



PR24 and beyond: is the
price review framework fit
for purpose?
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Introduction

I gave my first back in 2015 when I was Chief Executive of Ofwat¹. I gave my second back in 2018 when I was Director of Regulatory Affairs at BT Group². So when I was approached about doing another, I did ask myself whether I had anything interesting left to say...

Well, you will be the judge of that.

The title suggested to me for the lecture was 'Beyond PR24: is the price review framework fit for purpose'. I was just getting my head back into water regulation, I was absorbed in the Ofwat PR24 policy framework, and I was buzzing with thoughts about the price control, the cost models, the incentive framework, all the sort of things that I thought I would love to have the chance to talk about and discuss with the estimable Beesley audience.

But as I started to gather my thoughts, I reminded myself that regulation is always and everywhere a second order phenomenon. Nobody gets up in the morning desperate for regulation. But the need for regulation, its form and substance, reflects the difference between the state of the world today and the state of the world as we would wish it to be. Regulation is a tool kit, and the tools we use and how we use them must reflect what we are trying to achieve, as a society.

So I'm going to start off by considering what we are trying to achieve as a sector, and where we stand in terms of society's assessment of that. And then I will set out some thoughts on what could be done – first thinking about what could be done by companies (let's get our own house in order), then by government, and then by the regulator - to set this sector on a path to sustainable delivery for customers, communities and the environment.

Water: what is it (good) for?

When we look at the water sector, then, what are we trying to achieve?

There is certainly a palpable discontent with things water. I left Ofwat in 2018 and spent the intervening years looking after regulation for BT Group. Since returning to the industry last year, it struck me that frustration with the sector has tipped into anger.

This anger manifests itself in different ways. You would have had to be living in a hole this summer not have seen a vast array of headlines ranging from drought, to sewage in rivers and on beaches, dividends, ownership, executive pay. And to be clear, while some companies do better than others, this was a sector-wide onslaught.

But I think we have to look beyond the emotion and the different lightning rods that transmit anger into public debate, and find the root cause.

¹ Available at: <https://www.ofwat.gov.uk/publication/beesley-lecture-15-october-2015-the-evolution-of-the-regulatory-model-in-water-cathryn-ross-chief-executive/>

² Available at: <https://www.bt.com/content/dam/bt-plc/assets/documents/about-bt/policy-and-regulation/download-centre/2018/cathryn-ross-regulation-and-investment-in-telecoms.pdf>

I think that root cause is quite simple. Our water sector is not delivering on things that, as individuals and as a society, we believe are *fundamentally* important.

I can stand here all evening and reel off statistics about how much we have improved on this, increased that, reduced the other. Almost £200bn of private investment since privatisation, £2.5bn on improving bathing waters, two thirds of UK beaches now classed as excellent, leakage down by more than a third from its peak, customers 5 times less likely to suffer supply interruptions, 8 times less likely to suffer sewer flooding, 100 times less likely to have low water pressure, Europe-leading drinking water quality.

All of it's true.

But trumpeting all of this also misses the point. The point being that all of this is not enough. People are telling us – shouting at us – that we are falling short on things they care deeply about.

And that message, I think, is focussed around on two areas, the second having two dimensions.

Environmental stewardship

The first is stewardship of the environment. Perhaps I raise this first because, when I came back into the water sector in summer last year, it was precisely at a time when the issue of discharge of untreated sewage into rivers hit the headlines in a very visceral way. It was a bit of a wake up call for me.

To be clear, the fact that waste water companies discharge untreated sewage into rivers is not new news. And we don't do it because we sit in some palatial head office somewhere and decide on a whim to pull a giant lever that sends the sewage straight from the pipe, bypassing treatment, to dump it in the river.

By and large these discharges happen as a result of the sewage treatment system operating in the way it was designed to operate. Typically in this country – and this is the less fortunate legacy of Bazalgette's otherwise amazing and visionary creation of London's sewerage network – we combine drainage and sewerage. We mix rainwater with poo. In the Thames Water network for example, usually just under 50% of what passes through a sewage treatment works isn't sewage, it's rain. And this means that, when it rains a lot, the works are overwhelmed. And the network does what it was built to do. Which is, to avoid the sewage backing up through the sewers and ultimately into people's homes – the excess that the works does not have the capacity to treat – is discharged (with some minimal filtering) into a river.

