



Speech

Given by Aileen Armstrong, Senior Director, Company Performance and Price Reviews
Beesley Lecture
Thursday 25 November 2021

From the pandemic and net zero to PR24: The current outlook from Ofwat

It's a pleasure to be here, and to have the chance to discuss the direction that Ofwat's regulation is likely to take over the next few decades.

To explain where we're going, I want to paint you a picture of who we are as a regulator. I'm very clear that our role is to help create value in the water sector. And I just want to recognise one of Michael Beesley's invaluable insights that continues to guide us in this role – and that is that, as regulators, we are most effective when we **enable** companies to improve, rather than attempting to make those improvements for them.

But **how** we fulfil that role depends very much on the context we are working within – and the world we're in for PR24 is different from the past. We need to embrace the challenges facing the sector now. To do this, we need to be agile, collaborative, and focused on the long term.

Ofwat's journey

Ofwat has grown up since its early days



At privatisation, our focus was remedying past underinvestment



Over time, we gradually addressed many of the problems of the past



Now, we must focus on the challenges of the next few decades and create wider value

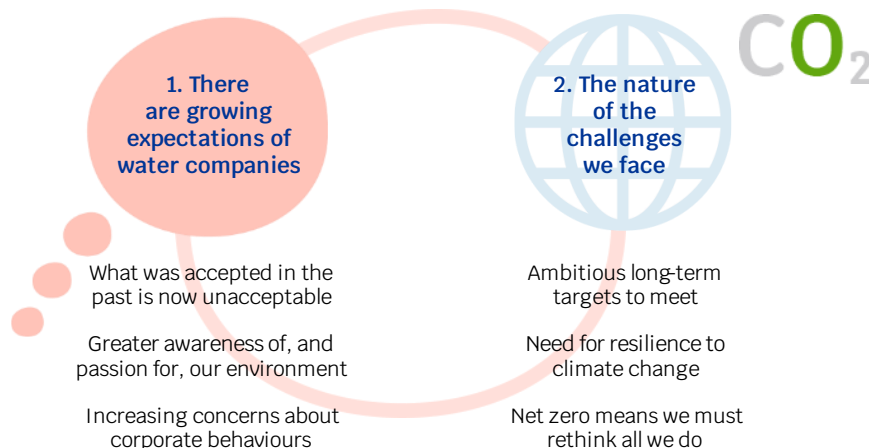


I recently noticed a social media campaign where women posted pictures of themselves when they were very young girls and explained how they had grown and developed their skills and beliefs over time. The intention was to inspire girls to be true to themselves and to know they can grow and develop even in the face of challenges and uncertainty. Now, I'm not a big 'sharer', so – don't worry – I'm not going to give you my story! But the images helped me think about how I could explain to you how I see Ofwat:

- When we were young, at the time of privatisation, maybe we were a bit like some of those little girls, keeping their heads down, dealing with the immediate tasks that they had to overcome – whether that be just getting through school, or dealing with challenging circumstances that didn't leave time for anything else really. When Ofwat started out, we knew that the overwhelming task was to invest, invest, invest. In 1989, [capital investment in the sector](#) was lower than in the mid-1970s, with some areas experiencing frequent sewer collapses and corroded water mains. So, we kept our heads down and focused on the immediate task – we largely concentrated on what specific investments companies needed to deliver and the efficient costs required to enable them. Indeed, the sector was unique among privatised industries, in that privatisation was followed by a significant capital spending programme that was designed to remedy past underinvestment.
- But the world has moved on, and we've addressed many of the problems of the past. Just like those little girls grew up, as a regulator we grew. We reflected on the changes we'd helped bring about, including much-improved outcomes. Today, customers are eight times less likely to experience sewer flooding, low pressure is far less of an issue, and it's become extraordinarily rare for drinking water to fail quality tests. And that is partly thanks to a doubling of the rate of investment compared to pre-privatisation.
- So we were able to gradually build on what we'd learned and refocus our efforts. Of course, securing a steady stream of investment into the sector remained a key task, but once the initial problems were overcome, the imperative was no longer to direct it at addressing historic underinvestment, but to meet ever-growing future challenges. This was recently reflected at PR19 in the form of the largest enhancement package we have ever allowed – a total of 13 billion pounds, with a further 3 billion pounds allowed this year through the green recovery.
- And now we have to address the current challenges facing the sector. Like those women posting pictures, I think that the experience we – and the sector – have built up should give us confidence. Water companies have already shown they can deliver quite dramatic improvements over the course of three decades, and the challenge now is to do so again, albeit in different ways.
- It's not that we have all the answers about what we need to do. But I think we have the maturity now to deal with the uncertainty ahead, and to continue evolving our role to deliver the best outcomes for customers, communities and the environment.

Ofwat's journey: evolving who we are

Two key factors should drive how we adapt our regulation



Improving life through water | Gwella bywyd drwy ddŵr | 3

So what do we need to do now? How do we use our experience – and that of the sector – to deliver against our current challenges?

We need to respond to the expectations on water companies today:

- Some of these expectations have grown precisely because the sector is in a better place than it was at privatisation – customers would no longer tolerate the service that was accepted in the seventies. We of course need to build on the improvements that have already been delivered.
- But there are also very real concerns across society around the impacts that water companies have. For example, [83% of Britons](#) say they are concerned about sewage pollution.
- And, in recent years, concerns have increased around corporate behaviours like high dividends and high executive remuneration. The industry's legitimacy has been hampered by concerns that some owners have run water companies as a financial asset, rather than an essential public service provider.

As public concerns change over time, Ofwat needs to adapt accordingly. We must look more broadly at issues so we can drive the sector to maximise the value it can deliver. And by that, I mean looking at the benefits to wider society, including health, economic and environmental benefits, that companies can create through their core services.

