

THE WATER REPORT

POLICY | REGULATION | COMPETITION

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Fifth amendments

As the retail market turns five this month, MOSL CEO Sarah McMath calls for meaningful change.

COMPETITION WATCH

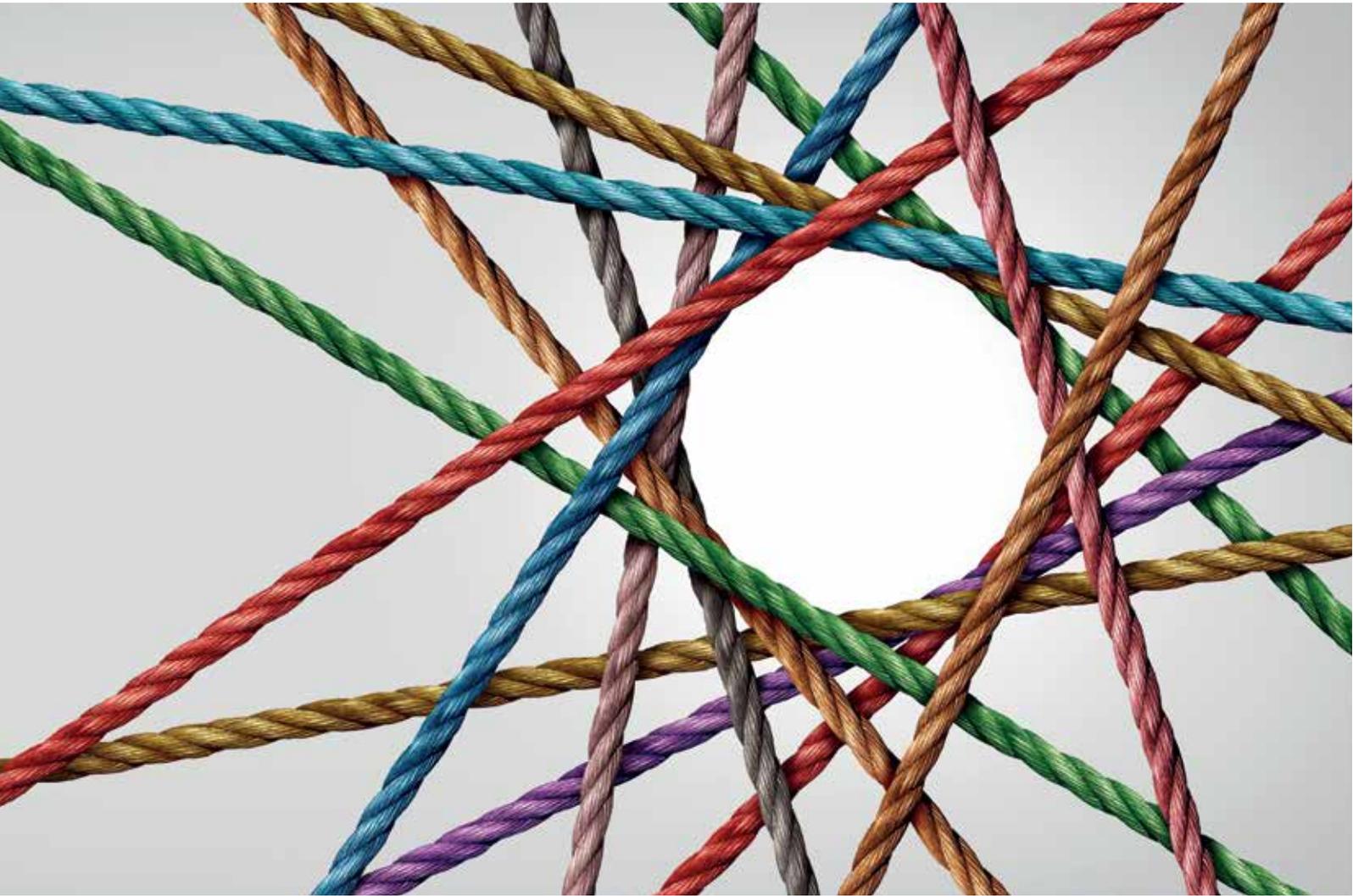
- Enhanced metering found to be cost beneficial for wholesalers.
- Covid bad debt decision.
- Self-suppliers want the market to go beyond the basics.
- Everflow on the market reviews and taking The Climate Pledge.

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EDITOR'S COMMENT



The power of price

Energy supplier websites crashed under the weight of people trying to give pre-price rise meter readings on 31 March. On 1 April, media and social media was awash with energy saving advice and reports of people taking action to reduce their consumption. What can we learn? Price rises are more powerful in driving behaviour change than any climate change based argument, even warnings of species eradication and planetary doom.

That's not to criticise the motivation. 'Cost of living' has rapidly evolved into 'cost of surviving' for many as inflation, tax, fuel and food prices ascend in sync with the punishing energy price climb –and wages and benefits don't keep pace. But the proactive consumer response to being hit in the pocket does rather imply that the cheap, regulated price of water is a whopping obstacle to the sector's water saving ambitions.

But. Come 2025, we are looking at an altered water price landscape. Campaigners, and the MPs they have convinced to show concern, have succeeded in cajoling ministers to endorse a plan to reduce storm overflow discharges at the cost of £65 a year per bill-payer (p4). It won't hit overnight, but even the initial £20 a year earmarked for 2025-30 is around 10% of today's average £219 wastewater bill. That's significant.

We are yet to see how companies and Ofwat process this – specifically, the extent to which it displaces versus adds to other capital spending needs at PR24. These too are looking urgent and substantial – consider leakage (p14), smart metering (p12, p26), phosphorus reduction (p10), environmental resilience (p9) and net zero, as well as local priorities.

Juggling these consumer pressures will be a minefield. It's all the more reason to push on with a national social tariff in water to give some protection for the poorest. But maybe even that, welcome as it is, won't be enough. Perhaps, given the situation, we shouldn't just plough on as usual with a price review that at one extreme could pile extra pressure onto struggling households, or at the other could try to avoid this by ducking out of essential long term investment that has not been mandated by policy.

It was suggested to me recently that more innovative options should be on the table – including deferring the price review until the economy is more settled, or extending the use of the sort of 'conditional allowances' deployed at PR19 for Thames. Radical ideas, but perhaps these strange times demand them.

Karma Loveday, editor,
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Feedback, comments and suggestions very welcome.

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SPIILLS AND BILLS

Defra unveils a new era of investment with a £54bn storm overflow plan.

Defra has cleared the way for a new era of water investment with a plan to reduce society's current reliance on storm overflows. Its *Storm Overflows Discharge Reduction Plan*, open for a short six week consultation until 12 May, envisages £54bn of capital investment, delivered as a phased, long term programme. This, the paper estimates, would add £65 to the average annual bill over the period 2025-2089, though this would be stepped up over time so the rise could be kept to £20 per year between 2025 and 2030.

The plan sets out that this should deliver three headline targets, as shown in the box. Defra has held back from zero spills, opting for zero harm as the main metric. The Storm Overflow Taskforce priced zero spills via complete rainwater separation at £350bn-£600bn, and by other means (storage etc) at £160bn-£240bn.

Delivery routes

But how the targets are handled by companies and Ofwat at PR24 and beyond is obviously yet to be seen. The investment is major – the biggest in the water environ-

since the 1990s – and remains subject to a couple of crucial things.

First, the targets will need to be finalised post consultation. A final version of the plan is due in September, and at first glance, campaigners aren't satisfied. Surfers Against Sewage urged its followers to respond to the consultation "strongly," summarising the sentiment as: "Surprise, surprise, the targets set completely fail to acknowledge the urgency we need to address the problem. The sewage pollution crisis is happening now – live, direct and disgusting. Targets decades away just don't cut it."

The publication the same day of the latest discharge data from the Environment Agency wouldn't have helped their mood. SAS reported: "Water companies were responsible for pouring sewage into river, lakes, estuaries and our seas a disgusting 372,500 times in 2021. That's an eye watering 2.6m hours of sewage flowing into some of our most treasured ecosystems, where wildlife should be free to flourish and where we love to surf, swim and play... This is ecological vandalism at a shameless scale."

So in short, despite the hefty price tag, expect lobbying for the plan to go further, faster.

Second, how water companies go about achieving the targets will be instrumental in how much they cost to deliver. Defra endorses taking a natural capital approach which maximises wider benefits, innovating, and ensuring action is evidence-based. Specifically, it points companies to: "Prioritise removing existing surface water connections from the combined sewer network over building additional storage, wherever this achieves the best outcome for people and the environment."

Deliver year on year reductions in the amount of surface water that is connected to combined networks, including by limiting new connections.

Treating discharges as a better solution than reducing spill frequency in some circumstances, such as for highly diluted flows caused by groundwater infiltrating pipes.

For its part, Defra said Government would consider (there was no firm commitment): streamlining the planning process so firms can move from investigating an overflow to improving it without waiting for the next five year cycle; legislation to tackle excess rainwater in sewer systems including via implementation of Schedule 3 of the Flood and Water Management Act 2010; and tackling unflushables.

Gang up on the problem

Some water companies have proactively put forward bold plans for river rehabilitation already (see box). In his closing keynote at the Rivers Trust conference last

DISCHARGE REDUCTION TARGETS

1. Environment. By 2050, water companies shall only be permitted to discharge from a storm overflow where they can demonstrate that there is no local adverse ecological impact. This is defined as achieving the Urban Pollution Management Fundamental Intermittent standards for ammonia and dissolved oxygen directly downstream of the discharge point.

For high priority sites (defined as including SSSIs, Special Areas of Conservation, eutrophic sensitive areas, chalk streams and waters currently failing ecological standards due to storm overflows) this target must be met in full by 2045, and for 75%+ sites by 2035.

This "will mean that no water body in England will fail to achieve good ecological status due to storm overflow discharges".

2. Swimming. For storm overflows discharging into and near designated bathing waters, water companies must significantly reduce harmful pathogens by either applying disinfection, such as with ultraviolet radiation, or reduce the frequency of discharges to meet Environment Agency spill

standards (new standards are coming for rivers later this year, expected to be fewer than two spills per bathing season) by 2035.

3. Frequency. Storm overflows must not discharge above an average of ten rainfall events per year by 2050. (A maximum of 12 hours rainfall will be classed as one rainfall event; longer rainfall events will count as multiple events).

Water companies must also ensure all storm overflows, regardless of where they discharge to, have effective screening controls and must be well maintained.

TRAJECTORY OF IMPROVEMENTS

Year	2030	2035	2040	2045	2050
% of high priority site storm overflows improved	38%	75%	87%	100%	100%
% of total storm overflows improved	14%	28%	52%	76%	100%
Indicative spill reductions	44,000	84,000	160,000	240,000	320,000

RIVER REVIVAL PLANS

Thames Water

Launching the Thames plan at the Rivers Trust annual conference, chief executive Sarah Bentley announced plans to “speak up, open up and clean up” on river health. The key elements of the plan were:

- A commitment to a 50% reduction in the total annual duration of spills across London and the Thames Valley by 2030, and an 80% reduction in sensitive catchments. Bentley remarked that it is “absolutely nuts” to treat rainwater and called for the removal of the automatic right to connect.
- A commitment to transparency and open working. Following a successful trial of an open data platform for near real time alerts of sewage discharges from six sites around Oxford, the company said it is on track to meet its pledge for live notifications at all of its 468 permitted locations by the end of the year.
- A 50% increase to funding for working with catchment partnerships and driving collaboration – £5m over five years. Bentley highlighted two major challenges the company faces relative to the issue:
 - How much can vulnerable customers afford to pay?
 - Competing issues, including leakage, new water resources, lead pipe replacement and increasing system resilience. “Please don’t think any of this discussions are easy,” she pressed, adding there would be difficult tradeoffs.