I was going to say 'if you were starting with a blank sheet of paper, you wouldn't set the system up like that'. But then we are still building systems for new developments that look exactly like this. Why? Well they are definitely cheaper... at least at the point of development when these decisions get taken by the developers who bear that cost. Whether they are better value, in whole life cost terms, I'm doubtful. I will come back to this later.

The whole phenomenon is substantively worse now than it used to be.

In part, this is because we are getting more torrential rain than we used to. In part it is because companies (and it has to be said, their regulator) have allowed growth – population increase, new developments – to be accommodated by eating into the headroom that previously existed in the system (which might in pre-totex times have been seen as a classic manifestation of what regulatory economists call the Averch-Johnson effect).

And, in part, it is because rainwater and other stuff that shouldn't be in sewers does get into the sewers. Sometimes this is through leaky manhole covers. Sometimes through misconnections. I visited Cheshunt sewage treatment works a few weeks ago – one of our works with serious discharge issues - and heard how local people were proud to see some new EV charging points in Amersham town centre, but how the installation had resulted in piles being driven into the sewer which, of course, then filled up really quickly when it rained, making it even more likely that the works would be overwhelmed and discharge. That sort of things happens a lot more often than you might think.

And, at the same times as all this has been happening, many of us – especially through the pandemic – have become much more connected to our natural environment. We are much more conscious of it, more aware of the role it plays in nurturing us, our health and wellbeing. I think we, as a society, are now much less accepting of the environment being seen as a resource that humans have a right to exploit for their own benefit; we are much more aware of our interdependence with the environment and indeed of inter-generational inequality. Given that our water, all of it, comes from the environment and gets to us by virtue of flowing through the environment, this has very profound implications for us as water companies.

Service resilience: water supply

The second area in which the sector has fallen short is investment in resilience of the basic, essential services the sector provides – a reliable supply of wholesome drinking water and effective drainage. Each of these is especially challenged by a combination of population growth (and the nature of the development that accompanies it) and climate change. Let's talk first about the aspect of this that is probably most obvious to all of us right now: water supply.

We are in a drought. Not just any drought, but one of the worst, and we don't yet know but potentially *the* worst, for a century. We went into this drought with a speed that nobody I have spoken to – and that includes people who have been in the industry for 40 years - has ever seen before.

Speaking for Thames Water, in June our water resource position was very healthy. Our reservoirs were more than 90% full. We were looking at the weather forecast for July, noting that it could be quite warm, and we were glad that we had begun our water efficiency campaign at the end of May. To be prudent we set up a steering group to keep a close eye on the supply-demand balance and ensure we responded to any change quickly. We then experienced the driest July since 1885. No rainfall. None. And – you will remember this – at the end of the month we experienced the hottest summer temperatures on record. Not just the hottest temperature ever recorded in the UK – we recorded 40.3 degrees on 19 July - but with an extremely hot two week period, during which the Met Office issued its first ever 'red warning' for extreme heat (on 8 July). Across much of our area, demand increased by 50%, and by early

August we were mobilising the further stages of our drought plan, moving towards a temporary use ban – a hosepipe ban - which came into force introduced on 24 August.

The basic supply demand balance equation has not been helped by leakage. We absolutely recognise that we need to do more to tackle leakage. We have one of the most aggressive targets for leak reduction in the industry, targeting a 20.4% reduction between 2020 and 2025, and we hit those targets for the each of the first three years of the five year period. But during the drought we have had to run to stand still.

There is no doubt that we have had more problems with our pipes. The hot dry weather dried out the ground, causing pipes to crack and joints to rupture. We have more than 500 people – more than we have ever had – working day in and day out to find and fix leaks. We have leakage detection squads working literally through the night – because it is easier to see leaks when customer demand is lower. We are using innovative new technology to do some of that find and fix. And it is still hard yards.

But of some of that leakage number (maybe a third) is because the same thing happened to our customers' pipes, on their property – and those leaks are included in our calculations too. Some of it (maybe another third) was because people who are not on water meters increased their consumption above expected levels because, yes, our leakage figures include quite a bit of 'unmeasured consumption'. This isn't *leakage* at all – it is water that is actually being used but which is 'unaccounted for'. And of course as all our customers use more in hot, dry weather, customers without meters also use more, so our 'leakage' numbers will rise even if there are literally no more holes in pipes.