The other main factor driving Ofwat's future evolution, alongside the growth of these wider issues, is the different nature of the challenges ahead to the ones we have faced before:

- Compared to previous decades, water companies now have a wealth of ambitious long-term targets to meet, on leakage, per capita consumption and reducing river pollution.
- This also includes the drive to significantly improve resilience to drought over the next 30 years. Although England and Wales have thankfully avoided major supply problems in recent years, right now several countries, from the US to the Middle East, are facing severe climate-induced shortages. We can't afford to be complacent, or frankly that scarcity will catch up with us too.
- Most fundamentally, the journey to net zero means we all have no choice but to think very carefully about what types of interventions we make to improve services and the environment. In fact, reaching net zero will entail nothing less than a wholesale transformation in how companies solve problems.

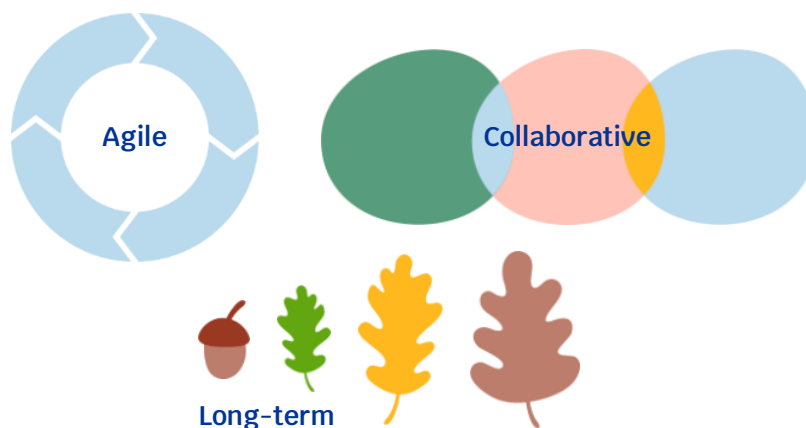
Taken together, these challenges mean the rate of improvement in some areas needs to accelerate considerably, but that many of the solutions we've used to get where we are now are effectively no longer available to us.

Compounding all this is the challenge to maintain affordable bills for current and future customers.

So expectations are growing wider, and the challenges ahead require a transformation.

Regulating for the future

Ofwat's regulation needs to be:



What does all this mean for Ofwat? That's the million-dollar question. Or, if the remit of this talk is what we need to do up to 2050, it's a question worth hundreds of billions more than that.

I said I wanted to paint you a picture of who we are as a regulator. But that picture is a moving one – an installation that adapts and changes around its audience rather than a picture in a frame maybe!

The challenges we face require us to continue to evolve the type of regulator we are. One that embraces the more complex landscape before us, the increasing number of stakeholders, the spread of customer needs and wants, and the more intractable nature of some of the problems ahead.

To me, this means Ofwat should continue to develop in three main ways:

First, through an agile approach to regulation.

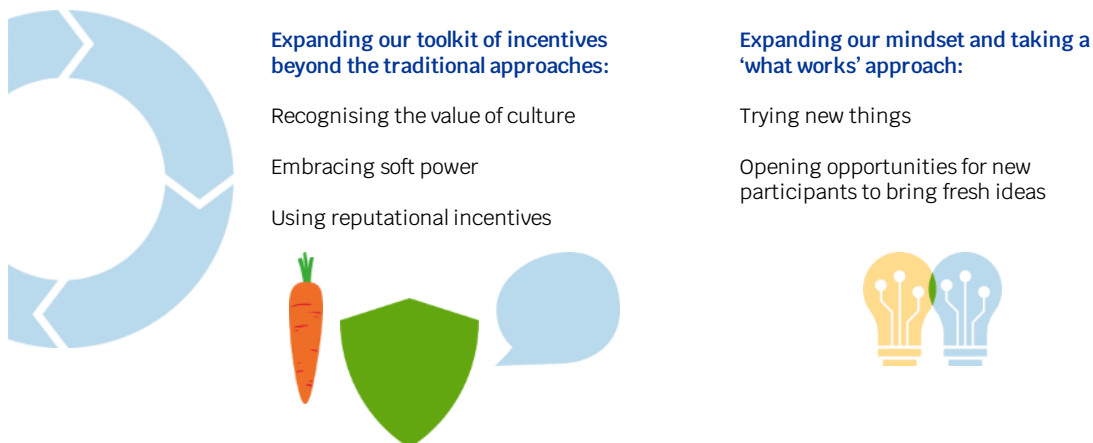
Second, by taking a collaborative approach to achieving collective goals.

And third, we need a stronger focus on delivering long-term outcomes.

1. A more agile approach

An agile approach

The growing challenges and complexities demand a more agile regulator



Let's start on the first of those shifts. Ofwat must become more and more agile: a regulator that plans for the future – but can think on its feet. The broader and more complex regulatory environment, together with the challenges and opportunities ahead of us, means there is no other choice.

Let me illustrate what I think this means in practice. I often think back to when the pandemic hit us in March last year, and how it showed the value of being agile in the face of dramatic challenges.

Now, without exception, water companies and their staff responded commendably to that immediate crisis. We saw real professionalism and collaborative spirit to support customers and keep core services running, in the face of appalling developments.

But it also created dilemmas for how Ofwat should respond to something so unprecedented and unpredictable.

There were fears widely expressed that the pandemic had made some targets set at PR19 impossible to reach and that we needed to make early adjustments. And in the business retail market, we saw demand fall sharply, threatening the liquidity of retailers.

In the event, we intervened where necessary to act at speed – to support retailers against immediate financial pressures, and quickly calling on companies to work together and support vulnerable customers. In other areas, we waited to see how things panned out; working closely with the industry to establish the immediate impacts and delaying any decisions about whether adjustments are needed until we've better information in front of us.

Within that response was a microcosm of what modern economic regulation needs to involve: collaborating with companies and stakeholders, engaging across the industry, monitoring the right data, and acting on the basis of accumulated evidence.

And, while we're not out of the woods yet, I'm pleased that several companies have since continued to outperform their commitments to customers. Some are now set to deliver millions of pounds worth of green recovery projects, on top of their PR19 commitments.

What that shows, to me, is that economic regulation can't be dogmatic. Even in the heat of the moment, it should be laser-focused on getting the right result for customers. An agile regulator steps back, considers its aims, and selects the right tool for the job, deploying it at the right time.

