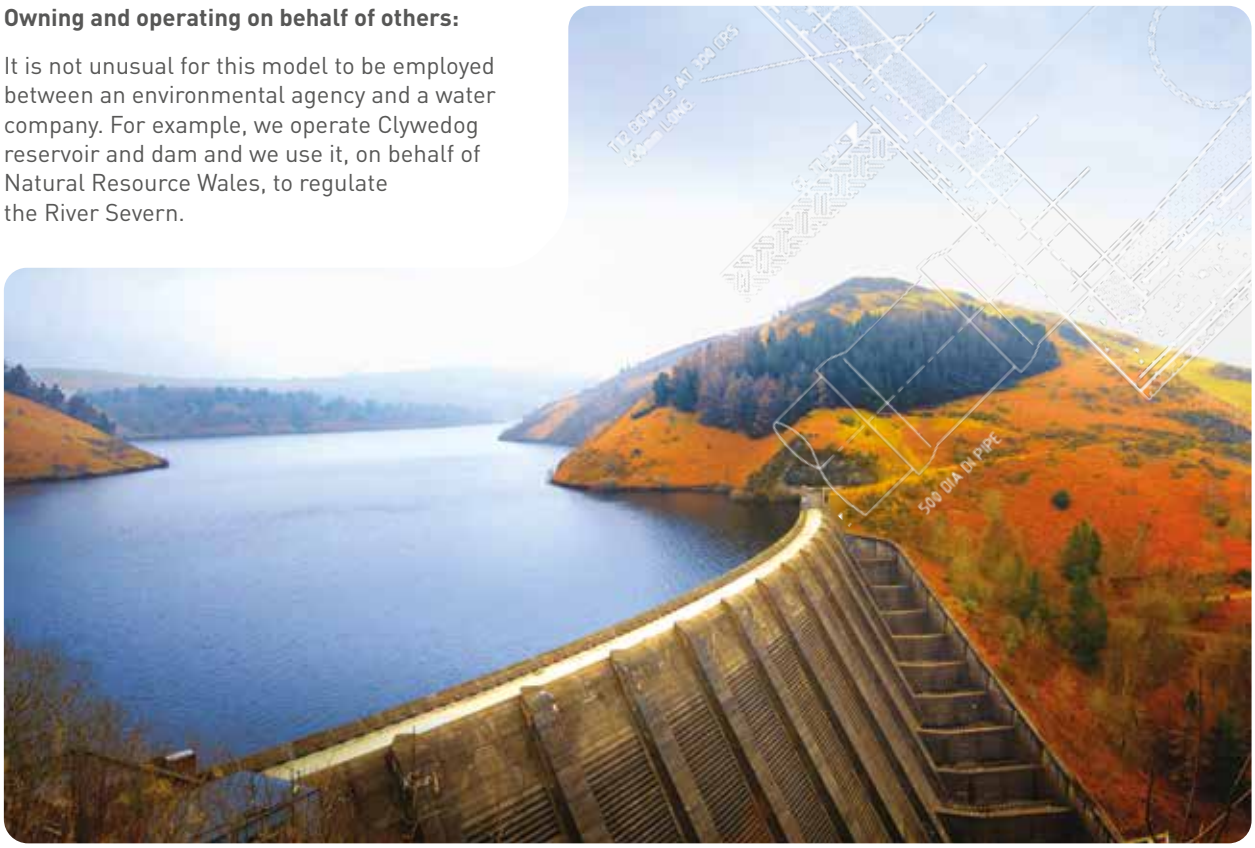
The current and proposed levels of investment closely align with a long-term investment profile that maximises benefits in terms of reducing flood damage. The proposed six-year capital programme represents a larger capital commitment than ever before, and is made over a longer time period (2015 to 2021) than previous settlements.

Water companies also have a role in flood management. Their focus is mainly on protecting their assets from flooding and on managing the impacts of surface water on the combined sewer network. We could consider extending this remit. Allowing water companies to manage, operate and fund flood defences would have the following advantages:

- Access to capital: Water companies are traditionally low risk to investors and enjoy a low cost of debt. This would enable further flood defences to be constructed at an efficient cost.
- Experience in delivery: Water companies have to deliver significant capital programmes within tight time frames and cost constraints. This private sector discipline would help keep project delivery risks low.
- Asset maintenance: Flood defence maintenance has been an area where the Environment Agency has been subject to criticism over a number of years. Water companies have an excellent track record of managing assets and could be well placed to manage another class of assets.

Owning and operating on behalf of others:

It is not unusual for this model to be employed between an environmental agency and a water company. For example, we operate Clywedog reservoir and dam and we use it, on behalf of Natural Resource Wales, to regulate the River Severn.

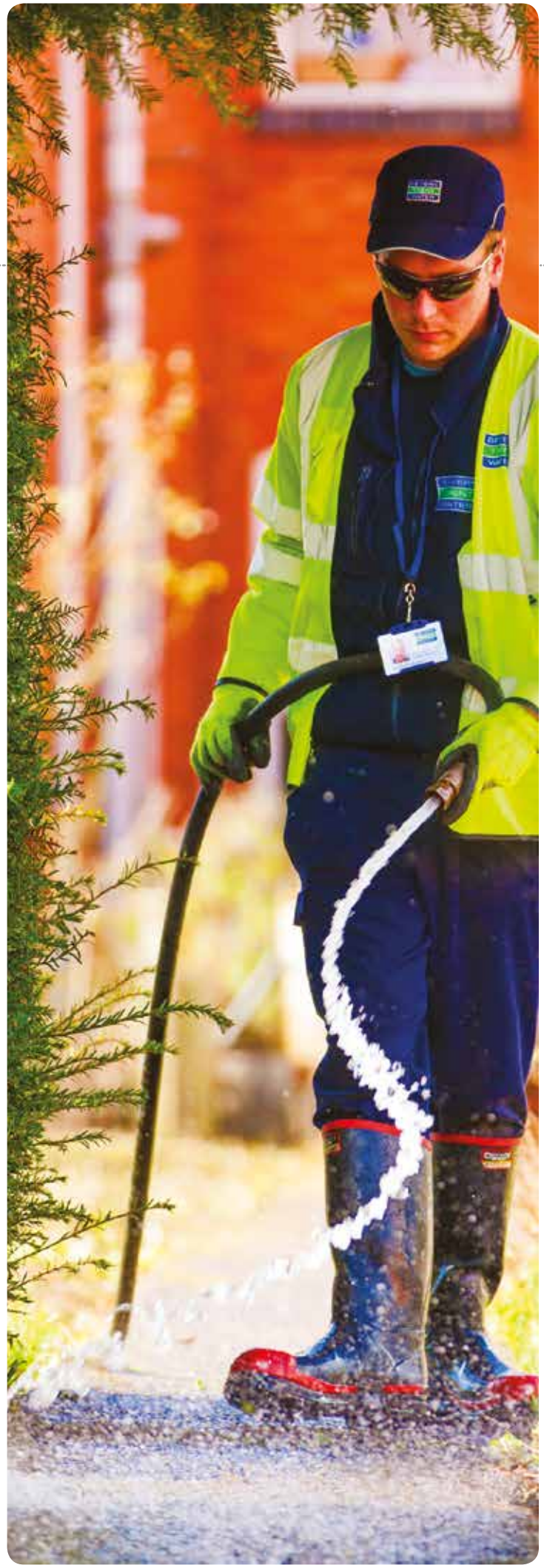


Explore opportunities to make better use of surface water

To meet the growing challenges ahead, particularly relating to drainage, flooding and water resources, we need to think differently and find solutions that are genuinely innovative. As a sector we are only now exploring the benefits of partnership working in dealing with drainage and flooding. In future we need to push these approaches much further and to identify how we can turn problematic water (essentially flooding of all types) into a resource.

It is interesting to note that enough rain falls on Birmingham to supply 180% of its water needs. Although it is unrealistic to think that we can retrofit large cities with the systems necessary to harness rainwater without major disruption and cost, this does highlight the possibilities available for new towns and cities. There is therefore an opportunity to reconsider how we treat surface water and to build infrastructure that treats this as a resource rather than just a problem.[16]

[16]STW analysis



Birmingham Urban Demonstrator Tyseley

We are working in partnership with Birmingham City Council, the Environment Agency, universities and our own supply chain to create a community scale, living laboratory. The purpose is to demonstrate how practical it is to manage water sustainably through water sensitive urban design, and the benefits of doing so in terms of both supply (water demand reduction, recycling and reuse) and sustainable drainage.