Severn Trent and Anglian Water

The two firms co-launched *Get River Positive*, a plan based on five pledges to transform river water quality across their regions:

- Ensure storm overflows and sewage treatment works do not harm rivers – company operations will not be the reason for unhealthy rivers by 2030, and the use of storm overflows will be reduced to an average of 20 per year by 2025.
- Create more opportunities for everyone to enjoy our region’s rivers – within ten years, 90% of the population in these regions will live within an hour’s drive of a bathing site.
- Support others to improve and care for rivers – Collectively launch a new deal for farmers this spring to incentivise regenerative farming practices and provide access to green financing; as well as new partnerships with the agriculture sector. Also campaign for the removal of the automatic right to connect for new developments, champion the Bill to ban wet wipes, and use convening powers to help others address their contribution to river health.
- Enhance our rivers and create new habitats so wildlife can thrive.
- Be open and transparent about performance and plans – work with NGOs to ensure they are getting the information they want and need to see to accurately judge river health, and make this information easily accessible via their individual websites by end of 2022.

Severn Trent and Anglian said the pledges had been designed to provide water companies with a framework on which to build their own operational and environmental plans.

United Utilities

United Utilities’ plan was framed around the following four pledges, to:

- Make sure the company’s operations progressively reduce impact to river health.
 - Be open and transparent about performance and plans.
 - Make rivers beautiful, supporting others to improve and care for them.
 - Create more opportunities for everyone to enjoy rivers and waterways. Specifically it committed to reduce the number of spills from storm overflows by at least a third between 2020 and 2025, via a £230m investment programme, leading to 184km of improved waterways.
- United Utilities also said it will support local groups and authorities with new applications for inland bathing waters; launch a community fund to support local river health initiatives; and, working alongside The Rivers Trust, create the opportunity for people to volunteer as citizen scientists to collect data on river health which will help inform further improvement work.
- United Utilities is also championing legislation to ban wet wipes.

month, chief executive Mark Lloyd set out an agenda to work with water companies rather than throw brickbats at them. “We’re in the business of finding solutions,” he said, welcoming the “step change” in water company investment plans for rivers, greater information sharing and increasing openness to partnership working. His plan, he said, was to “gang up on the problem, rather than each other”.

He shared some areas of upcoming focus for the Rivers Trust. High on the list was the Planning Bill expected from Michael Gove’s department. Lloyd said this “could have even more impact than the Environment Act,” potentially being the vehicle to join up land and water use planning; advance nature-based solutions, water neutral development and blue/green spaces; and create new regional bodies for rivers to sit between top down targets and bottom up action.

Enforcement

Meanwhile, in an update to its wastewater investigation, Ofwat said last month that all water companies remain subject to ongoing scrutiny with five firms – Anglian,

Northumbrian, Thames, Wessex and Yorkshire Water – made subject to formal enforcement cases.

Ofwat said all but Hafren Dyfrdwy reported in their December submissions that some treatment works were potentially non-compliant with the flow to full treatment (FFT) requirements of their environmental permits. Around 70% of these are small works, serving populations of less than 10,000. It reported that companies identified among the following root causes:

- The failure of equipment at the wastewater treatment works.
- A part of the works not being installed with sufficient physical capacity to meet the FFT.
- Maintenance issues.
- The incorrect set up of site controls or data monitors at the treatment works.
- Errors by operational staff.

Ofwat said the extent and quality of the compliance data supplied by companies in their December submissions varied considerably, as did the responses to its other lines of enquiry, including: governance oversight of compliance; how en-

vironmental performance is considered in decisions about pay and dividends; how non-compliant works are being addressed; and how companies are rebuilding customer trust on this issue.

The regulator said it had targeted the five firms specifically for one or more of: extensive non-compliance, shortcomings in compliance management, or insufficient evidence of how compliance has been established.

Companies said little publicly but privately some expressed that they would have provided any further detail required already had they been asked; have ongoing work programmes in place to invest in monitoring and improvements; and in some cases have been in discussions about sewage works compliance with regulators for some time anyway.

It is understood there is considerable variance between the five companies regarding Ofwat’s concerns. Some, for instance, are understood to have significant numbers of works potentially non compliant, whereas for others the issue appears to be centred more around board oversight arrangements. **FWR**

6 INDUSTRY COMMENT

COMBINED SEWER OVERFLOWS: GROWING AWARENESS, GROWING PROBLEM

PA Consulting looks the data behind CSO issues, and what possible solutions water companies might explore to reduce their use.

The UK water industry is facing the greatest challenge in the way it operates its wastewater networks in more than a generation. The Environment Bill has placed a legal requirement on companies to progressively reduce the adverse impacts of storm discharges within their wastewater networks, including those from combined sewer overflows (CSOs), amidst growing public concern and growing national environmental ambitions.

Companies need to act if they are to avoid heavy fines, criticism from their customers and damaging media headlines. In assessing the right course of action, companies will need to consider how significant the issue is and what solutions are available to tackle it. The answer for each area will be different given the varying asset bases and physical and human geographies.

Since CSOs are primarily used for stormwater discharges, the spills are normally heavily diluted. Further, many CSO discharges are protected through the use of coarse screens and dip tubes intended to remove gross solids before they reach the water course.

Notwithstanding this, their usage has been a subject of considerable recent public attention and media interest.

Companies need to separate the problem from the awareness to tackle this challenge in the optimum way, first examining the causes and then the actuality of CSO discharges. Three primary causes are considered: climate change, urbanisation and sewer blockages.

Causes of CSO use

There is clear evidence of climate change driving the level of

discharges. The Met Office's latest State of the UK Climate report highlights there were 4% more extremely wet days compared to the 1961-90 average, however importantly, there was 17% more rain on those days. This creates more surge flows, exceeding the networks' capacity more often and more rapidly.

In addition, the increase in population and urbanisation means fewer areas of natural environmental mitigations for surface water runoff and increased loading on existing sewers. In England for example, urban population has increased by 2,716,844 from 2011-2020.

On sewer blockages, the evidence of change is less clear. Blockages cause flow restrictions, resulting in build ups within the network and unintended spills from CSOs. Between 2015-2020, blockages were attributed as the cause of just under 80% of all pollution events at storm overflows. There is however little evidence that the frequency of their occurrence has changed over the last decade.

Extent of CSOs

A key issue in understanding and addressing CSO discharges, is the paucity of data to confirm when, and where overflows are used. As recently as 2016, only 6% of all storm overflows were monitored. However, this is changing, and recently, significant progress has been made, with many companies now reporting greater than 90% coverage. The EA expects that all overflows will be monitored by EDMs by 2023.

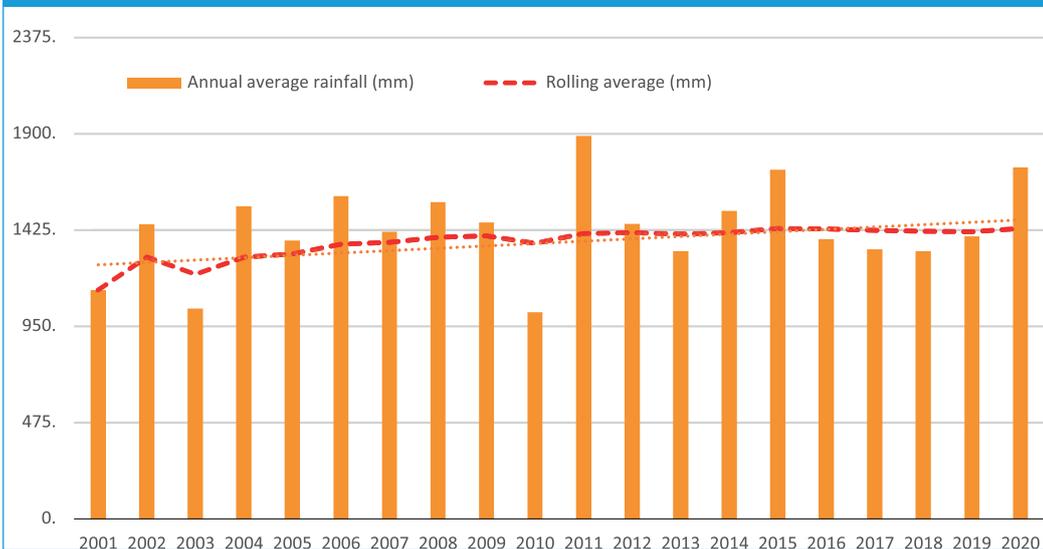
Installing EDMs has come with its own challenges; it required companies to trace locations for CSOs that may not have been accurately mapped and, once located, carry out extensive survey work to understand how the overflow is connected and how it would behave during high flow periods. The initial data from EDM monitors sent to the EA has required some water companies to revisit EDM installations to understand and address spurious data. This has conversely provided benefits in a far greater understanding of CSOs.

While it will take time for a reliable picture to be established, EDM data provides a far improved baseline for water companies to understand and analyse CSO performance. For example, figure 2 indicates that it is possible to identify the spillage rates for many CSOs.

Possible solutions

The industry is gaining momentum on this issue and corraling understanding and ideas, and companies have committed £3.1bn. This amount is welcome, but tiny compared to the Storm Overflow Taskforce's estimate of c. £280bn to retain overflows and put mitigations in place and c. £600bn to completely separate out surface

FIGURE 1: UK ANNUAL AVERAGE RAINFALL



water. The industry will need to address the challenge with the right mix of alternative, innovative, cost-efficient approaches. We consider some approaches below.

a) Reducing demand on the network

Finding ways to reduce surface water entering the network would naturally reduce the risk of discharge. This could be achieved through:

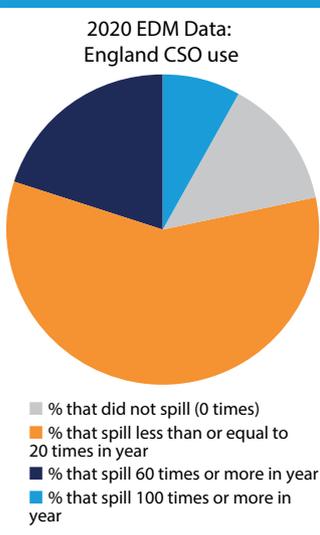
■ Nature based solutions. These use natural 'green' infrastructure to mitigate the impact of peak surface water flows or provide temporary storage. For example, 'Sustainable Urban Drainage Systems' or 'rain gardens' provide a natural buffer between surface waters and the sewerage network. These are low-cost approaches with additional socioeconomic and biodiversity benefits. However, they require overground land, potentially extensive landscape re-engineering and a risk of consumer rejection.

Constructed wetlands are another approach, treating CSO existing discharges to remove harmful pollutants before discharging, hence retaining the CSO but reducing its potential for harm. The land requirement is considerable and mostly limits their use to rural environments.

■ Continuing to reduce infiltration. Poor condition sewers below the water table can attract high inflow, especially in sandy or silty soils. Flow monitoring can identify these areas allowing proactive intervention, such as sewer lining. However, tracing infiltration is notoriously difficult and expensive as it varies depending on ground water table levels and other soil conditions. It also requires extensive CCTV survey work and root and debris removal.