Expanding our tools

And in recent years, Ofwat has expanded its repertoire of tools. Alongside more traditional regulatory incentives, which continue to be central to what we do, we've increasingly appreciated that different types of approaches can drive the right behaviours.

One key recent development in our regulation is really recognising the importance of culture. Company culture can be the driving factor in allowing innovative and purpose-driven thinking to flourish or perish. We introduced our Board leadership, transparency and governance

principles with the idea that company Boards should lead with their purpose and values at the forefront of everything they do. And actually, that it's very much within the remit of an economic regulator to take an interest in that culture, because it genuinely affects the outcomes that customers and society experience.

Another aspect we have sought to capitalise on, is that regulators do have a certain amount of soft power within their industries, and – channelled in the right way – that can drive behaviours. Through our campaigning efforts, we've sought to encourage discussion – throughout the sector and beyond – on issues we've considered had fallen under the radar. Our Listen Care Share project, for example, has shone a spotlight on the pandemic's impact on customers' lives, not just financially but also emotionally, and how companies can step up the support they offer. It's important that we use our voice to drive better outcomes, especially to signal where we think the sector needs to step up, like companies' response to major weather events, or reducing harm from storm overflows.

And because people in the sector care about the impact they have on customers' lives, reputational incentives have a role to play, whether operated separately or together with financial incentives. Frankly, no company wants to be bottom of the list, and the prestige of first place carries a lot of weight. Since PR09, we've used a comparative performance assessment to incentivise improvements in customer satisfaction, and we have since seen the companies within the lower reaches of the rankings improve their scores dramatically.

Expanding our mindset

But I don't think it's just about expanding your toolkit of incentives, it's also about opening up and trying new things.

Earlier, I talked about how the key challenge for Ofwat upon its formation was to attract investment into the sector. That challenge very much remains, and in recent years we've pushed forward with new financing models to leverage investment from a wider range of sources – creating efficiencies and wider benefits in turn. This includes finding ways to introduce market mechanisms effectively into monopolistic elements of the value chain.

Let me give a very big example. Right now, the largest infrastructure project delivered by the sector since privatisation is under construction. Thames Tideway Tunnel, once completed, will be longer than a half-marathon and as deep as Lake Windermere. What's similarly unusual are the regulatory frameworks that enable it. Instead of Thames Water delivering the project, as would be conventional, it's being financed by an independent provider.

As the project came about, we'd calculated that the impact on bills for Thames customers would be as much as 80 pounds per year in the worst-case scenario. Appreciating the unprecedented size of the investment, we opened up the financing and delivery to a competitive bidding process.

This was the first time that the cost of capital had been set in this way. In some senses it was a gamble, but one that's paid off. By the middle of this decade, we estimate the impact on customers will be two-thirds lower than previously forecast.

The benefits of taking the plunge and attempting new financing approaches will not only be felt by Thames Water customers. Learning from our experience, we extended the principle of competitive tender at PR19, through what's known as direct procurement for customers. This will see more large infrastructure projects delivered or financed by third parties, with three projects worth over 1.2 billion pounds likely to enter procurement over the next year.

The possibilities are there for new participants to bring fresh ideas to delivering key projects, and to lower whole-life costs. The regulator can, and should, play an active role in scouting out those opportunities for the sector, whether through market competition or otherwise.

Developing a more agile approach in future

Becoming more agile

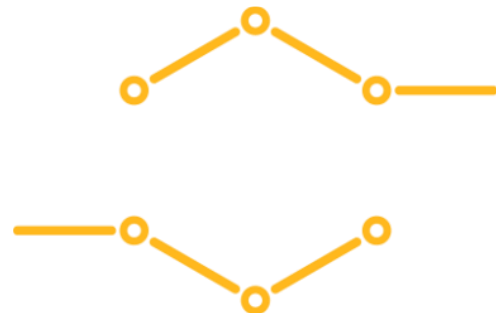
Embracing the opportunities to drive improvements



Using data more smartly:

How we regulate

Open data across the sector



Going forward, the opportunities are there for Ofwat to become more agile, and to respond quickly to a fast-changing environment.

Finding ways to make our regulatory processes more efficient can open up the space for innovation.

One example is that we have increasingly used data more smartly. Over time, our regulation has focused more on maximising the benefits of comparative competition, rather than

prescribing inputs or outputs to be delivered. We regulate 17 water companies whose operations and activities can be meaningfully benchmarked against each other. This creates great opportunities to reveal information about efficient costs and levels of service.

Our introduction of the outcomes framework at PR14 exploited these opportunities more fully. At PR19 we based our framework more heavily on common, and therefore comparable, performance commitments, and we've proposed to move further in that direction at PR24. The clear success of the framework, including significant falls in supply interruptions, pollution incidents and water quality contacts, enabled us to commit to it in the long term.

This gives companies confidence to plan for the future, but also means the process of setting service levels can become more and more efficient as the framework matures and our data capabilities improve. This applies equally to assessment of costs, where we have increasing confidence in the ability of our econometric models to reveal the right level of efficient expenditure. In short, there is good reason to think that the way we set the revenue and service package is in many ways stabilising and becoming less resource-intensive, therefore creating additional space for us to try new things elsewhere.

And there are considerable opportunities on the horizon to harness the power of data across the whole sector to improve outcomes.

In particular, [open data](#) offers untapped potential to improve efficiencies, build transparency and trust, and facilitate collaboration and innovation across the sector. This could mean, over time, most company data would be available publicly as a matter of course.

We expect companies to prioritise the delivery of open data over the next twelve months – to develop the right infrastructure, capabilities and skills, to build a strong data culture, and to work together to collect, share and use data.

The sector is still at the start of that journey, but we can see some of the benefits already. The group Surfers Against Sewage, for example, uses open data from the Environment Agency and water companies to provide real-time information on bathing water safety. This sort of innovation is good news for Ofwat, and ultimately for customers, as it makes data more accessible and encourages useful public scrutiny of what water companies do.