We hope that this joint project will provide useful learning about how we can manage water in our cities in ways that are more resilient and less resource intensive. In particular we will be testing new ways to manage the infrastructure and will be exploring new models of service provision.

Activities being delivered within the Tyseley Environmental Enterprise District include:

- retrofitting innovative water harvesting, reuse and efficiency measures in around 100 homes and a school;
- helping local companies to reduce their demand for potable water and to identify local, more sustainable sources such as through rain water harvesting and water reuse;
- creating sustainable drainage features that moderate and treat surface water.

By developing and showcasing new products and services the scheme could help to create new jobs and potentially help the UK export its water services.

PART E

How do we establish a fairer approach to delivering further environmental improvements?

Balancing environmental sustainability – key points

Policy response	Delivery options
Ensure that environmental legislation is implemented in a way that delivers improvements while also keeping water bills affordable	• Reconsider the scale of improvements to be made by 2027 • Use local priorities to determine the rate of progress • Allow overall affordability considerations to determine the pace of change
Ensure that other sectors make a proportionate contribution to environmental improvements	• Re-prioritise existing funding to help farmers make environmental improvements • Promote innovative practices and partnership working, building on the success of catchment management • Introduce stricter licensing of new products that might damage the environment • Introduce clearer labelling so that consumers understand the environmental impacts of their purchase
Progress abstraction reform at the earliest opportunity	• Ensure customer engagement and support for chosen reform option • Implement pilots before wide-scale implementation
Consider pricing for scarcity in the long term	• Commission research on options for scarcity pricing, building on successful international examples.

Introduction

The health of the UK's rivers and of other water courses has improved dramatically in the last 20 years. This improvement has required more than £30 billion of investment (or around £1,300 for every household).[17]

As acknowledged in *Water for Life* (2011),

"because of pollution and over-abstraction only a quarter of our rivers and lakes are fully functioning ecosystems. In the coming years the combined effects of climate change and a growing population are likely to put growing pressure on our rivers, lakes and aquifers. If we do not act, the security of our water supplies could be compromised."

The WFD was adopted into UK law in 2003. It is designed to drive further improvements in order to achieve healthy, fully functioning ecosystems. The objectives of the WFD, to achieve 'good' status for all surface waters by 2027, are not in question; we fully recognise our responsibility for managing our impact on the local environment through our abstraction of water and discharge of wastewater. Abstracting water affects river flows and discharging wastewater can affect river water quality – and both of these impacts can affect ecosystems.

While the WFD's objectives are undoubtedly valid, the question remains as to how far and how fast further environmental improvements should be made if we are to keep water bills affordable for customers.

In November 2013, we published the fourth in our *Changing Course* series. *Changing Course through the sustainable implementation of the Water Framework Directive* set out the challenges associated with implementing this directive. It also suggested solutions to help overcome those challenges, many of which are still relevant today.

[17] Severn Trent Water, Changing Course through sustainable implementation of the Water Framework Directive, 2013

Policy response and delivery options

As a contribution to the debate, we believe there are four key areas for policy responses.

1. First, **ensure environmental legislation is implemented in a way that delivers improvements** while also **keeping water bills affordable** by considering the scale and pace of improvements and taking into account overall affordability considerations.
2. Secondly, **ensure other sectors make a proportionate contribution** to environmental improvements.
3. Thirdly, **progress abstraction reform at the earliest opportunity** ensuring more efficient allocation of scarce water resources.
4. Fourthly, **consider pricing for scarcity in the long term** by ensuring there is a better link between the price water companies pay for water and its actual value.

Ensure that environmental legislation is implemented in a way that delivers improvements while also keeping water bills affordable

The European Union (EU) acknowledges that "the implementation of the 2000 Water Framework Directive relies on Member States taking a range of cost-effective measures in a transparent and participatory way".

Evidence suggests that levels of WFD participation are inconsistent between member states. In *Changing Course through the sustainable implementation of the Water Framework Directive*, we highlighted some interesting data that was provided by 11 of the 27 Member States (others did not provide adequate data to enable comparisons to be made). This showed that even those countries with over 90% good status for chemical status failed to meet good ecological status for more than one-third of their surface water.

More recent data from the European Environment Agency shows that good ecological status has only been achieved by 53% of surface water bodies [**see Figure 17**] and that there are wide variations between river basins.

In March 2015, the EU published an updated evaluation of progress so far, acknowledging that the WFD had reached a crucial point in its implementation. This latest report suggests that patchy progress is being made throughout the EU in implementing the WFD, with many countries focussing on existing measures rather than considering what it will take to achieve good status.

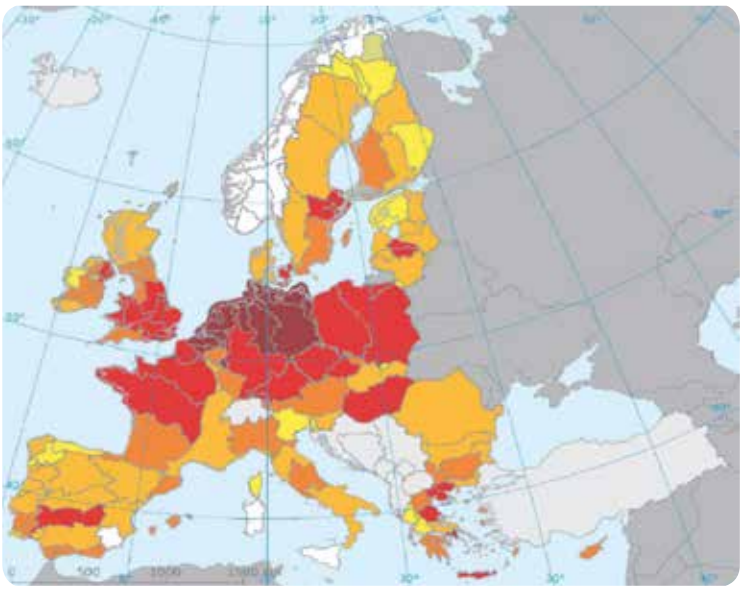


Figure 17

Proportion of classified river and lake water bodies in different River Basin Districts (RBD) holding less than good ecological status or potential

- < 10%
- 10 - 30%
- 30 - 50%
- 50 - 70%
- 70 - 90%
- ≥ 90%
- EEA member countries not reporting under Water Framework Directive
- No data
- Outside coverage

SOURCE: European Environment Agency *"European Environment: State and Outlook 2015"*

- proportion of water bodies in each river basin that have less than good ecological status or potential

Not only is the rate of progress slower than was anticipated when the policy was implemented, there is also increasing uncertainty now about whether or not the target can actually be met. In the House of Lords' 2011/12 inquiry into EU Freshwater Policy government officials suggested that they were hoping that 75% good status by 2027 was achievable.

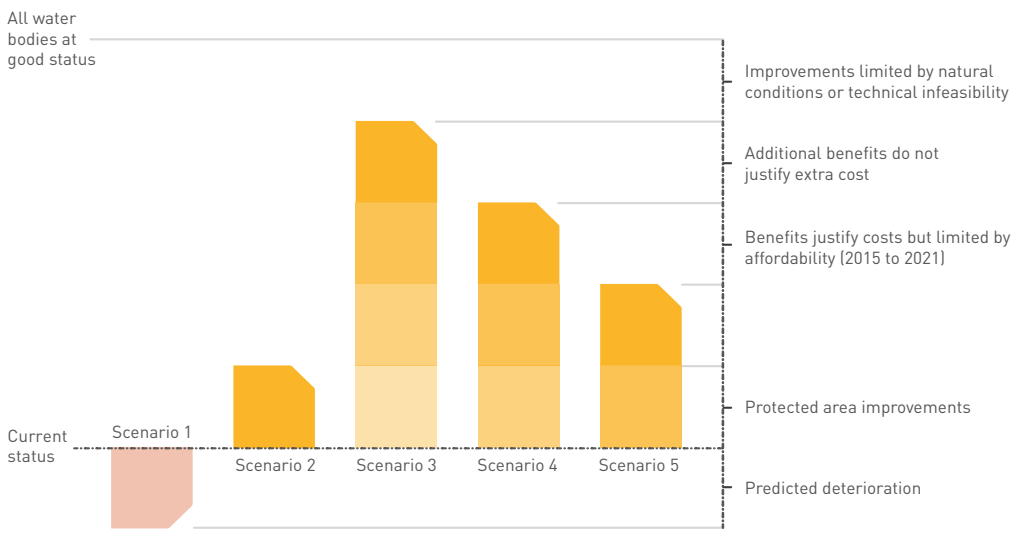
Last year the Environment Agency produced an economic analysis to accompany its consultation on river basin management plans. Their appraisal highlighted that at present it would not be possible to bring all our water bodies to good status due to the technical feasibility of solutions (see **Figure 18** below). So even if we had unlimited financial resources we would still not be able to meet the target.