■ Continue to tackle blockages. This requires a combination of physical intervention and customer behav-

FIGURE 2: 2020 EDM DATA – ENGLAND CSO USE



ioral change. Blockages can be caused by collapsing sewers due to poor condition, tree roots, misalignment in pipe joints and a build-up of silt during low flows. As with infiltration, resolving these issues is often expensive and time consuming. On the behavioural side, sewer misuse remains the primary cause for most blockages. Companies have worked hard to engage customers and some progress has been made in this area.

b) Optimise existing capacity

Smart networks will be a key, cost-effective alternative to deploying additional infrastructure to manage storm flows and can be achieved in the (relatively) short term; the industry has made, and continues to make, significant advances towards smart waste and water networks by improving monitoring and network control.

■ Network monitoring – the first step in enabling truly 'smart' networks is to ensure there is enough monitoring and data to inform actions to optimise the network. This can:

➤ Identify early-stage network blockages or infiltration occurrences through, for example, flow

mapping, which can be used to prioritise maintenance activities, and proactive intervention to these areas.

➤ Develop confidence-based weather and flow forecasting to give granular, catchment area level data on potential storm weather events and their implications on the network. This would help inform the control response.

■ Advanced network control – a greater understanding of network performance, combined with a large asset suite to control, can be used as an effective tool to optimise the capacity within the existing network. For example, using predictive analytics to take advantage of existing storage in the network in anticipation of severe weather events and hence evacuating pumping station wet wells and storm storage towards areas where there is anticipated to be spare capacity.

Smart networks can drive significant progress in CSO use, complementing the development of infrastructure measures. The prerequisites are that enough assets are available to control, there is enough reliable data and monitoring to understand flow, and sufficient capability to analyse and utilise this data. Notwithstanding this, the effectiveness still relies on having sufficient, vacant, network storage to utilise and a risk appetite to manage flows without other infrastructure fail safes.

Sustainable progress

If elimination of CSOs is the industry's aim, then it potentially poses the biggest change to the wastewater network in generations. To address this challenge, the industry must:

■ Focus on data: CSO reduction needs a deliberate approach to create an affordable, acceptable solution for each location. However, there is a paucity of quality data to determine which CSOs to

address and how. The industry has made good progress and a knowledge base is emerging.

■ Prioritise outcomes: The choice of which solution to pursue for each part of the network will have operational, financial, and societal implications. Re-engineering CSOs should be an opportunity to ensure that solutions that add wider social and environmental value are distributed throughout the customer base.

■ Be risk focused: Data will provide the necessary information to inform a risk-based approach, minimising impact to the customer, while demonstrating the industry is making progress. This approach should also target the use of low cost, low carbon solutions.

■ Smart networks: Smarter networks and 'digital twins' – mirroring the physical network in an IT solution – have been progressing in the industry and can be used to target solutions.

■ Education: The negative media attention is understandable and justified but does risk creating a misunderstanding about CSOs. Customer education could help the water companies' position and reinforce how the consumer themselves can continue to help by monitoring their own waste disposal.

The demand from customers, regulators and policymakers to reduce CSO use has never been greater. There is no one-size-fits-all solution. Resolving this issue requires systemic industry change and a need for innovation and investment prioritisation, to drive improvements in CSO performance in a sustainable yet equitable way, whilst minimising the cost to the consumer for current and future generations. [TWRI](#)

■ By Ted Hopcroft and Jack Harris, water experts at PA Consulting. For more information, visit www.paconsulting.com/industries/energy-and-utilities/water

INDUSTRY COMMENT

REGULATION V ACTIVISM

Which is more effective in driving change, the February Indepen Forum asked?

The first Indepen Forum of 2022 posed a topical question about infrastructure policy – is it more effective to challenge society’s conventions head-on in a campaign or to work within existing structures, as a regulator might?

Activists have had considerable success of late on the matter of river water quality. Emotive social media campaigning succeeded in heating up public opinion sufficiently to get a Government U-turn in the final stages of legislating the Environment Bill, resulting in significantly stiffer provisions on overflows.

The Forum heard from a high-profile environmental campaigner turned regulator, who has ample experience of working both inside and outside of the system. The lecturer said on activism vs regulation: “It’s never either/or, it’s both.”

He observed that the infrastructure sectors and the environmental issues they raise have climbed the agenda astonishingly. This “never seen before” sustained level of public interest has resulted in tougher policy targets, including the 25 Year Environment Plan (2018), Net Zero (2019), Protection for nature (2020) and the Environment Act (2021). Taken together, this is “huge, a really big set of goals,” all of which can be traced back to activism – both direct action and more traditional evidence-backed lobbying and campaigning, the latter supported by a terrifying, science-led picture of planetary change driven by

global warming, which has been relayed to the public by the media.

Water: integration

On water policy, the lecturer pointed out that all of the aforementioned green targets have a relationship with water, and that climate impacts will have a “profound” impact.

If all the targets are to be achieved, we will need to take a different approach to conceiving policy. On top of existing protections for the likes of Sites of Special Scientific Interest, the tools we have to hand include:

- New agriculture policy – initiatives including the Environmental Land Management Scheme, the Sustainable Farming Incentive, Local Nature Recovery and Landscape Recovery will in combination affect soil, agri-chemical, biodiversity, carbon and pollution issues and support the development of new habitats, with “major implications” for the water industry.
- Biodiversity Net Gain – developers will have to measure the biodiversity damage their projects cause and improve the environment by 10%, through a market-based credits system.
- Woodland creation and peat-land restoration – multi-benefit programmes.
- Local nature recovery strategies,

It is hard to think of an example of an environmental policy that has not arisen from some kind of activist trigger

provided for in the Environment Act – nature recovery at local authority scale.

■ Regulatory direction – Defra has put the environment firmly onto Ofwat’s agenda via the new Strategic Policy Statement.

The lecturer concluded that it will be crucial to seize the opportunity to “pull this together now” – to integrate these and other tools to deliver against environmental targets in a cost-effective way. What’s required, he explained, is “less of the old style of regulation” and more focus on the entire landscape, the entire system, and building partnerships for nature recovery between multiple actors, using multiple tools, to advance multiple targets.

While this concept is one that “activism struggles with” – whereby the power of a simple message is strong, but translating such messages into the “complicated, messy world” of whole system thinking is hard – successful activism will inevitably bring issues into a policy space that is complicated. Were he still an activist, the lecturer said his simple message now would be: “Integration, integration, integration.”

Points arising

During the discussions, the following points were raised.

- **Activism first** – It is hard to think of an example of an environmental policy that has not arisen from some kind of activist trigger. Ministers have so many demands on them that “some kind of external flag-waving... some nudge factor from outside” seems necessary to spur action.
- **Money matters** – By attaching no value to the natural environment, we have degraded it so thoroughly

that we have perverse outcomes, such as spending billions of pounds on flood defences instead of preventing uplands being degraded in the first place. Looking at bits of the picture in isolation has led to disastrous outcomes for ecology and planetary health. Although the concept of putting financial values against natural assets is controversial in activist circles, without this, the natural world is regarded as having no value until it is turned into consumer goods.

■ **Regulatory restrictions** – Regulation rarely keeps pace with the beat of societal needs, and sometimes fails even to reflect major policies, such as on Net Zero – this is true of planning and regulators’ duties and there is little enforcement and no sanctions when targets are missed. Resource shortfalls at green regulators must be addressed if we are committed to securing a healthy natural environment. Other regulatory challenges include a tendency towards short-term (five year) views which can militate against partnership-based, nature-based solutions that can meet multiple objectives, and risk tolerance, whereby “everyone smells a rat” when there is talk of releasing regulatory shackles, fearing deregulation or cuts. This is a challenge for activists too: how to move into this space and open their minds to the benefits of less restrictive regulation.

■ **Water companies as activists** – Water companies should do all they can to elevate the voice of the customer to ministers, as a powerful pushback to those who cite the cost of living as a reason for inaction on the environment. Water leaders should also encourage their staff to build partnerships with activists in their landscapes, given there may be ways together to progress common agendas more effectively. **TWR**

ENVIRONMENT IN THE ROUND

South East Water is consulting throughout April on its co-created draft 25 Year Environment Plan.

The plan, the first of its kind in the industry, sets out the actions the company commits to taking to protect and enhance the environment in its broadest sense, in the short and long term. It supplements South East Water's existing planning processes and strategies and offers visibility for all stakeholders on how it intends to develop a more resilient environment across its operating area, taking all environmental impacts into account – from abstraction and biodiversity, to carbon and climate change. Head of environment Emma Goddard summarises that the new plan “joins all the dots together”.

The 25 Year Environment Plan covers compliance with formal legislation and obligations; sets specific goals and targets and the timescales within which they will be met; provides a framework for monitoring and delivery; and seeks to balance all the needs of the environment using methods that allow complex trade-offs to be assessed and delivered.

“There’s always a trade off,” Goddard comments, illustrating with reference to the call that has come from some campaigners for chalk abstractions to be turned off. There can be unintended consequences if environmental choices are not assessed holistically, she explains, citing that turning off a chalk abstraction could lead to groundwater flooding, impact biodiversity and drive emissions-heavy alternatives. “You could end up with carbon hungry solutions, pumping water all over,” she says. “So it may be better to rest a source rather than turn it off completely.”

One great strength of the plan, in bringing all environmental considerations together in one place and using a multi-capitals approach to decision making, is that all-round best choices can be made. She extends the chalk example to consider what infrastructure might replace the abstraction, were it to be turned off: while desalination might be cheaper and quicker to build initially, a reservoir might be a better choice considering net present value, capability of offering wider ecosystem service benefits, and taking the many wider societal benefits into account. “It’s about

making the right choices, in the right place, with the right data,” she observes.

Co-creation

In making these choices and getting the plan to the draft stage, South East Water has studiously sought a wide range of perspectives. Employees – from management to new starters, household and business customers, third party governance groups, and expert stakeholders including universities, Rivers Trusts and British Geological Survey have all been heavily involved, as have regulators and government. Along with more usual research techniques, the company employed creative options. Goddard says part of the customer research, for instance, was “like Gogglebox” with participants’ reactions to climate documentaries studied.

She reports that biodiversity emerged as the clear priority from the expert stakeholders. While for customers, perhaps the most striking finding was that while awareness of environmental issues was extensive, “water wasn’t part of it”.

The draft plan pulls all of these perspectives together and identifies three priority themes, as set out in the table. Each theme has associated outcomes, goals and targets. The plan clearly identifies how these map onto wider strategic environmental themes, and uses a ‘high/medium/low’ ranking to make it clear which actions will contribute to the achievement of

South East Water’s new 25 Year Environment Plan pulls all green considerations into one place so they can be considered holistically and, where necessary, traded off.

which themes. Goddard says three ‘highs’ might be considered a sweet spot, “helping with resilience in the round”.

Co-delivery

There is a fourth, cross cutting theme which seeks to further the co-creation approach by studiously inviting others to co-deliver the desired outcomes and targets in partnership. South East Water will play its part, and is calling on others to submit their ideas, use their strengths and pool resources to get to the collective goals.

Now Goddard and her team want to hear from anyone and everyone with a view before they produce a final plan towards the end of June. Key questions include whether there any gaps in the thinking and whether the short and long term targets in the plan are right. Goddard shares that she is particularly keen to hear about what to prioritise beyond statutory obligations, given “we would not have the money or the time to do everything”.