This definition, by the way, I don't think helps anyone.... Customers – understandably – think leakage is wastage. So when we ask them to use less water the idea that we 'waste' around a quarter of the water that goes into supply attracts a lot of criticism, and can undermine that critically important water efficiency message. It also brings criticism on our regulator too for not being tough enough on companies. But, of course, people don't understand that of that quarter of our water that is 'wasted' a third isn't wasted at all but is consumed (if not metered), and another third is wasted on customer's property. I'm not saying we shouldn't be incentivised to reduce all three types of 'leakage' but they don't have the same drivers, they lend themselves to different levers, and maybe it's time to stop lumping them all into one definition.

Enough about leakage.

My point here is twofold.

First, the current drought is serious and we don't know when we will come out of it. We do know that we will need a prolonged period of above average rainfall before lifting the hosepipe ban looks sensible. Second, instances of drought – like this and maybe worse – will only increase as climate change takes hold, and population levels grow. When we have been out and about on drought this summer we have found that people do genuinely understand that this summer has been exceptional. And they have taken steps to use water wisely and help ensure we can keep the taps flowing for everyone – we are very grateful for this. But there is no doubt that our customers don't love the fact that we've had to ask them to restrict their usage.

Equally, others – and I’m thinking particularly about those with an interest in the aquatic environment – are making a case that we should have imposed tougher restrictions earlier. If this becomes the norm, I think we – the sector, the regulator, the government – can expect a decrease in tolerance on both sides.

Service resilience: surface water flooding

It might be counter-intuitive but, alongside the drought, we also need to focus on flooding. Instead of the drizzle that our network was built for, we are seeing more torrential rainfall events. Not only is this unhelpful from a water resources perspective – hard rain bounces off dry ground, and doesn’t percolate through to replenish groundwater – but it also brings increased risk of flooding. And of course, if you go back to what I was saying earlier about the nature of our combined drainage and sewerage system, this is not only surface water flooding, which is bad enough, but also sewer flooding, which is worse.

The events in London last July were a classic example of what can happen. On two separate occasions, just 2 weeks apart, certain London boroughs experienced the kind of rainfall that is supposed to happen every less than once a century. On 12 July a whole month’s worth of rain fell in an hour and on 25 July a month’s worth of rain fell in just 2 hours³. And this wasn’t just a lot of rain in a short time, it was very localised.

It is also worth noting too, that it wasn’t exactly predicted. I say ‘wasn’t exactly’ because it is true that we had a Met Office yellow weather warning. But this (a) this covered the whole of the south east of England (b) we can get 60 of these in a month, and rarely does any severe weather actually materialise and (c) it was a yellow weather warning and this was ‘red’ weather. The Met Office’s ‘most likely’ scenario was for 20-30mm of rain with ‘low likelihood of medium impacts’. Not very helpful in terms of preparation, when in reality some areas experienced 80mm of rain, which is 170% of the July average *total* rainfall.

What happened in London last July has many parallels with the example I gave you earlier about discharge of untreated sewage in rivers.

Our network, our assets, did what they were supposed to do. Our waste water system operated within the tolerances it had been designed to and maintained to. The rain was truly torrential, and water flows down to the lowest point, which is usually our sewers. These filled up very quickly and started to back up into people’s homes, especially basements - not helped by a high tide in the Thames which had closed the valves through which the sewers normally discharge into the river when they are overwhelmed. More than 1000 properties were flooded (most – around three quarters - as a result of the 12 July storm).

As with the drought, people do understand that these events were genuinely exceptional – storms with a return period of 179 and 118 years respectively. Nevertheless, what many of those people who were affected by the storms experienced was truly awful - unacceptable.

³ Thames Water conducted and published an internal review of the July 2021 flooding, available at: <https://www.thameswater.co.uk/media-library/home/about-us/investing-in-our-region/flooding-review/july-flooding-internal-review.pdf> Thames Water also commissioned an independent expert group to undertake a review of the July 2021 flooding, this produced four staged reports, available at: <https://londonfloodreview.co.uk/>

And, as with the drought, we know that climate change will bring more of this type of convective rainfall. And, as with the drought, the way we live, in particular the extent of development - not only new developments, but extensions, patios, paved over front gardens, and all the attendant impermeability – is a massive exacerbating factor.

The level of concern, and mobilisation, following the July flooding last year is telling us that people expect action to address this risk.