We think that it is appropriate to debate the pace and scale of WFD implementation. In particular the feasibility gap in meeting the overall target needs to be discussed further, along with the pace and scale at which good status is achieved.

We think that customers should be involved in prioritising environmental improvements, as they ultimately have to pay for them. This may mean that more attention is paid to the rivers that are in the poorest condition, as opposed to the more broad-brush approach of simply aiming to achieve good status.

It is likely that our customers' have different priorities, reflecting where they live and how they interact with the natural environment. It is vital that we understand these local priorities and use them to help shape our future environmental investments. The WFD emphasises that work should not be undertaken if it is disproportionately costly (i.e. where costs exceed the benefits). Views of water customers should be the critical factor in determining what constitutes a disproportionate financial cost. In assessing disproportionate cost, the benefit assessment should incorporate the results from water companies' surveys of customers. This research has the advantage that it reflects willingness to pay for improvements in the prevailing economic climate, and gives customers the opportunity to make choices between river quality improvements and improvements in other aspects of service.

Figure 18: The Environment Agency's economic analysis as part of its 2014 consultation on the draft update to the river basin management plan highlighted the gap that exists in achieving WFD objectives. As shown in scenario three, even with investment not limited by benefits exceeding costs or by an affordability constraint, there is still a limit on what can be achieved because of natural conditions of the water body or technical feasibility. This essentially shows that it is currently not feasible to bring all water bodies to good status by 2027.

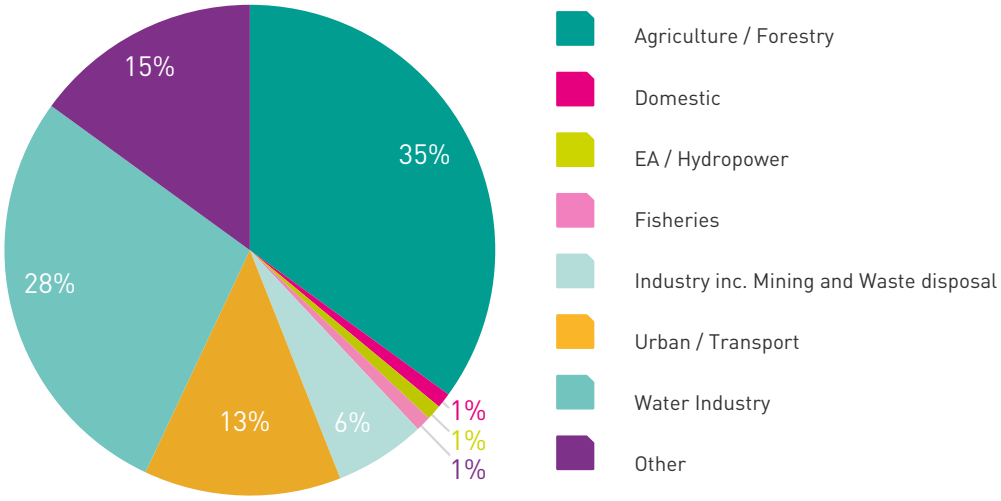


Ensure that other sectors make a proportionate contribution to environmental improvements

There is no doubt that the water industry has a large part to play in delivering environmental improvements, including meeting WFD objectives. In recent times, the water industry has deployed innovative approaches such as catchment management alongside more traditional end-of-pipe solutions in order to deliver required improvements. But to deliver the WFD's objectives fully and in a sustainable way will require contributions from many other sectors as we seek to address the many environmental challenges that exist. This in itself will require a framework that incentivises all sectors to contribute, to explore new areas and to deliver further innovation.

Analysis by the Environment Agency demonstrates why we need a multi-sector approach. This shows that many parties contribute towards water management challenges in our region. We need to protect our customers by making sure that they pay their fair share for environmental improvements but are not compensating for pollution caused by others. This is the 'polluter pays' concept, a central tenet of the WFD – the sectors that cause the pollution must take the lead in making improvements.

Figure 19: Sectors responsible for the significant water management issues in the Severn river catchment



SOURCE:
"Environment Agency, Severn River Basin District: Challenges and choices, June 2013"

Tackling pollution is relatively straightforward if the polluter can be identified. The Environment Agency has existing legal remedies to prosecute individual businesses for pollution events when the evidence suggests an offence has been committed, either deliberately or through inadequate maintenance or negligence, and it is in the public interest to do so. But it is sometimes difficult to identify who has actually caused the problem.

Diffuse pollution is a particular issue in the water sector. The individual sources of diffuse pollution may each be acting within legal bounds but, when added together, the impact on the environment can be substantial.

In 2010, the RSPB estimated that *"78% of water bodies in England and Wales have been identified as at risk of failing to meet Good Ecological Status due to diffuse pollution. Pollution from farms, roads and urban areas causes widespread damage to freshwater ecosystems and costs water customers hundreds of millions of pounds. However, in RBMPs the agricultural sector (the single biggest source of diffuse pollution) will have to pay just £11,000 per year while 'urban and transport', the other key sector causing diffuse pollution, will contribute only £2,400 per year."*

It is essential that other sectors make a proportionate contribution to environmental improvements, and we recognise that we may need to facilitate this by exploring more innovative practices.

What is diffuse pollution?

Diffuse pollution is commonly driven by rainfall and how we manage land. It occurs when nutrients, pesticides, faecal bacteria, chemicals and fine sediments are lost from the land into local streams, rivers, lakes and groundwater.

Diffuse pollution occurs in both rural and urban areas. It often originates from a range of sources but the effect is cumulative. So what appears to be a small amount of runoff from one field (or street, or car park) when added to all the other sources that also feed into a stream or river, can have a significant overall effect on water quality.

Explore more innovative practices to meet environmental challenges

Water companies have made significant investment in additional water treatment to address raw water quality deterioration. The causes of this deterioration have included pesticides that have entered the water cycle through agriculture, amenity and pharmaceuticals that have not broken down naturally in the environment.

We have also been looking at alternatives to end-of-pipe treatment. We are increasingly putting integrated catchment management solutions to use in order to deal with pollution at its source or to keep the amount that enters the environment to a minimum. This type of approach tends to have a lower whole life cost and has been supported by changes in the regulatory framework, for example through the incentives to minimise totex. Most of our catchment management work has taken place in rural areas so far, and we intend to develop similar approaches for urban areas.

Case study: Three different aspects of catchment management in practice

Our first metaldehyde free catchment

Working with farmers around Staunton Harold Reservoir, we have established our first 'metaldehyde free catchment'. The farmers were offered incentives that encouraged them to switch to ferric phosphate, a water friendly alternative to metaldehyde-based slug pellets. Metaldehyde levels have remained well below the drinking water standard throughout the project. Although prescriptive in its nature, product substitution provides rapid and significant improvements in water quality in catchments. The scheme will be rolled out in other catchments in the Derbyshire/Leicestershire area over the next five years.

Farmers as Producers of Clean Water (FaPCW)

This initiative rewards farmers for producing clean run off from their land. Farmers within a catchment are rewarded where the water is kept free from pesticides. The approach prompts farmers to take ownership of the issue and the solution (it is not prescriptive). It also encourages them to work together as the highest rewards are unlocked when all farmers within the catchment contribute. The scheme has been trialled in two catchments over the last two years and will be rolled out more widely in the River Severn and River Bourne/ Blythe over the next five years.

Integrated catchment management: Rufford Pigs

Nitrate levels had been rising in our boreholes in Rufford. Detailed analysis over a number of seasons identified that there was a clear correlation between the nitrate levels and local farming activity. Collaboration with the farmer and subsequent changes in farming practices have prevented the need for further investment on our treatment works.