The intention is to update the 25 Year Plan every five years. [TWR](#)

OVERVIEW OF PRIORITY THEMES

Theme	Commitments include:
Resilient safe water, now and into the future	Demand reduction; abstractions do not negatively affect the environment; resilient water resources; ensure land use supports groundwater recharge; protect raw water quality and infrastructure; manage resources sustainably; understand changes to catchment land use and its impact on water supply; assist other abstractors/dischargers.
Protection for climate change and environmental hazards	Net zero operational carbon and reduced embedded carbon; minimise energy demand; improve climate change monitoring; value natural assets; make long term investment decisions; effectively recharge aquifers; improve raw water quality; ensure new infrastructure has a positive impact on the environment and communities; provide amenity access.
Sustainable business – enhancing nature and heritage, reducing waste and resource efficiency	Reduce emissions and energy and chemicals usage; support household and business customers and the supply chain to reduce waste; biodiversity net gain; protection for priority habitats; develop an invasive non-native species strategy.
Cross cutting theme: Innovation and data sharing through partnership	Embrace innovation, partnership working, citizen science and data; work holistically; share knowledge and take an open data approach.

20/80 VISION

Defra sets water demand and phosphorus reduction targets for 2037

Defra and Natural England have published three long term, statutory environmental targets for water, as part of the package of green targets for air, water, resource efficiency and biodiversity promised under the Environment Act. The water targets, open to consultation until 11 May, are:

■ **Water demand** – Reduce the use of public water supply in England per head of population by 20% by 2037 against a 2019/20 baseline.

■ **Nutrient targets** – Address the two principal sources of nutrient pollution by 2037:

➤ Reduce nitrogen, phosphorus and sediment pollution from agriculture to the water environment by at least 40% by 2037 against a 2018 baseline.

➤ Reduce phosphorus loadings from treated wastewater by 80% by 2037 against a 2020 baseline.

■ **Abandoned metal mines** – Reduce the length of rivers and estuaries polluted by target substances from abandoned mines by 50% by 2037 against a baseline of around 1,500km.

Also relevant for water in the consultation was a legally binding target for species abundance by 2030, with a requirement to increase species populations by 10% by 2042.

The policy makers said they had targeted 2037 for the water goals, a shorter timeframe than several other target areas, in recognition of the fact that improvements in the water environment will support the delivery of the wider suite of proposed targets, including species abundance. They noted the targets would also support wider ambition under the Water Framework Directive, the 25 Year Environment Plan and the UK's international commitments to protect 30% of land and sea by 2030.



Putting the target on a per capita basis means any reductions achieved could be negated by population growth



Defra added that it would shortly outline its ambitions to reduce the harm caused by storm overflows in the Storm Overflows Plan (see p4).

More details about each target of direct relevance to the water industry are below. The Government response to the consultation is expected in early summer.

Water demand

The consultation argued the proposed level of ambition (20% reduction by 2037) was chosen to deliver the level of demand reduction needed by 2050 – two-thirds of the extra 4bn litres of water a day expected to be required by then.

It explained: “We have arrived at the figure of a 20% reduction in the use of the public water supply per head of population by modelling a consumption level of 122 litres per person per day (l/p/d). This extends beyond the existing commitments to 2025 which aim to reduce domestic water consumption on average from 138 l/p/d to 132 l/p/d. The target of a 20% reduction in public water supply will require a 31.3% reduction in leakage (from 2017/18 levels) increased from 19% by 2025 and require the new additional target of a 9% reduction in non-household demand by 2037.”

It would, the policymakers argued, drive action “towards reaching the 110 litres per person per day we need to meet by 2050 as set out in the National Framework report”. They said the new statutory driver would ‘add value’ to existing non statutory ambitions including company pledges to cut leaks in half by 2050 and

planning assumptions based on reducing household water consumption to 110 litres per person per day by 2050 (see box), and would ensure all aspects of water consumption are involved in the demand reduction push, notably bringing non household consumption into the picture alongside household consumption and leakage. There was, however, little explanation of how the 9% non household reduction sub target had been arrived at, nor how it would be applied in the market or to whom (see p30).

The chosen metric is Distribution Input (DI) over population rather than solely DI on the grounds that this will “help to measure and improve water efficiency trends over time” and will “take into consideration the uncertainty around future population, housing needs and economic growth”.

Defra said on top of existing levers, it plans to introduce new mandatory water efficiency labels on water using products and consider how building regulations can promote efficiency, to support delivery of the proposed target.

Water efficiency specialists were highly critical of the ambition. For instance, Daniel Johns, managing director of Water Resources East and chair of the UK Water Efficiency Strategy Steering Group, tweeted that the target was “pathetically weak” and in practice means “no action at all”. He explained that putting the target on a per capita basis means any reductions achieved could be negated by population growth. He also argued the proposed target could be met by water company leak-

age reduction plans and less action than they are currently planning on household consumption, with no action at all from the non household sector.

Nutrient reduction

The consultation said agriculture is responsible for 70% of nitrates and 25% of phosphorus in watercourses, while wastewater discharge accounts for 60-80% of phosphorus entering rivers nationally.

The water sector target on phosphorus is intended to stimulate investment in nature-based and catchment-based solutions, hence it is not tied to treatment at sewage works. Water companies were not given a nitrogen target on the grounds that most of that pollution originates from agriculture and that it would lead to “very high-cost nitrogen removal from wastewater treatment work for highly uncertain environmental benefits”.

According to the consultation: “During the period of 2020-2027, water companies will undertake projects to deliver a phosphorus reduction of around 50% against a 2020 baseline. We want to see a higher level of ambition and propose setting a longer-term target to build upon this progress. Beyond 2027, this will involve setting the strictest Technically Acceptable Limit, the tightest limit for Environment Agency permits, across 400 wastewater treatment works serving a population greater than 2,000. This means undertaking the more challenging and costly projects that have not been included in the current planning period.”

Protected sites

On top of the general targets, Defra published a policy paper on reducing nutrient pollution in protected sites – those in an “unfavourable condition” due to nutrient pollution. In these areas (previously affecting 32 local planning authorities but extended last month to an additional 42), housebuilding and other development can only take place if ‘nutrient neutrality’ can be demonstrated. This means if new nutrient load that would result from a development is mitigated through, for instance, new wetlands to strip nutrients from water or by creating buffer zones to revert to nature. This has had a significant negative impact on the number of homes granted planning permission in affected areas.

Defra said: “The government is clear that this can only be an interim solution.” It put forward a package of support measures in the policy paper. These included:

- Practical support – catchment specific calculators to help developers identify the amount of mitigation required; a new framework from Natural England to assess mitigation effectiveness; £100,000 of public funding per affected catchment to pay for more catchment officers; and support for nutrient markets, including nutrient trading pilots with Entrade in Somerset and the Solent. Moreover, Defra reported: “Ofwat is developing a proposal that could enable water companies to directly accept developer contributions for improvements to wastewater treatment works as a means of mitigating nutrient loads from new developments. The secre-

tary of state for Defra and the regulators will shortly be writing to water companies with a call for evidence to identify suitable projects - along with attendant costs, benefits and risks - that could be funded by developers in the current water company price review period (2020 to 2025).”

- Financial support – Defra welcomed “proactive investment” totalling £24.5m from Severn Trent, United Utilities, South West Water and Yorkshire Water in strategic solutions to reduce nutrient pollution, including nature based solutions.

- Legislation – Defra said it would explore legislation to further strengthen requirements to reduce nutrients at source, potentially via the Habitats Regulations Assessment process.

Elsewhere, the nutrient pollution policy paper pointed to: the £2.5bn being spent in AMP7 on measures to reduce nutrient pollution from wastewater; requirements for statutory Drainage and Wastewater Management Plans in the Environment Act; and the new SPS for Ofwat which makes it clear “that Ofwat and water companies should consider nutrient pollution in line with their environmental duties (which includes the Habitat Regulations), and that water companies should be challenged to prioritise improvements to protected sites and to work with wider stakeholders to support efforts to tackle nutrient pollution”.

It also highlighted that Natural England will launch five Protected Site Strategy pilots in spring, each with a tailored package of measures to tackle pressures in catchments, including nutrient pollution. **TWR**

NATIONAL INFRASTRUCTURE COMMISSION CALLS FOR POLICY PUSH FOR PER CAPITA CONSUMPTION

The National Infrastructure Commission (NIC) has recommended as one of its top ten priorities for 2022 that plans for reducing per capita water consumption to deliver the targeted 110 litres per person per day by 2050 are strengthened and progressed.

In its *Annual monitoring report for 2022*, the commission noted there has been some progress since its first National Infrastructure Assessment and associated recommendations: on leakage (performance and forward targets) and developing new supply side infrastructure via the RAPID process. “But per capita consumption, already at unsustainable levels, is not yet falling.” In fact, per capita water consumption increased to 155 litres per day in 2020-21, from 143 litres per day in 2019-20.

The Commission continued: “The sector has set ambitious targets, and published draft regional plans for future water resources, but

it is not clear whether the government’s new policies will support the reductions needed.” The NIC noted the Government had not accepted its recommendation for mandatory metering, instead announcing: mandatory water labelling; a roadmap for water efficiency in buildings (both due this year); ‘encouraging’ local authorities to voluntarily adopt a tighter standard of 110 litres per person per day for new build homes where appropriate, versus the current 125 litres; and designating additional ‘areas of serious water stress’, where water companies can introduce compulsory metering where this is cost effective and has customer support.

According to the NIC: “Taken together the recently published draft regional plans for water resources will struggle to achieve the 110 litres per person per day target set out by government in its Strategic Policy Statement without

further government action at the national level”.

Other NIC priorities for 2022 included: an urgent need for a comprehensive energy efficiency push to insulate homes; the need to accelerate the roll out of electric vehicle charging points to ensure the 2030 date for the end of the sale of new petrol and diesel cars remains viable; and for big decisions on how the net zero transition will be funded.

Writing in the report’s foreword, Commission chair Sir John Armitt said: “At a time of significant global volatility alongside concerns about rising living costs, we appreciate that sticking to a long term strategy is not easy. But it is the only way to address the stubbornly difficult problems that will not become any easier or cheaper to solve by delaying action – and the quicker we tackle them, the quicker society and our environment will reap the benefits.”

SMART MONEY

The evidence base is burgeoning for investment in AMI to make the cut at PR24.

The case for Advanced Metering Infrastructure (AMI) in water seems to grow with every development. Just this month, some of the scenarios in Water UK's Leakage Routemap depend on it (see p14), and we now have a statutory demand reduction target coming in under the Environment Act (p10).

Last year, seven more areas were designated as seriously water stressed, and a report commissioned by communications infrastructure provider Arqiva demonstrated an unequivocal cost benefit case for all water companies to invest in smart meters for household customers. This month, that case was strengthened by a report commissioned by MOSL which points to further cost benefit for wholesalers to invest in AMI for large users and other business customers where household rollout is taking place (p26).

Hard evidence

Real world evidence of benefit is also starting to come in. Arqiva recently announced that it has added the millionth AMI smart water meter to its fixed nationwide tower network, and that these meters could be saving over 66m litres of water a day through improved leak detection, more detailed insight into water consumption and greater consumer engagement – with the associated environmental benefits.

First mover in the UK Thames Water has been collecting hourly data from its smart customers (620,000 and counting) since 2015, spurred on by the need to cut demand. Water demand reduction manager Andrew Tucker explains the choice: "It's about the additional leakage and the additional usage reduction that we will get from having a smart capability as opposed to the traditional meter system. That additional water saving was enough to justify the additional investment."

Seven years on and he says adopting AMI was "the best choice". "We have to save water, and stop leaks. The insight from the data is showing so many more leaks, particularly from the customer side...Historically, that water balance

puts all that lost water on to us – whereas a lot is on the customer side, especially inside the home. So we're getting a more accurate water balance." He adds that the frequency of the data collection means customers can be notified of leaks in two days rather than having to wait for up to 12 months, and that 70-80% fix their own leaks within a week.