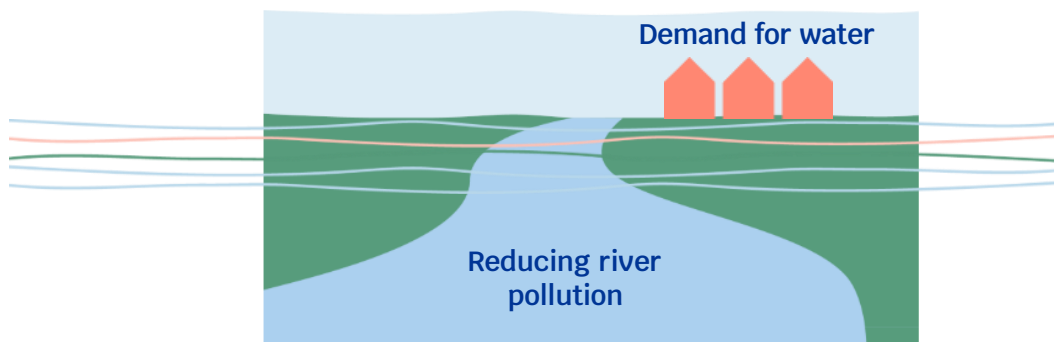
So from a regulatory point of view, open data could represent an effective but non-intrusive way of incentivising better outcomes.

As technology moves on, major events hit, customer expectations increase and the key challenges evolve, Ofwat will keep on adapting in the interests of customers, communities and the environment. We must continue to deploy all the tools at our disposal, try new things and embrace innovative ways to deliver better outcomes.

2. A more collaborative approach

A collaborative approach

Some of the most pressing issues cannot be solved alone



Improving life through water | Gwella bywyd drwy ddŵr | 7

The second main way in which Ofwat has evolved is to appreciate that, even though water surrounds everything we do, we can't afford to be an island. We must take a collaborative approach to common goals.

Looking at some of the most pressing issues in the sector, it's clear they are ones that cannot be meaningfully solved by a single regulator, company, or even an industry.

To give two key examples:

Firstly, water companies play a significant role in encouraging consumers to reduce their consumption of water. But water companies are working within the wider context where demand is also affected by the weather, the availability and desirability of different consumer goods and technologies, as well as the parameters set by building and product regulations.

Secondly, the water sector is responsible for about 36% of the pollution into water bodies in England, with other types of industrial pollution contributing to more. The sector therefore has a huge role to play to improve the quality of our rivers and other water bodies, but merely eliminating the water sector's impact would not achieve the overall outcome we all want, which is a thriving water environment.

In both cases, comprehensive solutions will only arise from a joined-up approach.

Towards co-ordinated regulation

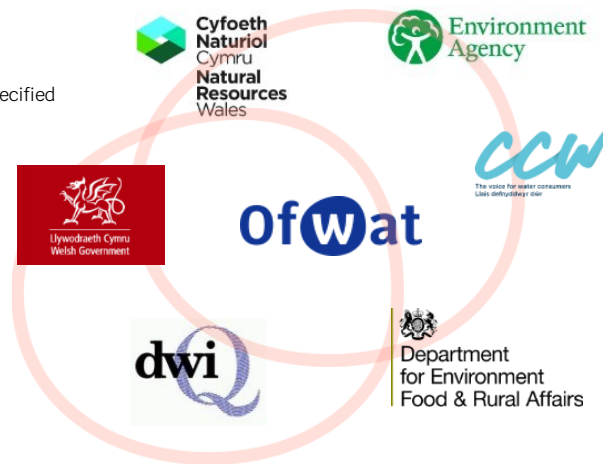
Co-ordinated regulation of the sector

Water regulation is an ecosystem:

Economic, environmental, quality

Over 70% of enhancement spending was specified by environmental regulators at PR19

There are huge gains to be made from co-ordinating efforts



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When you survey the landscape of water regulation in England and Wales, a similar dynamic emerges. A passing observer might assume, perhaps just from our name, that Ofwat is essentially in charge of what the water sector does. But we've always operated within an ecosystem of regulation, alongside environmental and quality regulators. So a very rough calculation might have us contributing a third of water regulation.

From Ofwat's perspective, there are therefore significant gains to be made from co-ordinating our efforts with other regulators, pooling our expertise and maximising value for customers and the environment.

Let me give an important example. Many will associate Ofwat above all with the price review, but some may not be aware that the majority of enhancement costs we allow are actually specified by other regulators, with Ofwat only taking a view on what represents efficient expenditure. In fact, at PR19, environmental regulators specified around 70% of all enhancement spending.

The Water Industry National Environment Programme, or WINEP, alone contributes to nearly 5 billion pounds of enhancement spending in the current period. Yet, unlike how investments are determined elsewhere in our regime, the WINEP has up to now focused on prescribing individual actions that companies need to carry out, rather than outcomes that must be met.

Now, there's increasing evidence that our move to an outcomes-based regime at PR14 has improved performance in several areas. For example, our recent asset management maturity assessment found a strong correlation between areas that are financially incentivised under our regime, and areas that receive the most attention from company management.

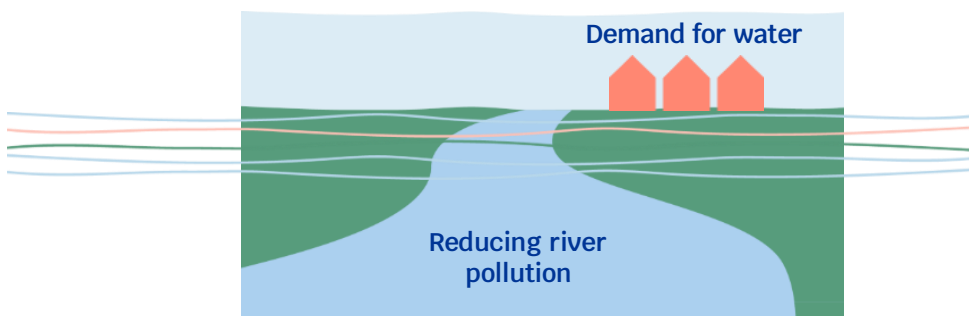
Yet, because of how the WINEP operates, the full benefits of outcomes-based regulation haven't necessarily been realised across all the ambitions for the environment in the way that they have on the customer service side of what we do. It's high time to extend those benefits to how companies improve the environment. The only way to do that is to collaborate more closely, and in the last year, we have worked with government, regulators, companies and NGOs to shift WINEP towards an outcomes-based programme. Companies will benefit from the freedom to deliver wider value by approaching solutions from a systems-thinking angle, rather than resorting to piecemeal interventions.