As we have seen, catchment management has significantly broadened the range of tools available to address environmental issues. But we have also seen that sustainable environmental improvement is a complex challenge. It will require us to look at new areas and develop new approaches. There are three areas in particular we believe could provide significant benefits:

- **Re-prioritise existing funding to help farmers make environmental improvements.**

  A key component of a more holistic approach to the environment has to be looking at more innovative ways to help farmers reduce their use of chemicals. This could be achieved by better targeting existing Common Agricultural Policy (CAP) payments or through access to other grant funding. We support reform of the CAP and would encourage greater direction in key issues to be mitigated. This concerns in particular the issues that have the most relevance for the WFD, especially pesticides and phosphates. A key enabler for farmers to access the grants that are designed to protect water resources is for the area in which they operate to be designated as a CAP/Countryside Stewardship high priority area.

  The process of reforming CAP – including the introduction of Water Capital Grants in March 2015 – has gone some way towards including more emphasis on water and its importance. Using existing funding in this way means that resources are allocated more fairly and that water customers do not have to pay for the removal of pollution for which they are not responsible.

- **Prevent new pollutants from entering the water cycle.**

  Most resources are currently focused on removing pollutants that have already entered the natural environment. The banning of some pesticides, or the introduction of an environmental impact levy on them, could be an appropriate form of action to reduce the risk to environmental and drinking water quality. This will ensure that the polluter pays principle is applied fairly.

  Pesticides are regulated in the UK by the Health and Safety Executive's Chemical Registration Directorate. We think more could be done within their approval process to secure raw water quality. For example, approval should not be granted for any new product to be licensed for use in the UK if current technology cannot remove it at a reasonable cost (the Granular Activated Carbon process for metaldehyde removal for example), acknowledging that this will change as technology evolves.

- **Helping consumers understand the environmental impacts of their purchases.**

  In the 1980s consumer power helped to reduce the amount of chlorofluorocarbons (CFCs) that deplete the ozone layer. This was achieved by legislative change (the 1987 Montreal Protocol put a freeze on the amount of CFCs that could be produced) complemented by a clear labelling campaign on aerosol products that allowed consumers to make informed choices about the products they purchase.

  Three decades later and consumers now have access to environmental information that helps inform their purchasing decisions on a wide range of products, from energy efficiency appliances and homes, to the provenance and content of food.

  Informing consumers about the impact of their purchases on the water environment could contribute to making environmental improvements. Labelling products to show the environmental impact, and/or the cost of removing the harmful products from the environment, would allow consumers to make a clearer, more informed, choice. This is distinct from having products that are designed specifically to minimise environmental impact (low impact household detergents for example). Labelling would require all products to show environmental impact. As with CFCs, this may drive manufacturers to change their products.

Progress abstraction reform at the earliest opportunity

The case for reform of the abstraction regime in England and Wales is well understood. Abstraction reform will play an important role in ensuring that we balance the needs of the environment with the needs of water users. At present, the amount of water per customer that Severn Trent takes out of the environment is amongst the lowest of all the water companies in England and Wales. And we do so while serving the second largest customer base in the country. This shows the scope to balance the needs of the environment and of water users. However, we recognise that more can and should be done.

Policy makers, regulators, water abstractors and water companies understand that the current system which was established in the early 1960s is no longer fit for purpose in an environment of climatic change, population growth, shifting patterns of demand and a desire to protect and enhance our water environment.

In *Water for Life*, the Government signalled its desired direction of travel for the abstraction regime:

The problems with the current regime will become more apparent as it struggles to cope with the challenge of a changing climate and changing demand. We need to replace it before that happens. We will therefore introduce a reformed abstraction regime. Reform must reinforce the message on the need to adapt to climate change, giving abstractors clear signals on water availability to allow them to plan effectively and invest for the future. All existing licences will be changed in a phased way in the transition to the new regime, as will new licences issued to abstractors currently outside the regime. (DEFRA, 2011, p. 22-23)

A key economic principle for a new approach to abstraction management should be to ensure that water always finds its way to its highest value use. That includes times at which it is most valuable to society that water is left in the environment. Many commentators have documented why the current regime does not allocate precious water resources in this way.[18]

Barriers with the current system include:

- Limited information is available about trading opportunities. Trading provides a good mechanism for revealing the value of water. But it has proved difficult for users to identify potential opportunities to trade water or trade rights in water. Early work on trading mechanisms is starting to demonstrate how such barriers can be overcome.[19]
- High transaction costs. Even where trades can be identified current approval procedures can be time consuming (6 to 18 months) and hence costly. There are also uncertainties that discourage buyers and sellers.
- Regulatory dis-incentives. Some positive developments at PR14 should begin to address the issue of dis-incentives. Providing financial incentives around water trading and abstraction as well as the new totex framework will provide water companies with new tools to think about how they manage their abstraction activities.

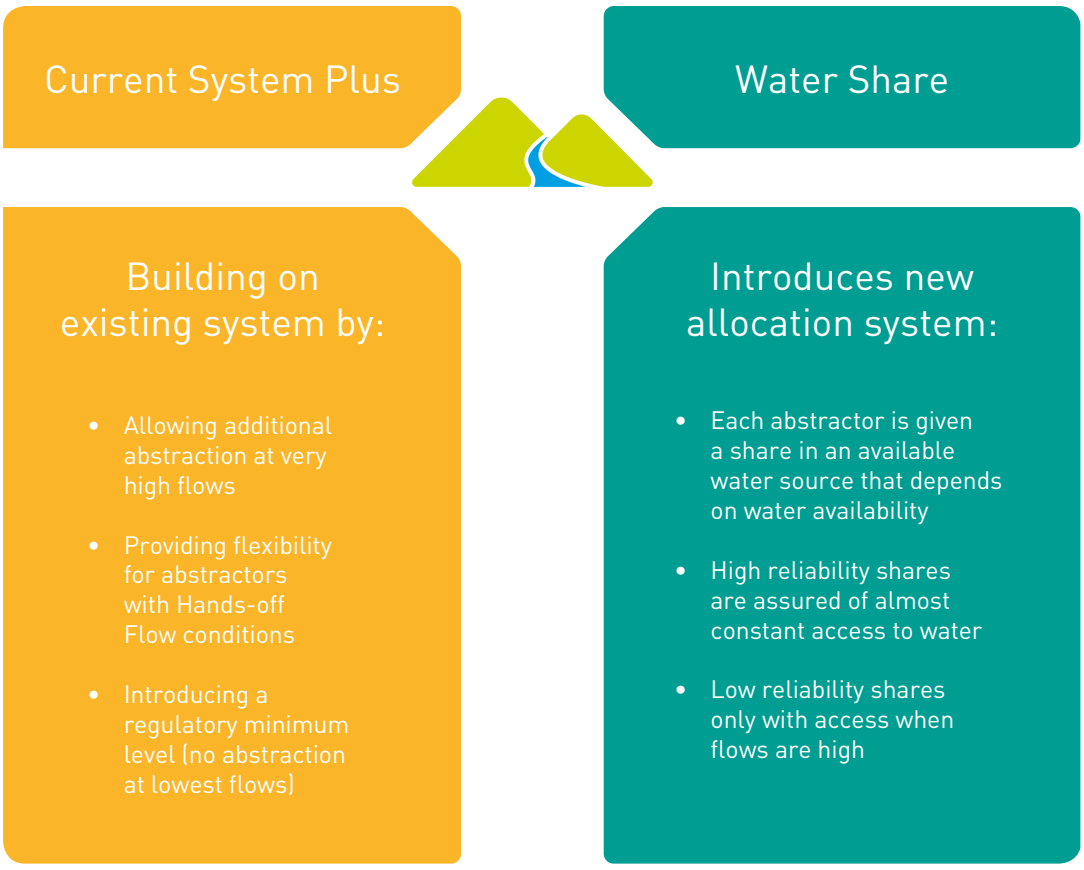
[18] Frontier Economics, A right to water, 2011

[19] HR Wallingford, Phase 2 Final Report: Research into water allocation through effective water trading. A report for Anglian Water, 2012

The Government has made some progress on what a reformed regime *could* look like.