Tucker makes a topical observation too: that recent rises in the price of fuel and wages are hitting companies with AMR meters that require drive-by reads, and in some parts of the country monthly reads have slipped to three or six monthly. Whilst AMI provides greater cost benefit, the current economic climate does impact the sector's ability to invest in these larger capital programmes.

Beyond these vital basics, there are also more creative uses of smart data coming through. In its recent *Smarter ways out of water poverty* study, for instance, Thames reports that smart initiatives are helping households with affordability indicators and high water usage (more than 500 litres per day) cut £40-£166 from their annual bills, a reduction of 8-17%. Meanwhile, Anglian Water is working on a pathfinder project with MOSL to investigate the feasibility and benefits for the retail market of sharing monthly smart meter reads direct to CMOS (p29).

PR24 prospects

So what can we expect to see on smart metering in water company business plans for PR24? There will, undoubtedly, be more attention to smart metering than in the past.

Thames wholeheartedly recommends making the leap to smart on a leakage ticket. Tucker counsels: "The best thing the country can do to reduce demand is smart meter everything and engineer out continuous flow. Before you even tackle trying to change behaviours which is very difficult – just stop the water loss."

He advises other water companies to "go for it" on AMI, pointing out the drivers are already there in leakage pledges. "Don't let the potential of a next genera-



tion in technology stop you from getting in now. Just make the call and then upgrade in the future. Start the journey"

Cost pressures

But justifying the investment in PR24 business plans, and securing support for sufficient investment from Ofwat, will obviously be a prerequisite of delivery.

SES Water has had an interesting experience in this AMP relating to costs and funding. The company has committed to move from 60% meter penetration in 2020 to 90% in 2025 under a universal metering programme. It had intended for at least 10% of the new meters to be AMI, and potentially more.

Wholesale director Tom Kelly does not need convincing of the benefits. He shares: "The business case for smart metering is compelling – compelling enough to do smart as standard in this AMP and the next." But now he says SES' ability to deliver even its 10% AMI commitment is dependent on the resolution of supply chain issues – especially the global semiconductor shortage – that have pushed prices steeply up. While the cost of cheaper (c£13) dumb meters has risen by around 10%, the cost of AMI meters (originally £35-£50) has gone up far more substantially.

"We are keen to push forward with smart metering as soon as possible, but we can't hold off the universal metering programme any longer," Kelly says, explaining SES has a Performance Commitment on this, plus it is the last company in the area to move to a compulsory programme. "It's right for us to continue the programme, irrespective of the technology."

So in the short term, SES will push on with dumb/AMR installations and install the 10% minimum AMI meters later in the AMP, when hopefully they will be more economically viable. Kelly says to bear in mind: "We are small, our buying power is smaller, which affects where smart metering providers are putting their time and effort"

Come AMP8, as an indicative direction of travel, SES hopes to secure investment to upgrade and retrofit the c80% of its meters that will not be smart in 2025, so it has 90%+ smart metering by 2030. Kelly says the Arqiva report is “clear and compelling” in its conclusions which is valuable, plus that the new 20% demand reduction by 2037 target should support the case. Part of its plan is to trial smart tariffs from 2030 onwards, as well as to save more carbon, leaks and usage over and above what the universal programme will deliver.

Customer-centric

Northumbrian Water is also looking to increase its smart metering investment in AMP8. Gary Adams, head of the smart programme, comments: “Metering is easy to put to the back of the pile on capex” when it is competing against other needs. “This [AMP7] is the first period we’ve made any significant investment in smart metering”

At present, 44% of Northumbrian Water customers and 66% of Essex and Suffolk customers are metered, with AMI accounting for less than 1%. Investment in the current AMP consists of a £59m spend on 230,000 AMI and AMR meters for household customers, split between optants, replacements and a whole area metering programme in Dagenham. Rather than being a straightforward consumption measurement initiative, the latter explores brand building and customer experience alongside. “Metering is the vehicle for waking the customer up to the brand,” explains Adams.

The company intends to target 100,000-125,000 installations a year after 2025, both household and non household, and is currently tendering for a communications partner to enable a rollout across its three regions. By 2035, the plan is for all existing meters to be replaced by AMI and for all new meter installations to be AMI. Adams cites the drivers as PCC reduction, leakage reduction, enhancing the customer experience, and supporting the net zero journey.

However, he offers a few notes of caution that militate against a headlong rush for smart. First, he says he is “keeping a watching brief on the technology and communications provision – the huge cost is a big challenge”. He hopes to see these costs come down. And second: “A key thing is validation of the impact of smart metering.” He explains that it is still early days in

terms of evidence of sustained consumption reductions and that he is keen to assess the possibility of demand bounce back, and learn more about which interventions work, which nudges work, and which value add propositions are appealing.

Benefits and constraints

For its part, Thames Water has the ambition for all of its connections to be smart metered by 2035. Tucker explains it is currently trying to quantify additional retail benefits to support its PR24 business case. “So what benefit is it going to bring in terms of our ability to engage with the customer more regularly, the quality of engagement, the frequency of engagement, our ability to assist the customer...to reduce their bill? Can these capabilities better help vulnerable customers?...What does that do to C-MeX? What does that do to reduce complaints? And what does that do to being able to bill customers?...Instead of doing a big bill every six months, do a more accurate smaller bill every month. Does that improve the relationship with the customer? Does that assist customer’s ability to pay and does it reduce bad debt on their part? All those things that might come from smart metering, we need to develop that cost benefit evidence.”

Thames will build the case, but Tucker shares that he is concerned about the constraints price capped regulation might impose on the company’s fully smart ambition. “This constrained amount of money is never enough to run, and improve, the network to the level we need, to meet all of the resilience and growth needs – shareholders put money in just to get the basics, to keep the wheels turning. So when you squeeze in all the things you want to do, because the metering bit is not always absolutely core to get water to quality standards and pumped to a house and take away the poo, metering will get squeezed every time.”

And right now, that risk is heightened. “You’ve got so many competing things: energy prices increasing is just a killer. Chemicals doing the same. Any sort of slippage during Covid falls into the next AMP. It all gets squeezed and squeezed – you just don’t have the headroom to do all the things that need to be done for the infrastructure and environment.”

Regulatory asks

Tucker laments that Defra opted not to include anything to drive smart meter-

ing in the Environment Act, commenting that we’ll “lose decades” of progress as a result. Now, he says: “There are two or three things so important from government: a national water target, mandatory water labelling – absolutely crucial. ...and anything that could help fast-track smart metering.”

He would like to see Ofwat address the shortfall in policy. “Because the current regulatory environment is going to be a slow road to smart metering. Stick a target in there – for example, full smart metering by 2035...And have some flexibility within the regulatory assessment process to actually enable it, as opposed to constrain and punish.”

Peter Baker, Arqiva’s director of Smart Utilities Networks, agrees: “Ofwat needs to acknowledge the long-term benefits for leakage, consumption reduction, customer service and the environment that come through advanced smart metering and provide a settlement which supports an accelerated rollout of AMI smart meters.”

Tucker adds: “There is some concern that Ofwat will remove [enhancement allowances for metering] under PR24, saying ‘smart’s normal now’ – no it’s not. Really, really not. The funding enhancement to enable smart systems is so vital.”

Northumbrian’s Adams, meanwhile, argues: “Standardisation and collaboration around PR24 is vital” in terms of smart metering cost allowances. He fears regulatory challenge could result from companies calculating smart meter costs differently in the absence of a mandate or any standardisation. “In my view, this has to be driven by Ofwat, or we risk getting the same challenge back we’ve had in the past.”

Adams adds that, if delivered correctly with customers at the centre, enabling smart metering could also support the sector’s affordability and innovation agendas. TWR



Stick a target in there – for example, full smart metering by 2035...And have some flexibility within the regulatory assessment process to actually enable it, as opposed to constrain and punish

SEALED: LEAKAGE IS SIGNPOSTED

The industry has plotted a path to halve leakage in triple time. Trevor Loveday follows the route.

The outlook for the water sector's leakage pledges is promising, according to a recently published industry report on how it might achieve those goals. *The Leakage Routemap to 2050*, published in March by Water UK, navigates England's water sector towards its commitment to a 50% cut in leakage by 2050 proposed by National Infrastructure Commission (NIC), and its own Public Interest Commitment ambition to triple the rate of sector-wide leakage reduction by 2030.

According to the routemap, the targets are "achievable, but will require changes in the way that leakage activities are done and also funded".

What are those required changes? Front and centre of the routemap is a call for the sector and its supply chain partners to step up their efforts, their collaboration and investment. It calls on regulators and policymakers to provide rule changes and more support in innovation and investment. And it looks to local authorities for a helping hand in the challenges arising from roadworks that are needed to accelerate pipe replacements.

Adaptive pathways

The route map describes four scenarios as possibly arising from developments along the way. Given water companies' differing environmental and geographical make ups, as well as their various starting positions in leakage, the routemap anticipates that they will follow various "adaptive pathways" that move between scenarios: "In reality a water company would not follow one scenario, but use the adaptive pathways approach to move between the scenarios at key points." (See box: Crossroads).

The report emphasises the "significant uncertainty" relating to background leakage and leakage on the customers' side of the premises boundary. And it outlines how that uncertainty might influence the direction of leakage reduction.

Background leakage is, under the routemap, the primary consideration in deciding an adaptive pathway. By definition, it is the level where leakage cannot be reduced further, using current detection technology. Currently knowledge of its extent and understanding of its sources is scant – it is one of the "known unknowns" in the leakage challenge alongside customer-side leakage.

And discovery of its exact magnitude could reveal it as a major obstacle. According to the routemap: "Subject to improving the estimate of background leakage, there is a potential risk that achieving 50% reductions from current levels of leakage by 2050 may not ultimately be possible without some radical changes and progressive policies."

The scenarios are defined by the following conditions:

- There is "limited low hanging fruit" where easy and quick gains are exploited through pre-emptive leakage reduction with no technology-based insight or improvements in processes.

- There are "smarter networks" developed with the supply chain and adopted by all companies to make better repairs and otherwise maximise leak reductions (see p17).

- Growth in understanding and the capacity for insight arises from "data- and asset-focused improvements" whereby the risks and uncertainties are fully quantified and form the basis of water resource management plans (WRMPs).

- There is a shift in regulation towards a position where "progressive policies drive an asset focus." This, the routemap authors say, is based on regulation that is strongly focused on long-term sustainable reduction of leakage and "allows for a dif-

ferent approach to customer-side leakage either through adoption or some other mechanism that ensures leakage on customer supply pipes is reduced."

Further and faster

The routemap was launched last month at the annual Leakage Conference for 2022. Speaking at the conference, Anglian Water chief executive Peter Simpson said: "We've already reduced leakage to the lowest levels on record. But we need to go even further, and even faster. And in the face of accelerating climate change and rapid population growth, the interventions we will make through the routemap have never been more needed."

Simpson and his counterparts at Portsmouth Water, Bob Taylor, and at Affinity Water, Stuart Ledger, have sponsored the development of the report on behalf of the industry. Also at the conference, Taylor highlighted how the difficulty in reducing leakage grows with each success. "There is a lot of effort needed just to stand still so it looks as if we are flattening off. That's something we've not explained well to those outside these circles, particularly to the regulators.

"The routemap isn't coming up with all the answers – there are a lot of unknowns. But it shows we need a new level of activity, innovation and collaboration."