I have every confidence that this collaborative approach represents the way forward for water regulation in a range of areas. This year, the green recovery initiative showed that regulators really can work effectively and at pace to deliver wider value. Working closely with the Environment Agency, the Drinking Water Inspectorate, the Consumer Council for Water, and the UK government, we drew on our collective expertise to assess and pass through nearly 3 billion pounds of new environmental investment to help the country build back greener from the pandemic.

The establishment of RAPID, alongside the Environment Agency and the Drinking Water Inspectorate, is another prime example. RAPID was established to help facilitate the development and funding of new large scale strategic water supply options. Prior to RAPID, the regulators were concerned at the slow pace of decision making by companies to deliver the necessary solutions to ensure long-term drought resilience. But through its efforts to join up regulatory frameworks, RAPID has sparked the potential for more creative strategic solutions, including water transfers between regions and greater use of joint infrastructure.

Back to those tricky issues

Water regulators can lead the way together in search of solutions



Going back to those tricky issues I mentioned earlier of improving environmental water quality and reducing demand for water. Water regulators have a part to play together in search of collective solutions.

I understand the public concern about the role of storm overflows in our drainage system, and the public rightly expect to see a step-change in culture and commitment from companies. Since last year, we've contributed to the storm overflows taskforce, working with government, regulators and the industry on the shared goal to eliminate harm from overflows. Collectively we've [secured commitments](#) from companies to publish real-time data from bathing sites, install monitoring devices on all overflows, and release annual data to track progress – without any impact on customer bills. This is in addition to 1.1 billion pounds of investment through PR19 and more through the green recovery. But another advantage of the taskforce is that we can discuss what action needs to be taken elsewhere – because agriculture and wider industry are very much part of the solution.

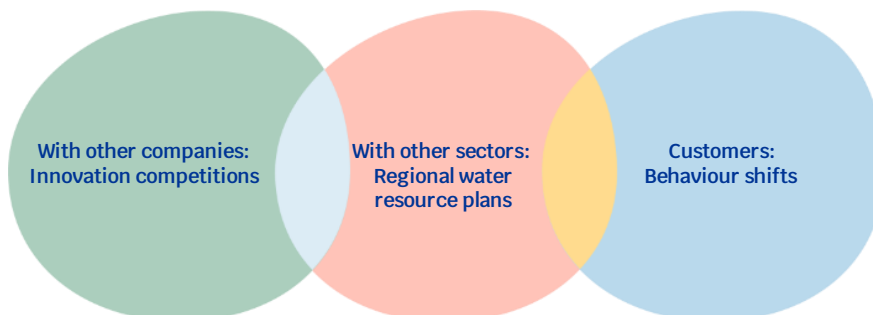
That reasoning is why we've also joined the [Future Homes Taskforce](#), alongside the construction and other industries, to support greater water efficiency. The Taskforce's [Delivery Plan](#) takes a much-needed holistic approach to the issue, highlighting the pressing need for targets on water use during construction, and for new homes to be more water efficient. We'll continue working to keep water efficiency high on the agenda.

The drive towards a more co-ordinated future in water regulation started a long time ago, but it has accelerated in recent years. That trajectory will need to continue if we're to maximise the value of what we do.

Increasing collaboration across the sector

Collaborating where it matters

The sector's steps towards a more joined -up future



So what about the sector itself? Within economic regulation, some argue that there's a conflict between comparative competition and collaboration between companies. But there's no reason to think the regulatory model precludes companies from working together.

In competitive markets, firms frequently collaborate where there are shared interests. In the motor industry, established companies like Ford and Volkswagen have worked together to develop the technology for electric vehicles. In tech, Samsung is a competitor to Apple as well as a major supplier.

The reality is that many of the barriers to creating value through collaboration are cultural in nature, so they can be overcome without scrapping the very effective foundations of comparative competition.

To help kickstart the transition to a more collaborative industry, we introduced a series of innovation competitions at PR19. The winners of our first Water Breakthrough Challenge include 12 companies working with environmental stakeholders to revolutionise data on river quality. We'll also see Affinity Water working with smaller water companies to fit water-saving devices in customers' homes, offsetting increases in demand from local housing developments.

Our hope is that these innovations create lasting impacts, not only to solve the most pressing problems, but to foster a genuinely collaborative culture going forward.

And there are other promising signs that the industry is taking steps towards a more joined-up future. For the first time, regional water resource plans are being drawn up. Crucially, these plans are being developed with all significant water users, not just water companies and their customers. So we expect more multi-sector solutions to emerge, including working together on reducing demand for water.

I could go on, but suffice to say, there are countless green shoots of collaboration springing up, and that needs to continue. I must emphasise that if we are to achieve the outcomes we need to, the burgeoning growth of collaboration across the industry must extend to how companies interact with their customers.

Customers, consumers, citizens –and partners

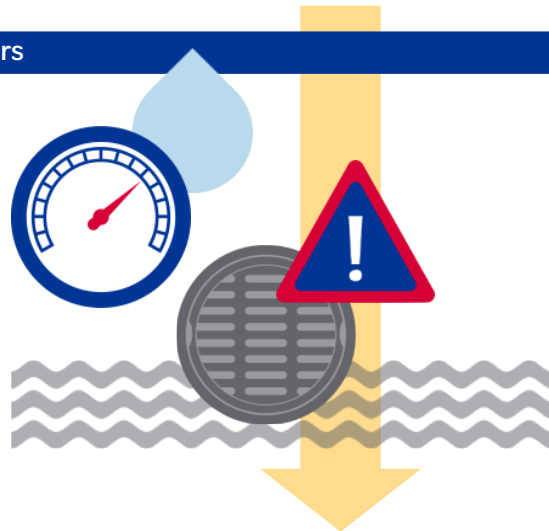
We need to see a massive behavioural shift

Driving down consumption of water

Reducing blockages in the wastewater network

Progress is possible, but only through concerted action:

1. Awareness
2. Connection
3. Information
4. Simplicity
5. Trust



Companies and their customers often have too much of a one-way relationship. We should all recognise that customers are not just the recipients of water and wastewater services: they are also consumers, and citizens. They are active, not passive, and their behaviour is critical to what companies can achieve.