In December 2013 it published its proposals. Two reform options have been tabled: Current System Plus and Water Shares. The key elements of each are summarised in the graphic below:[20]

Figure 20 : The Government's options for reforming water abstraction

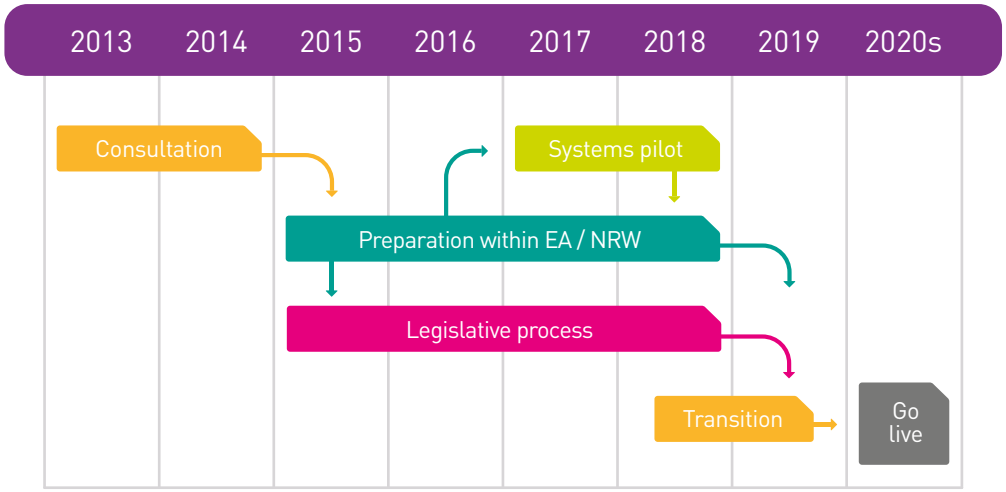


[20]DEFRA and Welsh Government, Making the Most of Every Drop: Consultation on reforming the Water Abstraction Management System, 2013.

Severn Trent is supportive of the direction of travel that is being signalled by Government. Delivering the required level of environmental protection and enhancing the economic benefits from water abstraction should be the objectives of a more flexible and responsive abstraction regime.

Reform of abstraction is not a straightforward task. **Figure 21** shows the currently understood time frame – it will be well into the 2020s before new approaches and systems are in place.

Figure 21: The Government's timetable for reforming water abstraction



SOURCE: DEFRA & Welsh Government (2013) Making the Most of Every Drop: Consultation on Reforming the Water Abstraction Management System, December 2013.

Our view is that the Current System Plus option shows the most promise from the viewpoint of more timely and speedy implementation. This approach is a more evolutionary approach than Water Share which would be a more radical departure from what we have at present.

There are a number of principles that should be at the heart of proposals on abstraction reform:

- Customer engagement and support must be paramount, particularly where reforms may have bill impacts for customers and increases risks to water companies;
- Pilot testing of new approaches is both sensible and essential. The results of pilot tests can be used to help guide the pace and nature of reforms.

Any reforms should also be considered in the context of ensuring resilience of water supply systems and wider market reforms in the sector.

Consider pricing for scarcity in the long term

How we price for water remains a key long term strategic challenge for the water industry. It is also closely linked to the required reforms to abstraction management that have been discussed above.

The way water companies currently pay for the water they abstract bears little relationship to the actual volumes taken. The current system of abstraction charges is constrained to recover the costs of administering the abstraction licensing system. Those charges bear no relation to the actual value of the water.

The Government's reform proposals on abstraction – under either option – will be designed to improve the link between what we pay for abstraction and the actual volumes taken. This reform is long over-due. Further beneficial reforms will be to take account of the reliability of an abstraction need and to charge less to abstractors who return more water to the environment.

How abstraction charging reform is handled will determine what impacts there may be for the prices water customers pay for their water services. Although the scale and timing of any future price impacts are not known at this stage, we can still give thought now as to how those price impacts might be managed.

For example, higher abstraction costs for water companies could be channelled through end user tariff structures that are designed to reveal the value of water at times of scarcity. Severn Trent has used seasonal structures with industrial customers for a number of years and these kind of tariffs can provide useful price signals to customers about their water usage during periods of highest demand. Similar considerations apply with structures such as rising block tariffs where higher prices can be charged for marginal (non-essential) uses, while basic essential uses are charged at lower prices.

In time, the way in which companies charge customers for water could more closely mirror how companies are themselves charged for the water they take from the environment. Essential needs are satisfied at an acceptable price, while less essential and discretionary usage is discouraged through higher rates.

Longer term strategies on end user charging go hand in hand with other policies, such as household metering. Continuing to expand household metering at a sensible pace is a good example of a no regrets policy. It is integral to the way water companies think about water resource planning.

It expands the opportunities now for customers to think about and manage their water usage and indirectly their impacts on the water environment. And it provides the opportunities in the future to reinforce the importance of being economical in the use of precious water resources at the times of greatest need.

We believe research should be commissioned on options for scarcity pricing, building on successful international examples e.g. Australia, USA etc.

PART F

How do we deliver innovation and introduce market solutions for the benefit of customers?

Driving greater innovation and markets – key points

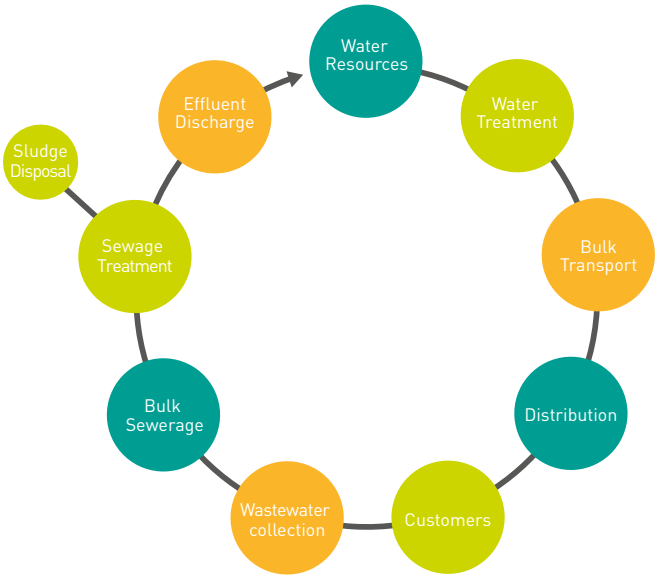
Policy response	Delivery options
Provide direction on where markets should develop	• Allow further flexibility in the licensing framework for companies to innovate the industry structure • Learn from non-household retail market reform
Progress the opening up of the existing water value chain	**For water resources** • Create greater transparency on systems, pricing and costs for market participants • Require more market testing of longer terms plans **For sludge** • Remove the barriers that currently exist to unbundling and separation
Encourage new markets and innovative ways to deliver better water management	• Encourage markets in eco-system services • Explore the potential for Catchment System Operators.

Introduction

There has been limited structural change in the ownership and operation of the water industry since it was privatised. While the number of water companies has fallen from 39 to 19,[21] this consolidation has primarily seen smaller water only companies merging or being absorbed into larger water and sewerage companies. The structure of the sewerage sector has not changed from the ten regional monopolies privatised in 1989.

Throughout this period the basics of how water companies are themselves structured has not generally changed or been challenged. The industry has been composed essentially of 'source to tap' and 'source to sea' regional monopolies whose activities span the water cycle **(see Figure 22)**. In other words, the water industry to date has operated as vertically integrated businesses.

Figure 22:
What water companies were set up to do



[21] At the time of publication, the proposed merger between South West Water and Bournemouth Water was under review by the CMA

The economic case for these integrated structures in the water industry has been expressed in the following terms:

- Water and sewerage services are provided by complex integrated natural and geographical systems. This creates many delivery interfaces that have to be coordinated to ensure the system functions.
- Geography and topography are key. Water services are shaped by the catchments from which they flow and boundaries between 'upstream' and 'downstream' are not always clear.
- Water systems meet local needs and local circumstances and this creates many more assets to manage and co-ordinate.
- Costs are interdependent and are managed by optimising processes jointly.
- Management costs are reduced if interests are aligned up and down the supply chain.