Background leakage

The fundamental nature of background leakage, coupled with the equally fundamental lack of understanding of it, made it the focus of lively discourse at the conference.

Director at WRc and co-author of the routemap, Glenn Mountford, said customer-side losses could stop short the efforts to hit the 2050 target. "There is so much to learn about the customer side. Our records are poor so deterioration of the assets could be a huge risk if industry doesn't take a stance. It could be the undoing of the 2050 goal."

"The level of background leakage and how much is customer side raises crucial and fundamental questions. Modelling shows background level will have a significant influence on getting on the right track so the industry needs a new level of detail," Mountford added.

"We need to get a grip on what is going on there: is it plumbing? Is it supply pipes? Is it weeps and seeps from the network?"



The targets are achievable, but will require changes in the way that leakage activities are done and also funded

CROSS ROADS

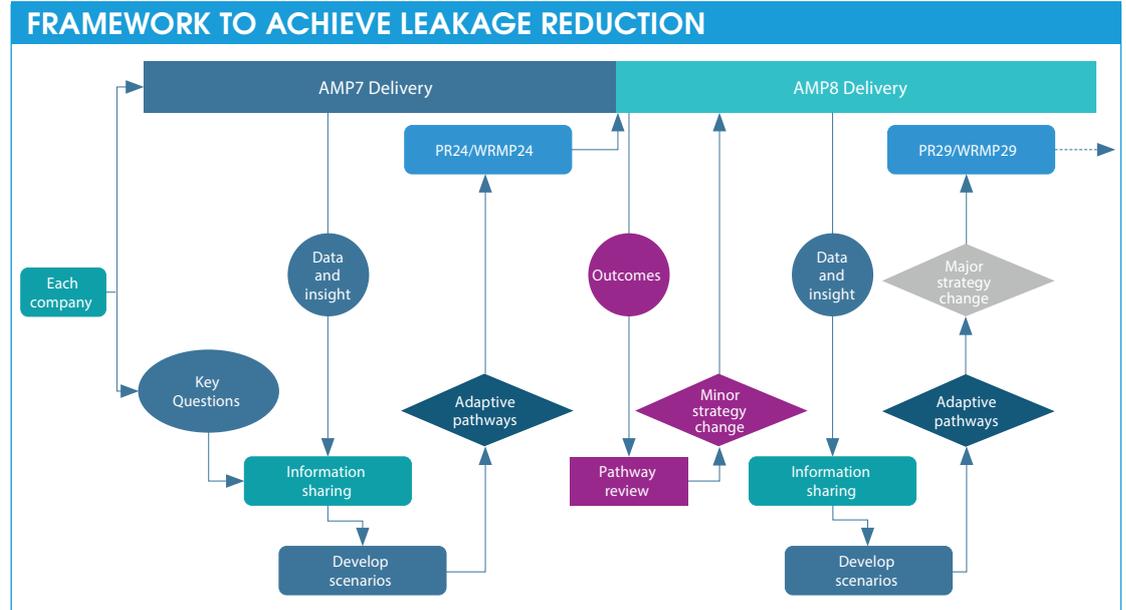
The scenarios are defined largely by developments in technology and regulation. Where anticipated interventions associated with each scenario create demand for items such as sensors and non-leaking pipes, the routemap foresees suppliers stepping up with more advanced and/or cheaper technology. Equally the routemap attributes greater uncertainty to measures that call for advances typically in cost, and risk of shortfalls in performance. All scenarios are based on an assumption that all leakage targets for AMP7 have been reached.

Having defined their scenarios, companies will follow an iterative process to ensure they stay on track in their leakage reduction programme. This is the adaptive pathway approach described in the routemap whereby companies use price reviews and WRMPs to make major changes in their leakage reduction course.

Scenario one – limited low-hanging fruit

At the heart of this scenario is the emphasis on active leakage control – getting to the leaks before they break from the roads instead of reacting to them when they do – often after having run for a considerable time. Pressure management too will be a main intervention in this scenario.

The scenario is predicated also on the assumption that reaching the AMP7 targets has exhausted the easy gains – the low hanging fruit – and in doing so there has been no increase in investment in asset renewal or customer metering beyond PR19 business plans. At the same time it assumes that the roll out of smart networks and other advanced technology is restrained and so too is



insight into background leakage, escapes from customer pipes and other risks.

Scenario two – smarter networks

Here water companies along with the supply chain develop smart technologies and greater efficiency in their processes. The scenario's bases include an assumption that asset renewal is focused on bursts rather than leakage reduction at a similar rate to those under AMP7. Greater investment in leakage under the scenario allows for gains made in AMP7 to run on into AMP8 and beyond, with further efficiencies.

The chief interventions will be improved repair techniques; smart metering and advanced data analytics; smart networks with acoustic, flow and pressure sensors with attendant analytics; and active leakage control – improved through smart insights.

Scenario three – data and asset focused improvements

The focuses in this scenario are expected to drive water company policy changes that lead to greater invest-

ment in pipes renewals, technologies and associated analytics. The scenario assumes that pan-sector sharing of technology and insight will strengthen so all water companies can learn from others' researches.

Smart metering is adopted by all companies under this scenario, feeding hourly readings into a metering infrastructure to remove seasonal uncertainties along with pan-sector smart networks delivering near real-time actionable insight on sensors and other detection resources. Growth in sensor use sparks suppliers to improve performance and costs.

Data from smart developments is expected to

strengthen business cases for stepping up asset renewal to deal with the leakiest stretches of network with leak-free pipes. Other elements of progressive pipe rehabilitation anticipated under the scenario include better lining systems with all lead supply side pipes replaced, while some trunk mains are replaced or lined. And pressure management will be extended to wide areas with networks tailored to accommodate small numbers of properties at high elevation.

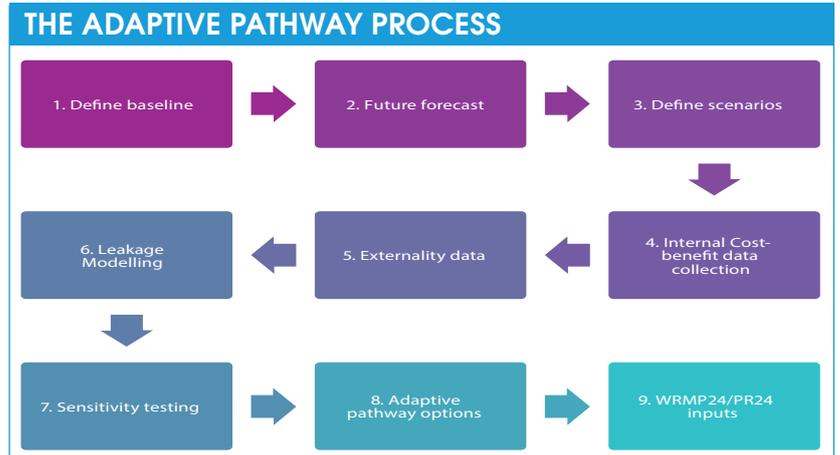
Scenario four – progressive policies drive asset focus

Central to this scenario is a regulatory framework with greater focus on long-term

sustainable benefits and on customer supply pipes.

The new focus is expected to fuel asset replacement that in turn stokes innovation and efficiencies from the supply chain. According to the routemap: "The attitude of the greater good of the industry ahead of inter-company competition, drives a more collaborative nature, where joint endeavours between companies are actively encouraged."

The main interventions forecast are adoption and replacement of customer pipes with smart meters repositioned at the foundations of each property and further progressive pipe rehabilitation.



And how do different policies affect it? It's not just quantification but very much about smart meters and networks."

While all regional plans include a 50% leakage cut, he added: "Upper quartile companies will struggle to achieve 50% without a step change in asset health". He saw a role for advanced analytics in getting to a best value approach, but added: "Progressive measures are more expensive and challenging."

Routemap co-author and director at Artesia, Dene Marshallsay, told the conference that the contribution of supply pipe leakage remains unclear because metering penetration stands at only about 50%. But he offered more positive prospects, saying the push for smart metering promises more granular data. He also pointed to innovative ways in play of picking customer side data from un-metered homes.

Supply pipe adoption?

Perhaps inevitably, the adoption by the industry of customer supply pipes was a prominent topic at the conference. While Defra rejected supply pipe adoption following its consultation in 2013, Marshallsay insisted that the issue is not settled: "Since 2013 we have seen the adoption of private sewers and that has gone remarkably well. So supply pipe adoption shouldn't be put aside as done and dusted; there is a very big debate about that to be had."

He asserted that technologies under trial and installed now, to monitor what is happening in supply pipes, should reveal how much is being lost from supply pipes and how much is actual consumption. And that would form a basis for different targeted interventions. "It's not all about find and fix," Marshallsay said, "it is more about behaviour and education in the home."

Routemap co-author and technical director at RPS, Joe Saunders, suggested that new approaches to adoption or adoption funding could be the way forward. On the other hand he asked whether it might lie in "creating a better-informed customer base who are aware that the pipes are their assets and they have to look after them. How would we do that?"

Meanwhile, supply pipe leakage has been pushed down the timeline in the routemap because, according to Marshallsay, the need for it isn't urgent. He explains, however, that while we don't need a decision now we do need to know more about it. "It needs to be addressed because supply pipes are not being maintained by anybody and they will fall apart."

"Once we know what is happening in every supply pipe perhaps we will come up with a more targeted approach as things become more clear in time. So let's see what innovation brings – whether we need adoption or not there will probably be other solutions."

Saunders added: "It's not realistic to adopt in the near future because so much more information is needed. We should take a decade or so to make sure the right decision is made."

Collaboration and innovation

Beyond background leakage the conference explored other influences on the programme to achieve leakage targets. There was repeated emphases on the need for shared knowledge not just from water companies and their supply chains but also the regulator to inform decisions on interventions. Marshallsay highlighted the urgency to demonstrate collaboration and sharing to avoid duplication: "People are trying different things; they need to not do all of them individually."

Saunders said: "We need to know when to change pathway – for example when we can no longer do cost effective active leakage control because our arms are not long enough to reach the lowest hanging fruit."

He held up the need to end the focus on bursts; to target leakage better; and to lay leak-free networks: "We need data not just for bursty pipes but leaky ones too. And let's put non-leaky replacements in with joints that don't fail in five years. They should last 150 years if installed properly; otherwise they are a problem tomorrow," he warned.

Saunders said the water industry urgently needed an influx of new thinkers and practitioners. "What we need from the supply chain is big. There is a brain drain from the industry as people retire. We need graduates not just in the supply chain but also in water companies – we need to inspire them to come along," he said adding arguably the greatest conceivable challenge to the sector: "We need

make them see that leakage is cool."

Mountford pointed to "unintended consequences" from regulation with the example of how supply interruption performance measures impeded the use of pipe relining with penalties for interruptions exceeding three hours – the same period needed to cure current lining material: "Regulation isn't too helpful – it's all but killed off the relining market."

And an essential and repeated assertion at the conference was that making the 2050 reduction target achievable and affordable will call for investment in innovation. An additional spur to that is possibly in play in Ofwat Innovation Fundwinner, Spring.

It looks to accelerate collaboration and innovation by providing a hub for problem solvers and those in need of solutions from water companies, supply chain and academia. Spring managing director, Carly Perry, told the conference how Spring was emerging from its formative stages and promised to "work with experts and water company stakeholders to facilitate transformational ideas and mobilise collaboration in winning ideas."

Inflation and risk

While the aspirations for 2030 and 2050 are probably achievable, some of the toughest challenges they bring will be financial. Saunders asserted this point and its growing intensity as global inflation takes its toll: "We need to make a step change to reduce leakage and that will cost money. And that's customer money which is even more of an issue in the current economic context."