Let me be clear that we need to see a massive consumer behavioural shift over the next few decades. In terms of the water sector, this means driving down consumption of water. It also means reducing blockages in the wastewater network.

Looking abroad, real progress has already been made – we just need to catch up. In Belgium, per capita consumption [is over 40 litres per day lower](#) than in England and Wales. Multiple studies [have found](#) Britons are the biggest culprits in Europe for putting 'unflushables' down the loo – in one ranking, Britain topped a list of 44 countries around the world.

Reducing our water consumption and improving our flushing behaviours is therefore eminently possible. But it will take concerted action to help consumers do the right thing – and I think companies should focus on five key areas:

One – increasing awareness. In one survey, [about a fifth of people](#) in Britain who said they don't try and save water simply hadn't thought about saving water before.

Two - forging an emotional connection between changing behaviour and doing good.

[Research by Natural England](#) has shown that connectedness to nature is strongly associated with pro-environmental behaviours. Let's get people connected to water.

Three - providing the information that customers need to make changes in their lives. [Nearly half of people in Britain](#) think their household uses less than 20 litres of water per day, when in reality, the average figure is over seven times higher.

Four, making these changes easy. Customers face pressures on their time, and how to do the right thing isn't always clear. The sector has made good progress in engaging with manufacturers to develop the 'Fine to Flush' label for wet wipes that don't cause blockages. The use of nudges and signals can be powerful steps to drive changes in behaviour.

Lastly, a genuinely reciprocal relationship means customers need to trust that companies are playing their part too. Let's be honest: if a company's performing poorly on pollution incidents or leakage, it can seem a bit hypocritical when it asks its customers to do the right thing.

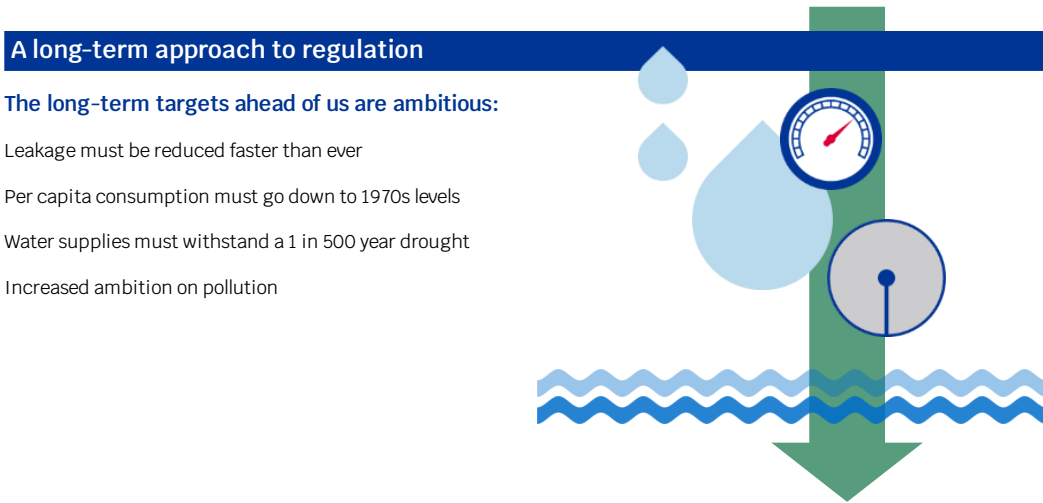
More than anything, water companies need to get out into their communities and lead the change.

And some are. I've been particularly impressed by Anglian Water's efforts in Newmarket to build what it calls 'the water company of the future'. It has used various approaches to reduce demand, including smart metering, community engagement and rewards for customers who save water. The project aims to drive down daily consumption to just 80 litres.

It's ambitious, but it can be done.

And it must be done. Andrew Carnegie once said of teamwork, 'It is the fuel that allows common people to attain uncommon results'. If we're to meet the challenges the sector faces, we need to forge stronger alliances in the pursuit of common solutions. Because we know that partnerships can deliver far more than the sum of their parts - in short, they create value, and that's ultimately what drives us as a regulator.

3. A longer-term approach



The third change required is possibly the most fundamental shift both we and the sector need to make as we look towards the next 30 years and beyond. That is, to focus considerably more on long-term outcomes, and to make the changes necessary to achieve them.

And make no mistake, those changes will be transformational. Because, let me put into context the real ambition of some of the long-term targets that companies need to meet.

In 2050, leakage needs to be half what it was in 2018. This rate of reduction has not even been achieved from privatisation to the present day, and arguably the improvements made over that period were the 'low hanging fruit'. So companies must find ways to stop ever-trickier leaks.