Whether we look at water supplies, drainage, or environmental stewardship then, we are being given a very clear message from customers, from society, that they are not getting what they want from the sector today. And that they are worried – with good reason – that they will not get what they want, or even what they need, in future.

If we get to the heart of the matter, underneath all those headlines I showed you earlier, I think that is what all this anger is really telling us.

So, what is to be done? And by whom?

Once we've got the message, the question, then, is what we are going to do about it?

Just before I get into the 'what', I want to return to that question I parked earlier on. Who, in this context, are 'we'?

Obviously 'we' includes water companies. We do the doing in respect of a lot of what matters here – we need to do it better and, more to the point, we need to do it differently.

But whatever water companies can do won't be enough. We need a reset, a reboot, of the system in which we operate. Because the system we have today simply will not enable us as water companies to do what needs to be done. And when I talk about a reboot of the system, I'm really talking about a different approach by government and by the regulator.

What water companies can do

Let's start then with what we need to do as water companies. In some ways it is pretty simple.

Fix the basics

There is no doubt that some of us need to fix the basics. I work for Thames Water and we have a lot of basics to fix. We are making progress. If you compare our performance in 2021/2 to our performance in 2022/3 we are: 43% down on total complaints; 39% down on supply interruptions, 7% down on pollutions, we cleared more than 2600 blockages, hit our leakage target for the third year running and reduced water consumption. But we didn't do so well on internal sewer flooding (not least due to that London flooding) and we are still bottom on Ofwat's customer service measure, CMex. And even where we did improve there is more to do.

There's a reason our new CEO, Sarah Bentley, kicked off an 8 year turnaround plan when she arrived 2 years ago, and we have a whole new executive team really passionate about delivering that. But, the reality is that we could fix all those basics and still not be in a good place to deliver against people's expectations when you think about what's coming in the future.

We know need to go further.

Part of this is about changing *how* we do what we do.

A sustainable, system-wide approach that delivers public value

Our core services are the provision of drinking water, and the taking away of waste, its treatment and safe return to the environment. We are required to provide these services (and rightly so) but we have a lot of choices about *how* we do that. And we need to make different choices, better choices.

We need to continue to invest in our assets and to make the best, most efficient use of them we can. Which means looking at those assets, that 'grey' infrastructure alongside, blue/green infrastructure, and alongside customer behaviour - making better choices about which we deploy in pursuit of the outcomes that customers and citizens care about. We need to do this taking account of whole life costs, not only in a financial sense, but also in respect of natural and social capital. Water companies have been talking about this for a while. They've even been doing some of this. At Thames Water we have 3 'smarter water catchments' taking a catchment management approach to delivering customer outcomes and wider public value. United Utilities has taken a similar approach, restoring peat bogs to improve water storage and reduce flooding. Wessex Water has implemented a trading platform – EnTrade – to enable agriculture to commit to making changes to reduce nutrient pollution to improve aquatic habitats and river water quality. But it is not mainstream.

My understanding is that company investment appraisal processes do not *systematically* enable and encourage decisions to be made that drive the creation of *public value* rather than least cost delivery of a customer outcome (or even output).

It isn't easy to operationalise. But this is exactly what we are moving to at Thames Water. An approach to decision making that will drive us to deliver our core services *in a way that creates public value*, for example through choices we make about biodiversity, energy intensity and energy sources, about the people who work for us and how we train them. Indeed, we have agreed with our shareholders that we will privilege the creation of public value over shareholder returns, provided that our shareholders can expect a reasonable and sustainable return. Arguably this reverses some of what has been seen in the industry since privatisation. In the past, the value created in the sector was too often hoovered up by shareholders and shuffled offshore while the environment was given short shrift and customers got what they were 'willing to accept'.

I should say that I don't take the need for our shareholders to receive reasonable and sustainable returns lightly. Shareholders in Thames Water haven't seen a dividend in the last 5 years, and our performance means they may not see one in this control period. And they've underwritten with their own money a business plan that sees us spending £2bn more in this period than our customers are funding. When we turn this company around so it is delivering for customers and the environment, those shareholders – who include the Universities Superannuation Scheme and the BT Pension Scheme - will have earned that return. Genuine value creation does need to be incentivised and *appropriately* rewarded. But that fundamental change in approach to value allocation is, I believe, a critical enabler of the legitimacy of this sector.