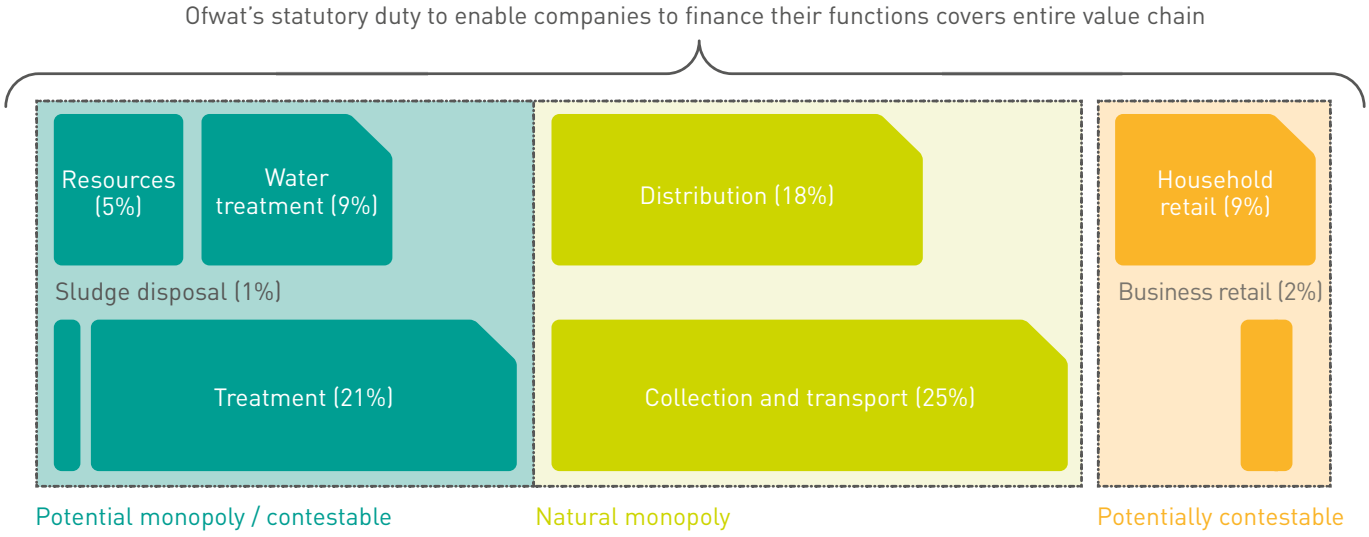
There are of course counterarguments, and these have come to the fore as policymakers and regulators explore how water services might be opened up to market forces. They include that:

- the tensions created by competing businesses are healthy and will drive innovation and better outcomes for customers;
- different activities within the supply chain require different skills and separation of these different business activities will result in more focused and creative management – separating wholesale and retail activities at PR14 was largely promoted on this basis; and
- competition is better for driving innovation – whether through increasing customer share in the market or securing the right to serve the market with new products and services.

So the issue may be about balance. Where do integrated structures serve customers better by doing things right? And where could market solutions serve customers better by doing the right things?

The direction of travel that Ofwat sees as desirable is clear. It signalled early on in the PR14 process and now through its Water 2020 vision a desire to separate potentially contestable and monopoly business activities and functions.

Figure 23: The water and sewerage value chain by revenue



SOURCE – Ofwat, Observations on the regulation of the water sector, a lecture by Jonson Cox, Chairman, Ofwat, 2013

On the water supply side upstream market reform is intended to introduce contestability to water resources, while downstream reform could see sludge treatment and disposal separated from sewerage collection and treatment. This idea of unbundling also featured in the recommendations made by the Cave Review, particularly with regards to creating new unbundled licences to sit alongside the bundled licences of the incumbent companies.

Developments in these directions put faith in the idea that exposing some of the current functions of water and sewerage companies would increase the contestability of those functions, thereby revealing the scope for innovation in order to do the right things for customers.

Our previous *Changing Course* documents have embraced the potential for market solutions to improve the way in which the industry delivers further improvements for customers.

That being said, we do not embrace market solutions as some kind of panacea. Lessons from other sectors – energy for example – remind us that market led solutions may not deliver for a number of reasons. Customers may not perceive genuine choices and markets may fail to coordinate sufficiently to guarantee essential services in the medium to long term.

The important question about any market led vision for the water industry is not whether it is right or wrong, but rather which parts could be right and which parts must we not get wrong.

Policy responses and delivery options

As a contribution to the debate we have identified three key areas for policy responses.

1. First, provide clearer policy **direction** and criteria on where markets should develop and how they should be developed. This should be based on a clear appreciation and understanding of where in the water value chain markets can add value to the benefit of customers.
2. Secondly, **progress** the opening up of the existing water industry value chain where there is a case to do so. Two areas we have previously identified are water resources and trading, and sludge markets.
3. Thirdly, **encourage** new markets and mechanisms to drive innovative approaches to address the challenges in water management.

Providing direction on where markets should develop

These three policy areas emphasise a key point: the way in which we expose the different water services and activities to more market pressures may have to be quite different. Again, there will be no panacea-like solutions. We illustrate this point below, with the examples of water resources and sludge.

As we also outline below, there are interfaces with wider water management activities that are not captured within existing industry structures. Challenges such as flood management, managing diffuse pollution and managing upstream sources are currently lost in the separations of responsibility between providers of water services and custodians (regulators) of the water environment. New, more innovative solutions like ecosystem markets and catchment system operators would represent notable and more radical departures from present structures and approaches. However, they may in their own ways provide better coordination and a clearer focus on the wider task of managing the water environment.

Consistent with Ofwat's duties, greater flexibility is needed within the licensing framework to permit contestability within the water value chain. Free entry and exit from parts of the value chain would be an essential part of the necessary reforms. Encouraging innovation through an agenda of market reform is about allowing water service businesses to explore how new value can be created from doing things differently. Any mechanisms that attempt to remove the value created from restructuring during an AMP will only serve to dampen the incentive to restructure.

Important lessons are also already emerging from the planned introduction of competition into the non-household retail market in England. Market opening is still scheduled for April 2017, although delivering that will be difficult and complex, and the timescales are tight. Further directions on how we make markets work for customers will be available once that market is live and functioning. Getting things right in that market will provide important guidance for how we progress the opening up of other parts of the water value chain to markets (albeit that non-household retail is only 2% of the water sector's value chain).

Progressing the opening up of the existing water value chain

We see scope for progressing the opening up of markets in water services in two particular areas: *water resources* and *sludge treatment and disposal*.

Progressing reform in water resources

The Government is committed to further efforts to reform the present "slow and bureaucratic" abstraction licensing regime. This is essential for delivering quicker and more flexible access to water resources. One benefit of this would be to create opportunities for short-term trading as responses to inevitable variations in weather.

Making it easier to access and trade water resources could have significant economic benefits, as previous work undertaken by Severn Trent and others (including Ofwat) has shown. Enhanced returns for water trading, which Ofwat allowed for in the PR14 determinations, were a helpful step towards better incentives for water companies to trade.

However, further development of market reform in water resources is still needed in some key areas:

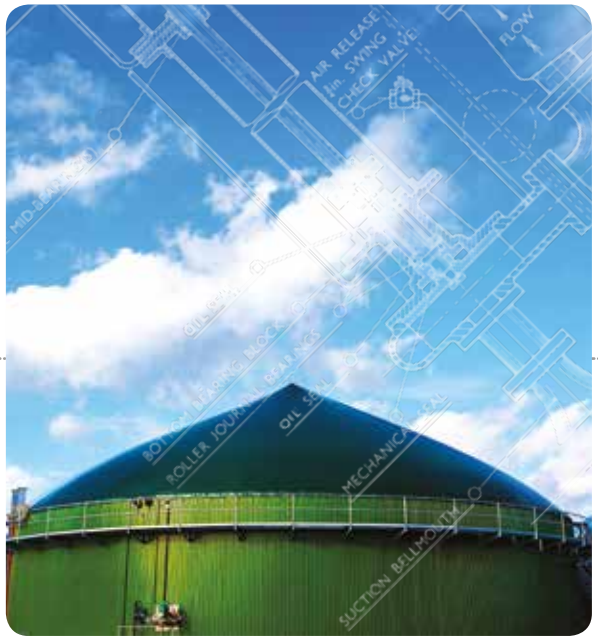
- Market transparency: Interconnectivity remains a constraint beyond very localised movements of water. Market participants will need greater visibility of water companies' infrastructure and a more coherent approach to prices and costs in these markets. On pricing, appropriate signals for trading would be strengthened by making marginal cost pricing principles a more prominent feature of bulk supply and access pricing guidance. For example, Severn Trent's approach to access pricing recognises differentiated pricing signals at the water resource zone level, and this pricing is based on marginal cost principles. Recent work that we commissioned from Oxera [22] also draws the important conclusion that these de-averaged access prices can help provide market visibility through price signals, while also maintaining the stability of regionally averaged charges for customers. This is an important consideration for how we progress market opening while maintaining bill stability for customers.

- Market testing of longer term plans: In water, resources planning and coordination is of critical importance for long-term sustainability and resilience. The development of 25-year water resource plans is a statutory obligation on water companies and it is important that this catchment based coordination is not lost.