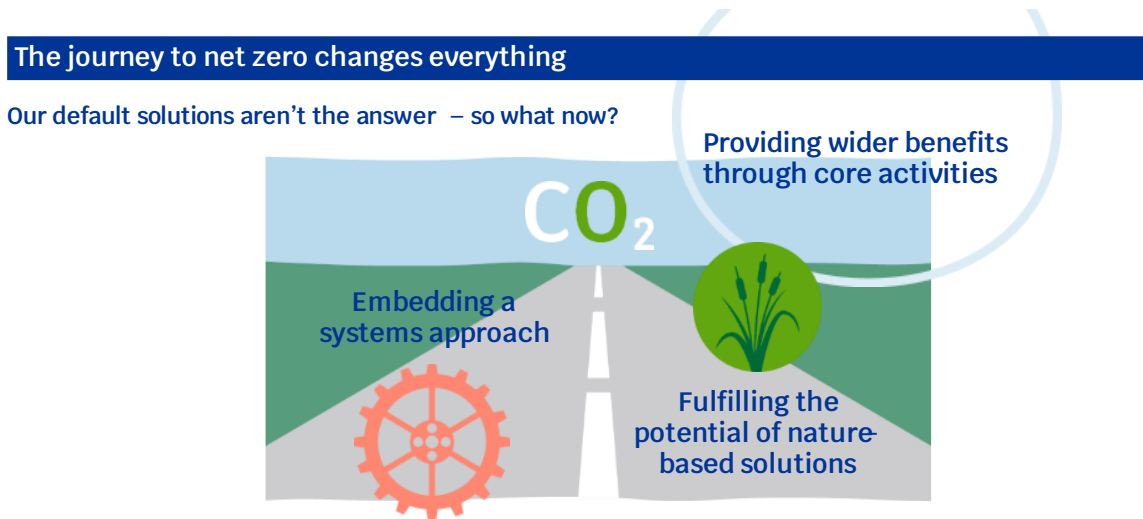
Also in 2050, per capita consumption needs to be about 21% lower than now. That level was last met [in the early 1970s](#). But since then, consumer habits have changed significantly, with more people often using water-thirsty gadgets like power showers and washing machines.

In 16 years' time, companies need to increase supply resilience to withstand a drought event so severe it only occurs once every 500 years. Reducing leakage and demand will contribute to this standard, but new supplies and transfer arrangements will also need to be developed, particularly as, at the same time, companies will be tasked with reducing abstraction from environmentally sensitive sites like chalk streams.

And – while not yet passed at the time of recording this – we expect the Environment Bill will set out further target areas including a strong focus on reducing wastewater pollutions.

Net zero changes everything

Collectively, these targets represent a significant challenge for the industry. But that's not all – we are missing a key part of the puzzle.



The journey to net zero by 2050 changes **everything**.

It effectively rules out what has historically been the sector's default response to a problem: that is to simply expand infrastructure to meet growing demand by pouring more concrete and buying in more steel. That's not to blame the sector – in the past, our regime has incentivised companies, albeit not intentionally, to prioritise large capex programmes over opex solutions. Both us and the sector must work to find the right solutions going forward.

But I'm positive about this. Because, apart from being a good thing in itself, the urgency with which we must reduce emissions also provides an impetus to consider a wider range of solutions which can actually be more efficient in the long term, while providing wider benefits to society and the environment.

To drive that transformation, the importance of a systems thinking mindset at all levels of the business can hardly be overstated. A good example is storm overflows, which is not a problem we can simply build our way out of.

So at the heart of this shift must be holistic nature-based solutions. And while not the only options, they are key and should work alongside customer engagement and, where necessary, traditional infrastructure to deliver outcomes.

Over the most recent price reviews, water companies have made gradual progress to embrace nature-based solutions, recognising their whole-life benefits. This has been reflected in the increasing numbers of proposals we have received for schemes. At PR19, we were able to fund twelve hundred catchment management schemes over five years.

But we thought those proposals only scratched the surface of what's possible. Severn Trent [has estimated](#) that for every pound it spends on reducing agricultural run-off through catchment management schemes, it can save between 2 and 20 pounds on treatment costs and generate 4 pounds in environmental benefits. The potential is huge.

So it may fairly be asked why more progress hasn't yet been made, given that we know catchment and nature-based solutions often provide better solutions. With the urgent challenge of net zero, we need to see a step change at PR24. Overall, I think there are four main factors that have stunted their development at times and that the whole sector, including Ofwat, needs to address going forward.

The first I have already mentioned in part, which is that historically there has been a cultural bias towards traditional infrastructure both in our regulation and across the sector.

We're considering how we might remove any remaining capex bias in the regime, whether that is cultural or more built-in. While our move to a totex and outcomes framework has significantly alleviated this issue, there's more to do to increase the flexibility of the regime, including the ongoing reform of the WINEP, as I discussed earlier.

A second reason is that most nature-based solutions provide benefits that go beyond meeting what has traditionally been seen as the core water company responsibilities.

Compare the options to purify our drinking water. On one hand, a natural water treatment plant removes unwanted chemicals, improves river quality, and contributes to a wildlife-rich environment for communities to enjoy. In comparison, the standard solution would be chemical-heavy and carbon-intensive.

Which solution is preferred ultimately depends on how each is valued. We considered the wider impacts of schemes at PR19, but there was significant variation in valuations across companies. Ahead of PR24, we need companies to work together to improve the comparability of those estimates.

Thirdly, nature-based solutions require coordination on a scale that traditional solutions don't usually require. Initiatives like the Sustainable Landscapes Humber Project, a collaboration between Yorkshire Water and Birds Eye, rely on the recognition of mutual benefits – in this case, carbon sequestration, reduction of flood risk, and more efficient crop production. But projects like these depend on bringing those interests together to generate collective benefits. That can take time.

The sector **is** developing ways to make this process more efficient. Wessex Water, for example, uses online markets to connect farmers with those who want to buy environmental services. The early evidence suggests companies could make substantial cost savings through environmental markets, compared to procuring conventional solutions.

And Ofwat must play its own role in facilitating partnership working, supporting companies who work with others to deliver common goals, while ensuring third parties pick up their fair share of the costs. Our green recovery exercise this year saw several partnership schemes go forward, and we expect learnings from that process to inform our approach for PR24.

Finally, if we're to maximise the potential that nature-based solutions offer, it's imperative there is a stronger focus on the long term than before. Nature-based solutions are not quick fixes; sometimes the advertised benefits don't emerge for years, and often the magnitude of those benefits is uncertain. A fixation on what needs to be done to meet five-year performance commitments is therefore completely unsustainable.

Planning for the long term

Approaching the next 30 years, intelligently

Long-term direction

But:

An uncertain idea of what the future looks like

A number of balances to strike

**The question for PR24 and beyond:
What is the best way to meet long-term
outcomes, given the uncertainties
and trade-offs?**

Long-term strategies

Adaptive planning



Improving life through water | Gwella bywyd drwy ddŵr | 14

I want to end on how we can fundamentally change our focus, towards the next few decades rather than the next few years. We must approach the next 30 years intelligently and honestly, and we must approach it together.