Infrastructure for a resilient future

Having said all of this, a greater focus on public value, more nature-based solutions, more customer behaviour change, won't be enough to future proof water and waste water services

and deliver sustainable environmental improvements in the face of climate change and population growth. It is increasingly clear that we will need major investment in infrastructure as well. All of this good stuff can *reduce* the need for new infrastructure, it can make sure we are building new (grey) infrastructure only in the right place and at the right time. But it cannot remove the need for it.

We actually have a pretty good idea what some of this looks like.

All water companies are required to produce water resource management plans every five years. We are working with other companies in the south east, on a holistic planning exercise covering the whole region. The process is, very sensibly, done on an 'adaptive' basis – looking at different plausible scenarios and choosing options to be pursued over the next 5 years that make sense in most of those scenarios, so 'option value' is built in. The process is ongoing, and there are important consultation stages still to be gone through. But two of the three options that keep coming up as likely to be needed involve construction of large new infrastructure. One is a large new reservoir in Oxfordshire that would supply roughly a third of its water to Thames Water customers, a third to Affinity Water customers and a third to Southern Water customers. Another is the 'Severn-Thames Transfer', which would involve adding new infrastructure to existing waterways to transfer water from the Severn into the upper Thames, from which most of Thames Water customers are supplied, albeit with abstraction at different points along the river. (The third is a water re-use scheme at Deephams, in London.) What else do we know we need?

We know that London's water infrastructure is a long way from being fit for the future. The system in London reflects a historical population level and population distribution that no longer applies. London is largely dependent on water that comes from the west, from the Thames and stored in reservoirs, the largest of which you see when you fly in to Heathrow. But most of the growth in London's population in the last couple of decades has been in the east. Thames Water in the 1990s built a ring main for London, which resembles a figure of 8 on its side. This enabled a rationalisation of water supply at the time with more resilience and improved water quality as some of the small, quality-incident-prone service reservoirs and water towers could be taken out of service. But, less helpfully, this reconfiguration of the London system resulted in one heavily dependent on pumping which is massively energy intensive. And the bottom right hand bit of that figure of 8 was never completed. Sensible when Docklands was a waste land. Less sensible now. And even less sensible when you consider the plans for further development of London to the east, for example in Ebbsfleet where a new garden city is planned with 15000 new homes and workplaces for 30000 people⁴.

We need to replumb London.

And while we are talking about London, we also know – as I alluded to earlier - that our capital city is inevitably going to be subject to torrential rainfall of increasing severity and frequency in future. This is the physics of climate change – a warmer world means warmer air absorbs more water as it crosses the Atlantic ocean, it starts to deposit that as rain when it rises as it hits the south coast of England, but when it hits the giant heat island that is London it rises rapidly, cools, and dumps that water as torrential rain on a city that is largely impermeable.

⁴ See: <https://ebbsfleetdc.org.uk/planning/>

The answer cannot be to build bigger and bigger sewers. The Thames Tideway Tunnel – 27 km long, with a capacity (including the Lee Tunnel) of 1.6 million cubic meters - will become operational in 2025 but would have been completely overwhelmed by the rainfall that fell on London last July. So the answer is sustainable urban drainage. On a massive scale. London needs more than 7000 ha of SUDs. That is roughly 50 Hyde Parks. The city needs to become a massive sponge. Like New York, or Shanghai, or Philadelphia. And even with that we may well still need to consider doing more to channel water so that it takes the routes we choose, rather than simply going where it wants to. This has happened in Copenhagen, for example, where they have 'drainage boulevards' – roads that are designed (for example with higher kerbs) to become drains in very extreme weather.

If we really want to stop discharges of all untreated sewage into the environment, which have been clear we do, we will need to similarly ramp up sustainable drainage approaches right the way across our network. We need new developments to keep storm water and sewage separate.

And while we're at it – delivering on that desire to look after the environment by not taking more water from it than we really need and by reducing our energy consumption – why would we not have all new developments (and big retrofits) installed with on-site grey water harvesting and re-use systems? And why would we not also install a smart meter at every property (with full interoperability and open APIs) so we could equip customers with the information they need to reduce water consumption and reduce energy consumption and create new business opportunities for others to help them do this?

Why not, indeed.

What else do we need to get the investment we need?

I have heard some people laying the blame for why we are where we are in terms of environmental stewardship or service resilience at the feet of investors. I've heard people saying that 'it isn't a surprise that investors don't want to spend more money than is absolutely necessary'.