He went on: "We have done the national costs modelling but we need local costs. Everyone needs to look how their costs fit in; doing mains renewal in central London is very different to doing it in central Wales."

Dealing with leakage is calling on the entire water sector – its companies, suppliers, regulators and policymakers – to make fundamental change in the ways it has worked. It is being called upon to make decisions swiftly, radically and collaboratively all of which comes with more of arguably its least favoured challenge: "We are a risk averse industry but reducing risk in leakage will require key decisions in the next year," Saunders pointed out.

Ultimately it must develop more appetite for risk to avoid biting off more than it can chew. **TWR**



People are trying different things; they need to not do all of them individually

NEAR REAL TIME NETWORK

SES Water has claimed the industry lead in becoming the first water company to roll out leak-busting intelligent technology across its entire water distribution network. Wholesale director Tom Kelly enthuses: “We’re a small water company on the south side of London, exploring the next chapter on what’s possible.”

He explains that from running its network in a “comparatively traditional way” three years ago, the company has been working ever since on a smart programme, and has now installed intelligent loggers in its 300 DMAs, each of which serves around 900 properties. Technology has supplied the loggers, which are currently monitoring flow, pressure, transients and water temperature.

The resulting data is collated by SES “on a minute by minute basis, so near real time,” Kelly explains. This is being facilitated by Vodafone, via its Narrow Band Internet of Things (NB-IoT) service.

Analysis of the data, to inform rapid turnaround operational decisions, is being undertaken by Royal Haskoning-DHV’s *Aquasuite* AI-powered self learning technology. “It does the job of a team of analysts”, Kelly observes, adding that the system started to learn what a normal pattern is for the network within the first few days of operation. In fact, the team has already made some key interventions in the network as a result of the analysis.

SES took the leap to smart in acknowledgement of the fact that its PR19 final determination is challenging and its business plan stretching. Kelly reports: “We were not entirely successful in our PR bid. We’ve had to work with the funding we’ve got. Ofwat’s challenge for companies to be more innovative in delivering the benefits of their plans is something we have absolutely embraced here.”

He explains that funding that was intended for other elements of network management was diverted to pay for the smart network rollout, because the company is convinced the investment will be justified by the range of benefits to be reaped.

Multi-benefit investment

Reduced leakage is top of the list of benefits that SES is pursuing, to support its

plans to cut leaks by 15% by 2025 and in half by 2045.

The self learning network will highlight issues in near real-time, enabling far faster response times when incidents occur. Kelly says it typically takes ten to 12 days from a non-visible leak occurring to it being fixed, roughly four days for each of detecting the leak, locating it, and fixing it. The new intelligent network has demonstrated it is possible to slice the first two elements from eight days to around four hours.

The first part is already operational. With two or three smart sensors installed in each DMA, the system will raise an alarm within a couple of hours if a burst is registered. SES now plans to add further sensors to each DMA, so each has up to seven. This will enable triangulation and faster location of where exactly within the DMA the burst has occurred. Kelly says it should reduce the detection area by 75-90%.

Beyond leakage, the company is anticipating there will be lots of additional benefits that will improve its Performance Commitment scores. In fact, says Kelly: “The smart network was always considered to be something to have multiple benefits.” These include reduced risk of supply interruptions, water discolouration problems and pollutions from burst mains. Operational carbon emissions will be suppressed by both producing and distributing less water, and by driving around less to locate leaks. Less water will need to be abstracted as less is lost.

On the customer side, Kelly anticipates better satisfaction and therefore improvements in SES’ C-MeX and R-MeX performance, and in due course, B-MeX performance. “We’ll know about things in the network before customers do,” he says, explaining this means, in some instances, problems can be addressed before they even impact customer experience.

Tip of the iceberg

While these benefits seem rich in themselves, Kelly believes they are but the “tip of the iceberg of what’s possible”. SES is planning to “push the boundaries of the system” provided by Royal Haskoning-DHV, working with its partner to refine operations and to expand operational capability. “We’ll test and learn whether

SES Water now has an intelligent distribution system, vastly speeding up its leakage response and promising a lot more.

existing parameters work well for us. If we can better calibrate the model, it will become more beneficial.”

More parameters – such as weather conditions, for instance – could be added to the AI system, so “the level of sophistication and the accuracy of the model will grow and grow”. Loggers could be modified to include water quality monitoring. In time, the system could detect the risk of bursts before they happen, optimise abstraction choices given SES operates an interconnected single supply zone, contribute to network resilience and inform corporate investment decisions.

SES will, Kelly confirms, “be as transparent and upfront as we can possibly be” as it makes these discoveries, to ensure learnings and benefits are made available to other water companies and stakeholders. **TWR**



Tom Kelly

We’re a small water company on the south side of London, exploring the next chapter on what’s possible

SOURCE TO SEA

To align with likely AMP8 needs, Galliford Try has added asset maintenance and optimisation capabilities to its traditional asset creation expertise, as Steve Slessor explains.

“Galliford Try is now one of, if not the, biggest contractor in the water sector, and we’re continuing to invest,” says Steve Slessor, managing director of Galliford Try’s Environment business unit.

Galliford Try is a long-established player in water, and as one of the UK’s leading construction groups, has traditionally majored in design and build (D&B) work for water companies. That will very much remain a core offering, but the company is now significantly expanding in scope and evolving its capabilities to match the needs of the water industry it serves. It is pursuing a new strategy, called Source to Sea, in recognition of the fact that the company is now working across the whole water cycle.

“There’s nothing we don’t touch now,” observes Slessor. “We’ll always do D&B. But also, we’ll do capital maintenance, asset optimisation and more. We’re one of the few contractors who can work from the Shetlands to the Scilly Isles delivering full turnkey products. It’s a good place for us to be.”

In fact, he goes as far as to say that rather than its traditional asset design and creation offering, “asset management and optimisation is our future”. He elaborates, with a surprising revelation for a construction company: “Increasingly these days, we’re looking to build nothing”. He explains that optimising existing assets can offer multiple benefits to water clients, including savings in operational budgets if power and chemical use can be reduced, lower emissions and creating headroom in capex budgets.

Slessor says there remains a lot of opportunity for water and wastewater assets to be optimised, despite the fact that totex and whole life cost approaches have been in play for some time now. Few water companies, he observes, have “taken full advantage” of that to date, with old habits forged by separate operating and capital departments dying hard. It is, he reports, significantly behind the oil and gas sector on this, where totex has been enthusiastically embraced already. But experience is growing and Galliford Try is, for example, working with multiple water companies across the UK and other partners to develop test projects.



It would be helpful if the regulator had a forum for contractors to contribute directly. Ofwat is pushing water companies to do more with less, and that will need different incentives

Gaps and openings

The transition from D&B specialist to Source to Sea provider is already well underway. Galliford Try initially started work to reassess its strategy a couple of years back, but Slessor accelerated the activity when he succeeded Ian Jones as Environment business lead in February 2021. He comments: “Clients’ budgets are getting tighter, with more stringent regulatory challenges adding increasing funding pressures to programmes. When I came in, I thought ‘we actually we need to start doing this now’”

Strategic consultant Amane Advisors was commissioned to research pertinent issues including priority water sector challenges; how Galliford Try is viewed by clients; and how it compares with competitors. This work was conducted between March and May 2021.

Among the major sector challenges identified were ageing infrastructure, climate change resilience, increasingly stringent environmental regulations, the need to transition to net zero carbon, issues relating to capital programme affordability, and the need to digitise the asset base. Slessor comments: “What the research has shown is that the challenges water companies have align to our priorities.”

Collectively the results of the research helped shape thinking on diversification: where to grow operations and how to approach change – including potential acquisitions and partnerships for inorganic growth, and requirements and capabilities for internal innovation. Slessor says key gaps were found, notably in mechanical and electrical and capital maintenance competencies.

Action in response was prompt. The company started actively looking for growth opportunities. It achieved a key milestone last year when it acquired the nmcn water business. With 900 extra staff brought in, Slessor says the deal gave Galliford Try “capital maintenance boots on the ground” and, with only one client common to both entities, expanded geographical and client coverage with very little duplication. It also positioned the firm for further growth in capabilities nmcn specialises in.

Galliford Try has other companies that further Source to Sea objectives in the stable too, such as Lintott Control Systems which specialises in electrical control panels and chemical dosing systems and is moving into design for manufacture and offsite assembly. Slessor says the company is proactively considering further acquisitions to continue its march towards a complete water service offering.

AMP7 landscape

Clearly the company has commercial drivers behind its strategy – to increase revenue and margin, and not be left behind as water contractors evolve. But says Slessor, it is also in response to changing water industry demands. First, as indicated, solutions which don’t involve asset creation offer more in the way of multi-capital benefits – including for instance on carbon, which is an industry priority.

Secondly, and importantly, they help respond to capital programme affordability concerns, given resources are constrained by tight PR19 final determinations. Slessor reflects: “It’s ironic

really...investment in AMP7 has been slow to mobilise partly because of clients' cost concerns. The consequence, with inflation and resource availability, is costs will continue to rise and that's not going to change any time soon. So, speed is of the essence."

The delays have put programmes under pressure as we approach the start of the third year of the five-year cycle. "Now the pressure is on to develop the AMP programmes quickly – clients have targets and so on, and there's a lot of work out there right now, but we've got a lot of work on already and the number of competent contractors has reduced." He cites in reference to this the exit of Balfour Beatty and Skanska, traditional contractors in the water space who have opted to focus their efforts in other markets; and greater consolidation as displayed in Galliford Try's nmcn acquisition and RSK's ongoing buying spree, including of Binnies.

As a consequence, "Some water companies have looked beyond the traditional Tier 1 contractors, but the risk there is that other parts of the supply chain may not be as experienced at managing complex or extensive projects and so the clients are having to invest more in project management."

The whole landscape, he argues, is very tight, on top of which there is major competition for skills from other projects like Hinkley and HS2. "Resources are the biggest risk to the progress of the AMP," he warns.

He continues: "Some clients realise this isn't sustainable. I wish they all would." He highlights Scottish Water. Its regulator, WICS, has allowed sustained price increases, in part in explicit recognition of asset maintenance and replacement needs. "Scottish Water is starting to see the benefit now, and so are we." Its



adoption of rolling programmes provides precious visibility to contractors, which enables forward planning and flexibility.

AMP8 positioning

Back in England and Wales, Slessor says it's just too early to say how AMP8 might look, given discussions on the framework and methodology are still live. But, he believes, it is likely to feature more capital maintenance and hence Galliford Try's diversification strategy to include asset optimisation, product standardisation and DfMA across its UK-wide portfolio.

Galliford Try has identified five key principles to follow as it extends and embeds Source to Sea, to strongly position itself for AMP8 and beyond and increase profitability

(see box). These are a key part of the group's Sustainable Growth Strategy which targets growth in existing and adjacent markets.

Slessor's key ask of the water industry as it prepares for the next five year period is: "Get together and have one set of technical standards." This would, he argues, result in massive efficiency benefits. "It makes it difficult for us to be more efficient, when we have 11 different clients working in 11 different ways." The variation is a result of history and legacy, but as companies and their contractors are asked to deliver even more for less, every opportunity for efficiency must be seized.