  As a result, a focus on market testing of the ways in which water resource plans are procured and delivered remains appropriate. The August 2012 WRMP guidelines from the Environment Agency were a positive move in this direction. The guidelines encouraged companies to investigate and market test against third party options for meeting their WRMP needs.

  There remains a need to further align Ofwat's price setting framework with new capacity planning from the WRMPs. This also needs to be set in the context of Ofwat's new duties relating to resilience.

[22] Oxera, Options for access pricing methodology, prepared for Severn Trent, 2015



Progressing commercial opportunities in sludge

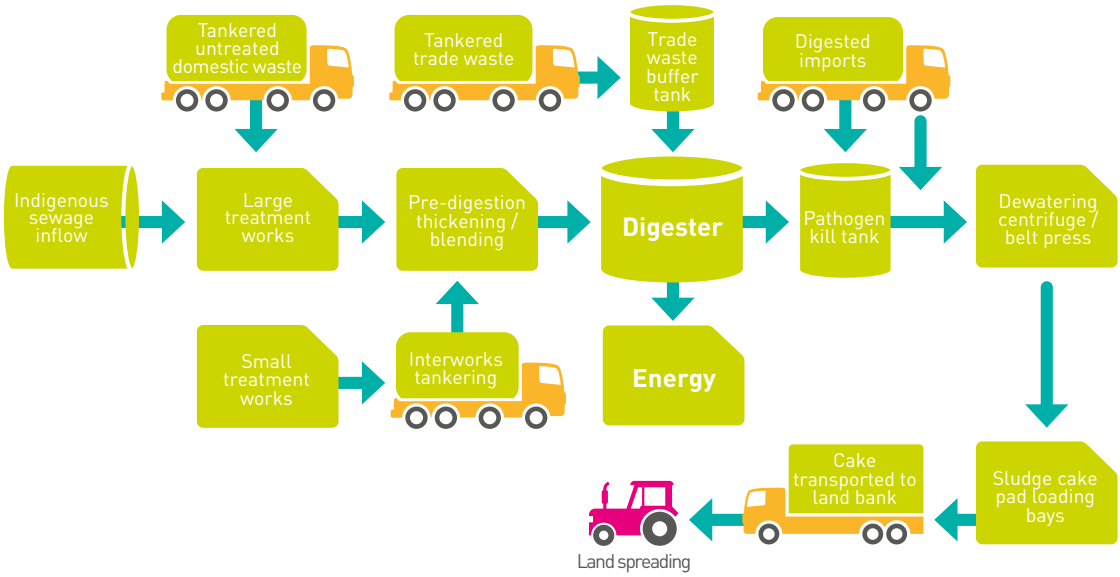
Sludge is a natural by-product of the wastewater treatment processes. The market for processing sludge is converging with other markets, particularly food waste. It is increasingly seen as a valuable renewable energy source, rather than a waste product. Sludge is also an area where there are choices about technologies and this drives alternative options for how sludge treatment and disposal can be managed.

These market changes create opportunities and threats for wastewater businesses that currently operate integrated sludge operations. They also create scope for different kinds of market solutions that are more about allowing commercial decisions on how sludge businesses can be developed and managed. Ofwat's Water 2020 paper sees sludge as a contestable market.

In the longer term, we see the potential for our sludge business to become a fully commercial unregulated entity that is able to compete and participate in a fully deregulated sludge market.

However, reaching that end goal is a complex task given the current integrated nature of both the regulatory licensing framework and price controls, and indeed the physical wastewater asset systems.

Figure 24:
Sludge within the wastewater treatment process



To make progress towards a more contestable framework for sludge will require focus on a number of key issues:

Removing barriers:

Important barriers that would need to be reviewed include:

- How to harmonise environmental permitting regulations in line with the recommendation of OFT (2011) .
- How the licences of current incumbent water companies could be amended, including options to create separate sludge licences. A move to modular licences would seem essential for this.
- How best to deal with access pricing issues and in particular sunk costs arising from pre-privatisation investments.
- How to separate regulatory assessments of the wastewater totex and the cost of capital.

Wessex Water's paper, *Potential developments in the commercialisation of the sludge treatment and recycling market*, advocates similar changes.

Being fair to customers and shareholders alike:

Whether companies move towards divesting their sludge businesses or just move to more limited forms of separation (i.e. functional), there is a need to establish some principles to frame the strategic decisions that companies may take:

- Customers must be protected so that they are no worse off over the lifetime of the sludge assets. At the same time there is no need for customers to be better off straight away. If market mechanisms work, competition will drive benefits to customers. There is no need for regulation to mandate a benefit (through clawback or other such mechanisms).
- Equally shareholders should expect to be no worse off from proposing structural changes compared with a 'no change' scenario. In line with risk and reward, if value is enhanced and gains are generated from restructuring then shareholders should expect to share in these gains.

Encouraging new markets and innovative ways to deliver better water management

The eco-system services approach provides new ways to think about how we manage the water environment. It also opens up opportunities for thinking about what role water companies and markets can play in delivering wider water management. A number of water companies, including Severn Trent, are already developing and participating in these approaches through a range of initiatives. However, these initiatives remain small-scale and are at an early stage of development.

Figure 25 provides some perspective on the activities, goods and services that are captured under an eco-system services approach. The key is to establish connections and interfaces between elements that at present are managed in discrete and unconnected ways.

Figure 25: A view of the water goods and services provided by eco-systems

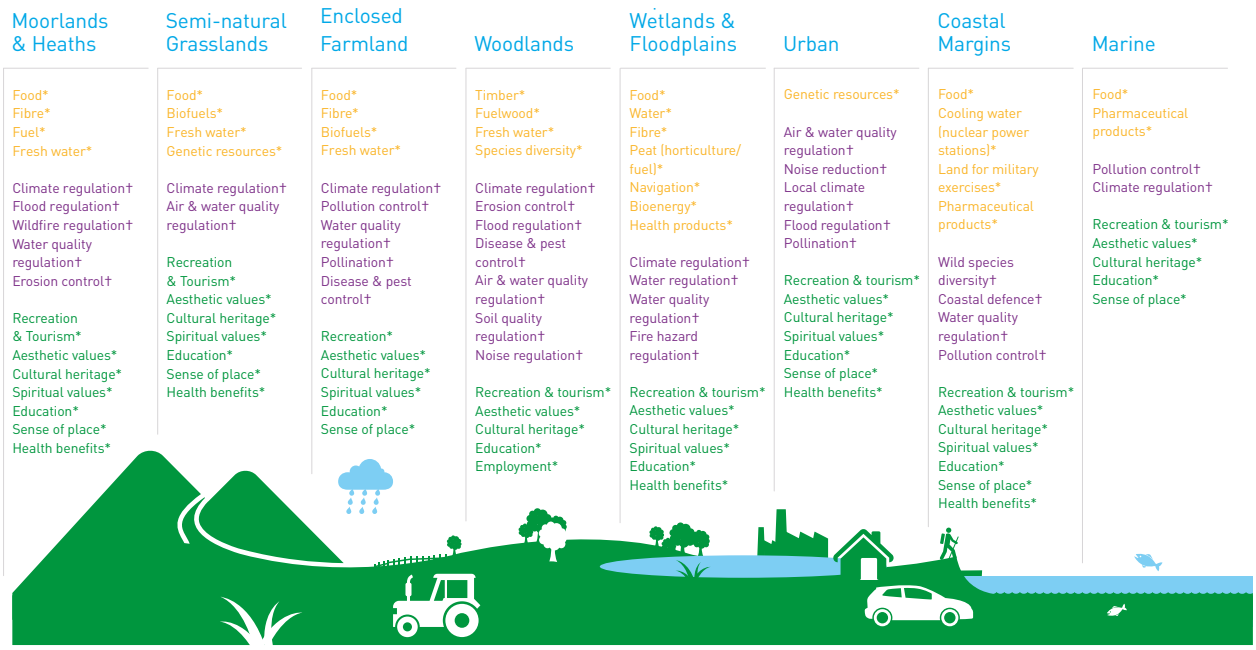


Figure 11 The eight Broad Habitats assessed in the UK NEA and examples of the goods and services derived from each. Items marked with an * denote goods, those with † denote services. Items in orange are considered to be from provisioning services, purple from regulating and green from cultural. The supporting services, including amongst others primary production and nutrient cycling, are not listed against individual habitats as they are considered necessary for the production of all other ecosystem services. Source: adapted from the Millennium Ecosystem Assessment (MA 2005).