To be clear, this is absolutely not the case. Investors don't fund stuff, customers and taxpayers fund stuff. Investors finance stuff. They provide cash upfront that enables stuff to be built and over time, as that stuff gets used for services people pay for, the investors get a return on the cash they put in. And as and when they sell up, they get their cash back possibly with an additional return if the asset is now worth more. Investors, therefore, are very keen to put more cash up to build more stuff as long as they can see a return that compensates them for the risk they are taking. A lack of investor appetite really is not the problem.

In reality the problem is that it is just too difficult to get stuff done.

Take the Abingdon reservoir. This was part of Thames Water's business plan for the 2009 price review. Ofwat rightly sets a high bar on demonstrating need because it's an expensive bit of kit. The Environment Agency also needs to take a view, given the impact not only on water resources but also habitats and wildlife. Planning permission will be needed. And there is local concern about the scheme, much of it focussed around the Group Against Reservoir Development.

Lots of hurdles to get over, lots of tests to be passed. Lots of process. Lots of politics. Lots of reasons to delay, if not actually to reject the scheme.

And yet, on the National Infrastructure Commission's figures⁵, in Thames Water's region alone we will need 1 billion extra litres of water a day by 2050. And the reservoir could take more than 10 years to build. If we had it today, we would not have a hosepipe ban.

Let's also look at the Thames Tideway scheme. In part because it also illustrates how hard it can be to get stuff done, but also because it points the way to the future.

In 2001, Thames Water, Defra, the Environment Agency and the GLA undertook a 'Thames Tideway Strategic Study' that concluded, in 2005, that screening, storage, or treatment of sewage at the point of discharge was required to meet the Urban Waste Water Treatment Directive standards. In 2006 a further study was commissioned. Various groups questioned the integrity of the strategic study and proposed other measures, like SUDs, which they believed would obviate the need for the Tunnel. In 2007 Ofwat produced an assessment that the Tunnel was poor value for money. In 2010 a draft National Planning Policy Statement for Waste Water was issued, which – crucially – said that the Tunnel was needed. There was considerable objection to it, but it was published the next year largely unchanged. Construction of the Lee Tunnel started in 2010 and finished in 2016. In the 2010s upgrades were undertaken at 5 London sewage treatment works. In respect of the Tideway Tunnel itself, consultation on the potential routes took place from 2010 to 2012. The application for the Development Consent Order was submitted in February 2013. The UK Government approved the plans – overriding some of the concerns of the Planning Inspectorate in September 2014, after which followed 3 judicial reviews of the decision.

In the Spring of 2013 a decision was taken that the construction of the Tideway Tunnel should be undertaken by an infrastructure provider, with its own licence, separate from Thames Water. Procurement started that summer. In August 2015 the Bazalgette consortium was chosen as the successful bidder and contracts were awarded. Construction started in 2016. The Tideway Tunnel will be completed in 2025. 20 years after that initial study concluded it was needed. The sheer length of time the whole thing took to from need, to scoping, to planning, to procurement to delivery is staggering. But aside from that, Tideway these days is seen – rightly – as a highly successful project.

And the ingredients of that success are clear and replicable.

There are lessons for both the government and the regulator about what is needed.

What government can do

What have we learned from Tideway then?

A technical case was made, but so was a political case. This enabled cross party support, which enabled the National Planning Policy Statement to be agreed, which was crucial in supporting the need for the scheme.

⁵ See NIC (2018), Preparing for a Drier Future, available at: <https://nic.org.uk/studies-reports/national-infrastructure-assessment/national-infrastructure-assessment-1/preparing-for-a-drier-future/>

That cross party political support also enabled a set of legislative changes- the Special Infrastructure Project Regulations - that provided for a separately licenced entity with a discrete regulatory treatment. We don't need to do this again – we can simply use those regulations for future projects. The key is that they opened the way for a bespoke approach to risk allocation on the project – with the long tail of effectively unpriceable risk being borne by the taxpayer, within a long term regulatory regime.

While Tideway was under construction (and for the first two years of its operation) it is run by Bazalgette but – importantly - the revenues that fund it come from Thames Water customers and are set by Ofwat, so revenue risk is minimal. This in turn enabled the project to be financeable efficiently and competed effectively. The whole arrangement resulted in what was then the lowest ever WACC for a utility infrastructure project. The same approach could be taken for future projects.