That's hardly an easy task, so where to start? For one, I think it's helpful that governments are increasingly recognising the value of long-term targets to drive change. Having targets in

place provides a consistent framework to plan against, allowing the sector to take a step back and consider the best way to meet key outcomes in the timescales we have. They also provide a clearer way of reflecting the views of citizens in our regulation.

We're currently anticipating the updated strategic policy statements from the UK and Welsh Governments, which set out expectations for how Ofwat should act. But already the draft statement from the UK Government emphasises the importance of shifting the sector towards long-term adaptive planning. And we agree that a more explicit focus in the price review on what companies need to do to achieve long-term outcomes, including government targets, would represent a step forward.

To enable that focus, we've set out that, from PR24 onwards, companies should present their five-year business plans in the context of a **long-term strategy**. These strategies should provide the necessary information to explore how far the five-year plan is the right one to meet long-term objectives and targets.

In Wales, companies will develop their strategies collaboratively with Welsh Government and stakeholders, so while we don't have as many long-term targets in Wales as we do in England, the collaborative process will help the long-term strategies align with policy directions.

There are two main reasons why meeting long-term goals requires long-term strategies. One is that we have at best a blurry picture of what the future looks like. Long-term projections for drivers like demand and population growth are no more than educated guesses. We have little idea what technological developments the future holds and how they may bring down the costs of activities like decarbonisation and leakage detection. These uncertainties have implications for what investments we should make in the next five years.

The other reason is that we face significant long-term trade-offs. The long-term challenges we face are likely to require some extra costs to meet them, but there's also a significant affordability challenge. As it stands, [a third of people](#) struggle to pay their household bills at least some of the time. We don't know how that will change, but it could get worse. Recently the explosion in energy prices has threatened to drive more people below the poverty line.

The main question we should be asking ourselves at the next price review and beyond, is: what is the best way to meet long-term outcomes, given firstly, the wealth of future uncertainties ahead of us, and secondly, the need to protect current and future customers?

This is about moving on the conversation at price reviews to focus on that question.

It's about accepting investment will be needed - sequencing those investments appropriately. And we need companies to help conduct that conversation - including by embracing **adaptive planning** in their long-term strategies.

Adaptive planning allows companies to mark out the points in future at which different solutions would need to be adopted if certain factors came to pass. That could be because of a higher long-term temperature rise than previously assumed, or that the population grows more slowly than anticipated. So it aims to ensure that the right actions are taken at the right time, therefore avoiding underinvestment, while achieving best value.

Adaptive planning has largely been pioneered in other sectors, particularly to manage flood risk. Gradually, the water sector is coming to appreciate its potential benefits. Some companies started to develop adaptive plans for the last round of Water Resource Management Plans, and the next round of regional and company plans promises a much bigger step into an adaptive future.

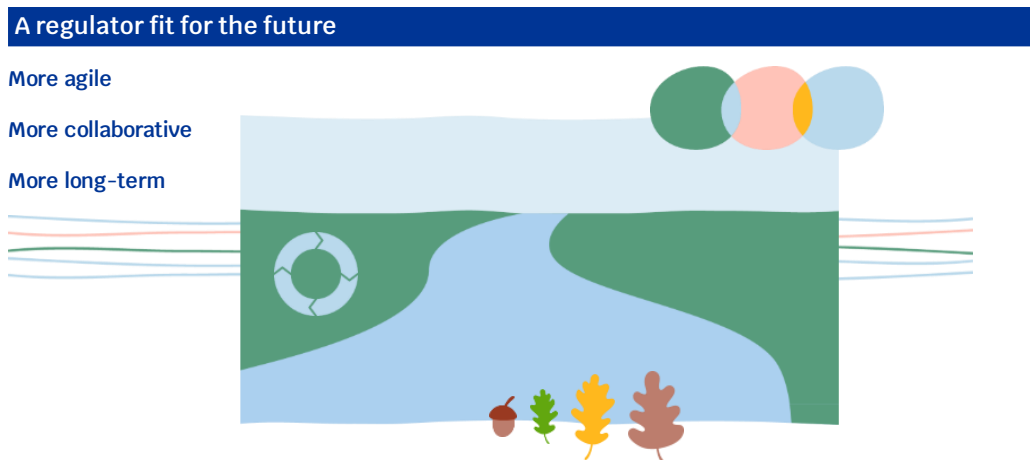
Visualising what the next 25 years may look like helps to reorient the conversation towards the future. It means we start to discuss what courses of action are likely to enable the best-value solutions over the long term. In some cases, the proposed investment will clearly be needed as soon as possible; in others, it may be better to wait until some of the uncertainties start to subside. We may generate new options through investigatory activities or allow partial solutions where necessary.

I've been pleased to see a positive response from the sector so far. But to really focus the price review on long-term outcomes, I want to emphasise that a long-term strategy cannot be just another regulatory document. It's in everyone's interests for us all to work together to find a path forward, and for companies to own their strategies for decades to come.

Looking at the sheer ambition of the long-term targets and the transformative changes required by the net zero challenge, the idea of carrying on as usual seems unthinkable. The price review needs to be a more effective enabler of long-term objectives and new ways of working.

But that'll only happen if we're all prepared to shift the dial, buy in to a new way of doing things, and have those constructive conversations about how we best meet the outcomes that matter to customers and communities.

Closing remarks



So, to sum up: while there's a way to go, I think Ofwat continues to mature to ensure that we stay fit for the future: more agile, more collaborative, more long term. Just like those women who posted the images of themselves as little girls have grown to deal with ever more complex challenges, we have matured and developed as we engage ever more closely with the wider systems in which we sit.

The wide-ranging challenges ahead of us – from slashing our net emissions to nothing, to bringing our rivers back to life, to building a sector that delivers on customers' expectations – require everyone in the industry, including Ofwat, to evolve our ways of thinking.

We will struggle to find the solutions to the sector's long-term challenges in textbooks. Where they will come from is a mindset that what works, works. Relying on the tried and tested won't be enough; a willingness to try new things, fresh solutions, creative partnerships, will.

The water sector is beginning to put that view of the world into practice. We need to continue on that transformation together.