Encouraging markets for eco-system services

Markets often work best when different ways are available for delivering the same outcomes. This is no different for eco-system services. However, very often the problem is that there is no recognisable market in place.

This means that thinking is needed as to how we can make markets for the services provided by eco-systems in water more visible. More particularly the role of markets is to help reveal the value of eco-systems in ways that are not presently evident. For example, water companies undertake many activities that benefit from eco-system services, such as climate regulation, flood regulation and regulation of raw water quality.

Water companies can also impact in beneficial ways through their investment decisions on a wide range of eco-system goods and services. For example, habitat protection and enhancement, carbon usage, flood regulation and recreation and tourism.

This means that water companies can act as both buyers and sellers in local eco-system markets. Their experience and expertise in water management could also allow water companies to act as 'brokers' in these potential markets. In this role they would bring together suppliers (for example farmers through their land management practices) and users/customers that derive benefit from a high-quality water environment.

Water companies as asset heavy businesses are well versed in the tasks of managing and financing physical capital assets. Extending this to the management of natural capital assets could provide new and innovative opportunities for water companies.

Exploring the potential for Catchment System Operators[23]

Another perspective on this broker concept is provided in a recent paper by Dieter Helm where he argues that the wider water sector faces significant challenges. These arguments resonate with the themes we have outlined above about integration and coordination in the management of water activities.

Helm argues that since 1989 management in areas such as abstraction and pollution control have suffered from "no one in charge". A potential solution is to make someone in charge through the creation of a Catchment System Operator (CSO). This CSO would adopt some of the current planning functions of water companies but crucially would integrate those functions with others such as flood management.

A CSO would set the strategy, objectives and plans for a systems approach to water management. Delivery and production of those plans could be undertaken through a range of means: competitive bidding or partnership working between water companies, farmers, local authorities, wildlife trusts and other not-for-profit organisations.

We agree that co-ordination within a catchment needs to be improved to reach a sustainable position, and whilst one solution might be to introduce more parties into the mix, another pragmatic option is to consolidate accountabilities within existing organisations. We should debate the alternative approach of expanding the remit of water companies' roles and responsibilities, as water companies already possess much of the expertise, knowledge and experience of managing water catchments, developing and financing long-term plans, and meeting legal obligations.

The UK's strategic challenge on water is the need for better co-ordination between water catchments particularly if longer term we want to encourage economic interconnection and greater resilience across water networks. A nationwide or pan-regional system operator would be able to co-ordinate needs and reveal investment opportunities at a more macro level and possibly provide more benefits than a more local catchment system operator could. The benefits of introducing such a body is worthy of some debate.

[23] Helm, D. Catchment management, abstraction and flooding: the case for a catchment system operator and coordinated competition, 2015

CHAPTER 5
A way forward

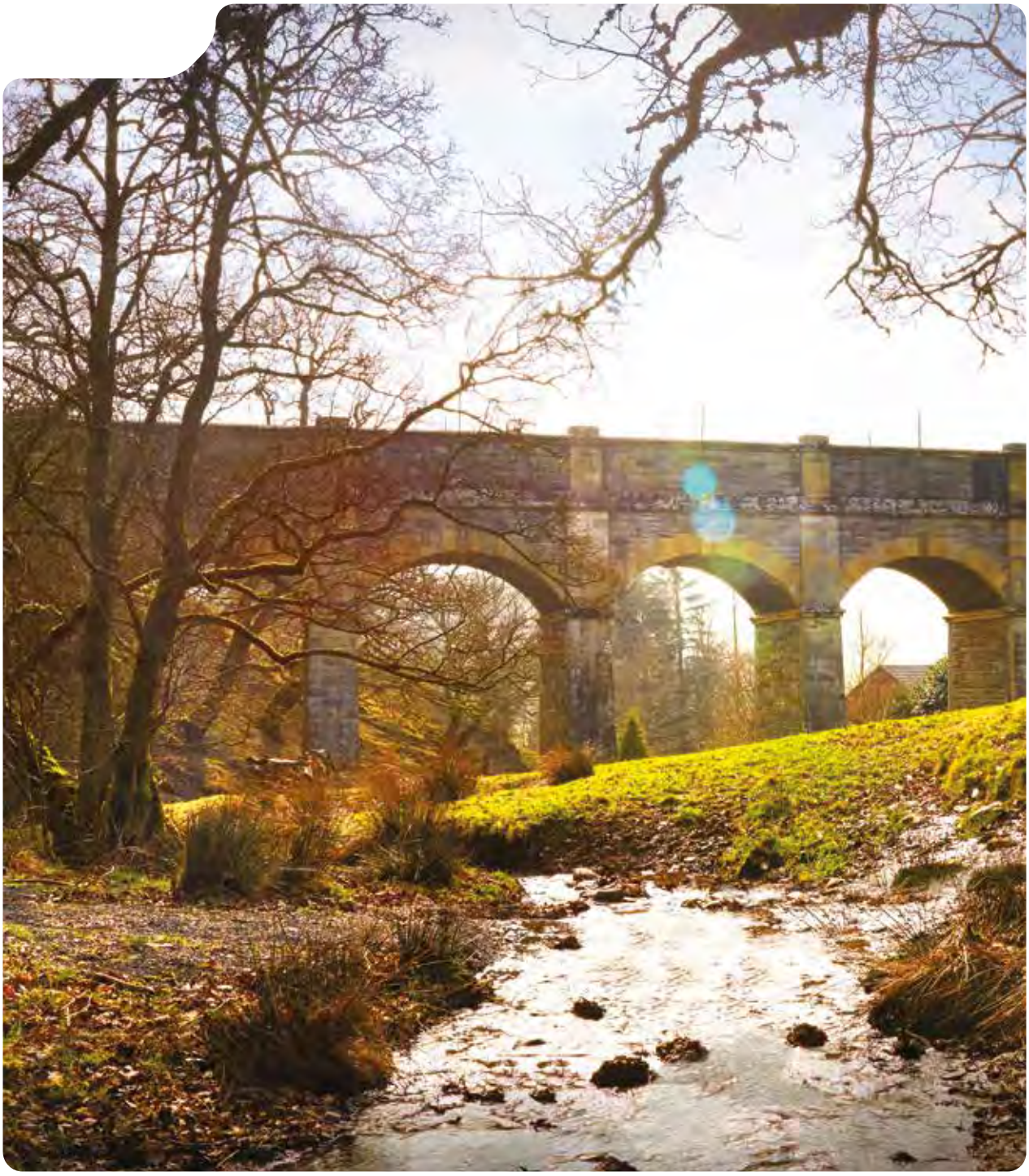
The water sector is at an exciting point in time

Much has been achieved by the water sector since privatisation in 1989. Big strides have been taken by Ofwat and government alike in developing the regulatory and policy framework for the sector going forward with a far greater focus on customer outcomes - and the opening of the retail market in April 2017 for all non household customers in England.

The next five years and beyond promise to be even more exciting times as there are significant and challenging policy decisions to be taken to ensure the sector remains on a sustainable course - and maintains the trust and confidence of customers and other stakeholders in a rapidly changing world.

There will inevitably be increasing expectations on water companies to:

- ensure water bills remain affordable;
- deliver outstanding customer service (incentivised by ODIs);
- ensure the successful opening up of the non-household retail market in April 2017 - and the subsequent development of upstream markets;
- deliver further environmental improvements; and continue to engage with, and educate customers, and the wider public.



We want to promote a constructive debate about the water sector's future

Against this backcloth, deciding on the right policy options to deliver a sustainable course is not a straightforward task. *Charting a sustainable course* aims to promote the debate about which policy delivery options will deliver the best outcomes for customers and other stakeholders.

We continue to welcome the opportunity to help shape the regulatory framework and competitive landscape of the water sector - and believe that it is important for the industry to take the lead in shaping its own future - putting customers at the heart of the debate.

We are delighted to have the opportunity to contribute our ideas to *Ofwat's Towards Water 2020 – meeting the challenges for water and waste water services in England and Wales* consultation. As part of the "market place for ideas", Ofwat has initiated we have published two independent reports on access pricing and RCV allocation.

Charting a sustainable course – delivering a better future for customers intends to move the debate forward again - and to contribute positively to the industry's discussions on the reform agenda. We look forward to engaging constructively in debate with the industry, to ensure the sector remains on a sustainable course and maintains the trust and confidence of customers.

Severn Trent Centre
PO Box 5309
Coventry
CV3 9FH

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