I also have experience from my time at BT that is relevant here, when we think about what government could do.

In 2019, in the face of a heated public debate about the state of broadband in the UK, the government published a review of future telecoms infrastructure⁶, and in it reached a very clear conclusion: not only that full fibre broadband needed to be rolled out as a matter of urgency across the country, but also that the delivery model should be one of organic -in-the-market competition. It accepted there were pros and cons of this, but weighed them up and made a clear choice. It then issued a statement of strategic priorities to Ofcom⁷ that reflected this, and was also – crucially – clear that if Ofcom had a choice between lower wholesale prices for fixed broadband access and more investment it should choose more investment. In parallel with this, government undertook a proactive programme to identify barriers and blockers to rolling out full fibre.

Ofcom then delivered a regulatory regime that reflected the government's clearly stated priorities. In part this delivery came through its wholesale fixed telecoms market review in 2020⁸, which created the framework that enabled BT to commit to support Openreach in 'building like fury' to fibre up the country. Crucial to this was the ability to earn a return commensurate with risk as understood at the time the investment decision was taken (the 'fair bet'). Also crucial was the fact that Ofcom provided a good measure of certainty about the regulatory regime that it would apply across 'at least two' control periods.

So, if government wants major investment to underpin resilience of services and improve the environment, there are tried and tested ways it can secure this. And regulators do have the tool kit they need to get this stuff delivered, if there is a will to do so.

Government needs to set out a strategic vision for the sector and put its weight and muscle behind the key things that need to be delivered to achieve it. It needs to agree the major

⁶ Available at:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/732496/Future_Telecoms_Infrastructure_Review.pdf

⁷ Available at: <https://www.gov.uk/government/publications/statement-of-strategic-priorities>

⁸ Available at: <https://www.ofcom.org.uk/consultations-and-statements/category-1/2021-26-wholesale-fixed-telecoms-market-review>

infrastructure delivery programmes that are needed to provide for the country's water and waste water needs for the next century not just the next 5 years. It needs to mobilise in support of those programmes, create cross party consensus, enact enabling legislation, remove planning constraints, and embark on a process to identify and bust other barriers. Crucially, recognising the profusion of regulatory bodies whose statutory duties and remits might not otherwise dispose them to enabling these programmes, government needs to take on the role of Chief Knocker-Together-of-Heads. This might include changes to the strategic policy statement provided to Ofwat to be really clear about how inevitable trade offs should be made. It might be less formal but potentially hugely influential 'task-force' type work, which could bring together various agencies whose support and action might be required.

There are other steps government could take to maximise the efficiency and the effectiveness of any such infrastructure delivery programmes.

If steps were taken to improve water efficiency, it would help to ensure that we did not build – and customers did not fund – more infrastructure than needed. The platform for government to do this already exists, with provision for a national water target within the new Environment Act. If this were set in a 'net zero' style way, to create a national mission that could be used to mobilise across the economy and society it would be a powerful thing.

Government could then step in with a national, coordinated, consistent push for smart metering, with common standards and open data, which would create jobs and open the door for innovation.

It could also make – long overdue – changes to building regulations and planning policy guidance, so that new developments and retrofits came with grey water harvesting and re-use and water efficient appliances, and so that separation of storm water and sewage and permeability of hard surfaces became the norm.

What economic regulation can do

Regulatory changes would be needed to complement all of this push from government, providing funding, securing financing and enabling and encouraging efficiency.

It makes no sense at all to apply a regulatory reset every five years to what will inevitably be programmes of work that will take multiple control periods to plan, enable and delivery. Some of the work required will be big, complex single projects like building a reservoir or a large pipe. Others, like replumbing London or turning it into a giant sponge, will take the form of a suite of interdependent smaller projects, where the ability to plan and sequence over time, to build relationships and create capability will be key. But all of it will be long term. Some of it may involve a risk profile that is quite different to that of a BAU water company. Some of it may be better delivered (or owned or operated) by companies other than existing water companies. And the greater the difference in work and approach to that of the traditional water company model, the less well it lends itself to the sort of cross-sector comparative tools that Ofwat relies on in price controls.

A different approach is needed.

Different, but – as I think I have shown – not entirely new.

Some of the bones of this exist in the Tideway model. I have already talked about the lessons from the Tideway model for what government can do. But there are useful regulatory approaches and tools that can be borrowed from Tideway too. I would suggest here that there were a number of features of the Tideway regulatory model that should be considered in respect of what one might call strategic enhancement programmes.

The first is agreement on the outcome that the programme is designed to deliver (this may well be needed in any event if a Development Consent Order is required). The second is agreement on the broad scope of the work. The third is the setting out of a collaborative process that enables appropriate regulatory oversight of the specific costs of the work at each of a series of stages. The fourth is clarity on what risks are to be allocated to whom and how (this will certainly involve the allocation of risk between the project delivery entity and the funder, most likely the customer, but should also include consideration of whether it may be efficient for the taxpayer to bear certain risks). The fifth is clarity on how the efficient costs are to be assessed and recovered, which could take the form – as in Tideway – of a specific price control, or the sort of stage gate process we have been going through with Ofwat on our two conditional allowances. But the key is for there to be clarity on the framework and the methodological approach. The sixth is the choice of delivery model, with different options considered, including the role of competition in the design, build, ownership and operation of whatever is to be created, choices which would then open up the possibility of different financing options.

You could imagine a world, beyond PR24, in which Ofwat continues to set 5 yearly price controls for what could be considered the BAU operations of existing water companies (which could include smaller scale, in-period in-company enhancement schemes) but that overlaid on top of this is a series of ‘strategic enhancement programmes’ that are set over the longer term and on the basis of more programme-specific approaches.

Perhaps as a further evolution, some of them could be specified nationally rather than water company by water company, which could unlock more opportunities for innovation or supply chain capability building. It is easy to imagine how a national smart metering programme could take this form. But why not a national programme for installation of SUDs? Or perhaps other programmes of the type coming from the National Infrastructure Commission’s work?

If that all sounds too grand for now, there are some steps baby steps we could take, even in PR24. We are keen, for example, to set out three long term resilience schemes, one on London water infrastructure, one on London surface water drainage and one to reduce discharge of untreated sewage into rivers (below compliant levels). These three schemes could be considered as pathfinders for this more strategic, outcome-focussed, long term regulatory approach, or at least for elements of it.

Conclusion

So where does all of that leave us?

If we wanted to be glass half empty, it could look like a pretty grim picture. We depend on water and waste water services for our health and whole way of living. We are increasingly aware of the interdependency we have with the natural environment. On none of these things do we have the levels of resilience people want today, and the twin challenges of climate change and population growth are immense and proximate.

But there are reasons to be hopeful.

We do know what we need to do.

We know as water companies what we need to do differently. Most if not all of us are doing some of this stuff now, we just need to push what can seem like marginal projects or disparate initiatives into something that is mainstream and holistic.

We have a pretty good idea of the type of investment that we will need to improve climate change and population growth resilience. More water storage, more water transfers, more water re-use. Separation of storm water and sewerage, and 'spongeification' on a grand scale.

More smart metering.

Financing is not the issue. If there's a funding stream, and clarity about risk allocation and the expectation of a reasonable, sustainable return, the investors will come.

We have learned – possibly the hard way – what we need to unlock all of this.

A sense of national mission, relentless knocking together of heads and barrier busting by government.

And a willingness on the part of the regulator to keep what works about the current regime – a BAU price control on the basis of comparative regulation – but to complement that with a framework to enable a number of genuinely strategic enhancement programmes that will deliver the step change in resilience we need over the coming decades. Combining long term clarity on need and regulatory approach with specific regulatory design choices that reflected the nature of each programme. Which would in turn unlock efficiency and innovation, potentially including through competition.

As I bring this lecture to close, it occurs to me that perhaps I should add one more thing to that list of what needs to happen. Something I have not yet mentioned.

A sense of urgency.

One thing I've learned over the past 20 years or so, most of them spent working in or around regulators and government, is that there are always reasons to delay. And oftentimes they are good reasons. A desire for more information to make a better decision. A desire to do one more consultation so as not to miss a point of view or a stakeholder. A desire to trial something to understand better how it works in practice.

All of these things come from a good place. But still, that delay has a cost. And as a society our willingness and our ability to bear that cost is diminishing.

So maybe we should be thinking less about all of this as interesting ideas that we can consider, and consult on, and introduce, comfortably, when we all get the other side of PR24, but instead we should be pulling all the levers we can now, to get as much of it in place as we can today? As the saying goes, if the best time to plant a tree was 100 years ago, the second best time is now.