His key ask of Ofwat is to open up to contractor views and contributions. "The regulator is not that receptive to contractors as individuals," Slessor observes. Galliford Try currently works through membership and discussion forums but: "It would be helpful if the regulator had a forum for contractors to contribute directly. Ofwat is pushing water companies to do more with less, and that will need different incentives." **EWWR**

SOURCE TO SEA PRINCIPLES

1. Laser focus on operational excellence in existing frameworks. This will, says Slessor, "make the most of the work we've already got" which is significant in volume: £350-400m a year for the rest of AMP7. He explains there will be multi-pronged delivery, featuring digitisation of the business, data-driven decision making, investment in training and recruitment, and pursuing excellence in integrating its operations across the entire asset lifecycle now these extend well beyond D&B.

2. Identify growth opportunities and re-shape the business accordingly. While the nmcn acquisition has delivered a tranche of capabilities, Galliford Try will continue to scrutinise and respond to the market, and in particular re-evaluate its offerings once PR24 outcomes are pinned down.

3. Offer digital integration and solutions for wastewater catchments. Galliford Try will grow and provide digital advisory services, deliver in-

stallation and manage digital operating models. This will support the full lifecycle of water assets to address several unmet needs such as reducing energy and chemical consumption of wastewater treatment plants and underground asset management and renewal. It is already using its in-house digital twin capability to realise this part of the strategy and will continue to invest in it.

4. Differentiate as the greenest construction partner. Galliford Try has signed up to a range of sustainability commitments including to reach net zero for Scope 1 and 2 emissions by 2030, and for Scope 3 emissions by 2045. Slessor comments: "This is so important, not only from a business perspective but also from a social and moral perspective. Personally, this is important to me, we've all got to do what we can." He reports Galliford Try is working towards PAS2080 accreditation "to live" the ambition. As well as being the greenest, Galliford Try has a sustainability commitment to grow social value as a percentage of turnover year on year.

5. Develop alternative commercial models with utilities. Galliford Try is eager to explore opportunities being created by the likes of Direct Procurement for Customers (DPC) policy. Slessor says Source to Sea will position it to be widely active as new markets develop. "People will probably think we're only interested in D&B in DPC, but actually we could go across the space," he says, listing capabilities in investment, engineering and other areas, and pointing out the company is already delivering through equivalent outsourced models in the highways sector.

Slessor envisages that competition could go well beyond what current DPC policy sets out: "I see a point in time towards the end of AMP8, into AMP9 where water companies could use DPC for asset operation and maintenance as well as finance and build." He says Galliford Try already does extensive facilities management work, so outsourcing operations and maintenance competitively would be "new to water companies but not new to the market".

NEW ERA IN WATER SECTOR COLLABORATION

Dr Mark Fletcher and Chris Loughlin reflect on the strengths of the newly merged British Water and Water Industry Forum.

On 1 April 2022, British Water and the Water Industry Forum announced the much-anticipated merger of our two organisations was complete. By joining forces, we've created an even stronger organisation that can deliver ever greater value for all our members, key stakeholders, partners, and the sector as a whole.

There is tremendous synergy to be gained from bringing our respective strengths together.

We are two strong, respected and financially stable organisations that, together, can provide a single point of focus in the water sector, with our four forums addressing both the UK and international water markets. The merger will provide efficiencies through eliminating duplication of effort, broadening our membership and opening access to our combined range of services.

Our combined organisation will provide insight into the technical issues facing the water sector and, through our independent Water Industry Forum, enable conversations to occur that otherwise would not happen - thus stimulating innovation and challenge-led thought leadership.

We began exploring the possibility of a potential merger in 2020, and following detailed discussions and due diligence, it became clear to both Boards that the timing and rationale for us to pool our resources and come together were so strong that in 2021 we recommended to our respective members that we proceed with a merger.

It has been made possible through the commitment of a key

team of senior representatives from British Water and the Water Industry Forum, under the wise and dedicated leadership of Tony Conway, a highly respected non-executive director of both organisations.

United to face challenges

Affordability of water, pollution of our environment and management of our water systems increasingly requires a more streamlined and collaborative approach, focused with greater common purpose across the range of businesses, regulators, organisations and agencies within the water sector, and those with dependencies and inter-dependencies on water systems.

This unified and collaborative approach will assist the water sector to meet the complex challenges of climate change, ageing infrastructure, and increased regulation and public scrutiny head on by creating a stronger, more influential voice for the industry - putting us in the best possible position to help shape the future direction of the UK water sector at this critical time.

By bringing the key organisations within the sector together, it demonstrates willingness to collaborate, co-operate and work together at a time when the impacts of climate change and associated global warming and the challenges across the water sector necessitate a much more collective and

focused response than we have had historically.

Our merger will increase the range of services we can offer, strengthen membership support, and enhance the opportunity for challenge-led thought leadership - providing greater authority and a stronger voice both nationally and internationally - elements that are only growing more essential in the current economic climate.

It also provides a growing platform for the merged organisation to become a leading player to help bring coherence, focus and collaboration across the water sector and will help to catalyse closer working with other industry bodies and organisations in the longer term to help unify the sector.

Independence and neutrality

A proposed operating model and governance framework have been developed to support the activities and priorities of the merged organisation, and importantly to preserve the Water Industry Forum's integrity and independence - enabling it to maintain the trust and respect it enjoys throughout the sector.

The Water Industry Forum will remain as a limited company, operating as a subsidiary of British Water. Its Management Board will be bound by a Code of Conduct guaranteeing its independence and neutrality, and its directors will also be required to adhere to a Code of Ethics, with everyone's integrity and impartiality assessed on an ongoing basis.

It is proposed that a harmonised subscription model will be introduced during a post-merger



Dr Mark Fletcher is chair of the Water Industry Forum, and Chris Loughlin is chair of British Water.

transition period. Subscriptions will increase for a small minority of members, with any increase phased in over an extended period.

The future of the sector

The merger of our two organisations also aligns with the direction of travel throughout the water sector. For example, Water UK's discussion paper *Developing a 2050 vision for the water sector* describes a need "for the sector, government and regulators to build on current areas of joint work and collaborate more effectively to accelerate the rate of positive change. The status quo and incremental approaches will not be enough."

This sentiment is underpinned by a questionnaire across the UK water sector representative organisations co-ordinated by the Water Industry Forum, which demonstrated an overwhelming support for closer working and increased collaboration. This merger demonstrates a major step forward, providing momentum for much closer co-operation and collaboration.

BW and WIF have proud histories of achievements, for and on behalf of their members and the sector.

We know that by combining our respective strengths we can create a new and even stronger organisation which will deliver added value for all our members, key stakeholders and partners, enabling us to respond most effectively and efficiently to the unique challenges and opportunities ahead of us all. **WIF**

There is tremendous synergy to be gained from bringing our respective strengths together.

Ofwat has awarded £5.2m in prizes of between £155,000 and £760,000 to 13 winners in the ‘Catalyst’ stream of its second Innovation Fund competition, known as the Water Breakthrough Challenge. The winning projects were:

A HERU for Screenings – Led by Severn Trent – £198,144 The Home Energy Recovery Unit (HERU) is a waste recovery system developed to manage domestic and commercial waste on site. It uses heat pipe technology developed from satellites, to turn screenings into energy that can be recycled.

Catalysing a NET-ZERO future – Led by Severn Trent – £762,447 Researchers have identified naturally occurring bacteria that can remove ammonia without producing nitrous oxide. This project will develop innovative techniques for capturing these bacteria and putting them to work in existing treatment processes.

Defusing the nitrate timebomb – Led by Portsmouth Water – £154,800 The project will develop modelling software that can predict nitrate concentrations in chalk environments so that land use options can be tested to select those that deliver efficient nitrate reduction.

Designer Liner – Led by Yorkshire Water – £173,880 This collaboration will create a lining solution for clean water pipes with a much longer lifespan than existing linings and with the potential to include other technologies too. This will make water networks more resilient for the future and equip them to become smarter than ever before.

Pipebots for rising mains – Led by Thames Water – £230,930 This project will test the use of robots to assess the internal condition of rising mains. It will pave the way for the autonomous robotics technology to be used in fully pressurised sewer pipes.

Support For All – Led by Northumbrian Water – £632,270 This will involve designing, building and delivering a hub to securely host data on customers in vulnerable circumstances – when submitted once, the data can then be shared with other relevant utilities. The aim is to develop a pilot of a working model, implement this at a regional level and then scale nationally.

SuPR Loofah (Sustainable Phosphorus Recovery) – Led by Northumbrian Water – £445,577 This ‘SuPR Loofah’ treatment system will place micro-algae on a loofah material, and use this to capture phosphorous from wastewater. As well as being a more affordable and sustainable process to wastewater treatment, this approach will generate phosphorous which can be used as fertiliser.

Tap Water Forensics – Led by Severn Trent – £371,215 This project will develop the use of genetic sequencing in drinking water treatment to determine all the bacterial species present in water. This will significantly improve the speed and accuracy of water quality investigations. The hope is that customers in England and Wales will benefit from a £3-5m/year reduction in bills, as well as a reduction in unplanned remedial work and disruption to supplies.

Sub-Seasonal Forecasting to Improve Operational Decision Making – Led by Thames Water – £678,750 This project will create a reliable weather impact modelling and forecasting system which will help water companies forecast weather events up to four to six weeks ahead. These systems will improve water companies’ understanding of how the weather impacts their water and wastewater management.

Incentivising community-centric rainwater management – Led by Thames Water – £225,000 This project will test and measure how communities can be incentivised to adopt rainwater capture tools and solutions, to help prevent rainwater from entering the sewer network.

Unlocking bioresource market growth using a collaborative decision support tool – led by Anglian Water – £314,316 A collaborative strategic planning capability, underpinned by Business Modelling Associates’ adaptive systems planning software, will identify opportunities to trade bioresources across existing assets and determine the optimal blend of future inter-company investments.

Unlocking digital twins – Led by Thames Water – £334,800 This project will create standards to support consistent digital twins throughout the industry.

CATALYST CONVERTERS

Ofwat awards £5m for 13 projects in the ‘Catalyst’ stream of its innovation competition.

Water Quality As-A-Service Treatment-2-Tap – Led by Northumbrian Water – £714,880 This new behavioural science research will assess how best to engage and support customers when real-time water quality insight is available, and consider how new insights can be built into proactive operations. A new business model template will then enable all water companies to see how they can share risk and scope with the supply chain to deliver at scale and pace for least cost and best service to the customer.

Ofwat said it would announce the winning projects for the ‘Transform’ stream of Water Breakthrough Challenge 2 at the end of April, when it will award up to £34m to entries seeking funding of between £1m and £10m. [TWR](#)

INNOVATION NEWS ROUNDUP

The Scottish Government’s Hydro Nation initiative has launched a research and innovation programme focused on a just transition to net zero. The programme is hosted by the University of Stirling and funded by Scottish Water. Four areas are the main focus: eliminating emissions from infrastructure, driving down process emissions, enhancing the natural environment and embracing the circular economy.

Northumbrian Water has announced its Innovation Festival will return to an in-person event at Newcastle Racecourse this year, on 12-15 July. The theme is ‘Untapped Potential’ and will focus on finding and bringing together untapped talent from all kinds of different sectors, backgrounds and locations across the globe.

Anglian Water has published a *Five point plan* for innovation, focusing on: reaching net zero by 2030; delivering healthy rivers; futureproofing water resources; cutting leakage and optimising infrastructure; and adapting to climate change and building resilience to its impacts.

Severn Trent is setting up a global web of technology scouts. It has launched the first hub, covering Norway, Denmark, Sweden and Finland, where scouts will be on the lookout for innovations to tackle challenges including carbon emissions and leakage. Severn Trent plans to expand into Southern Europe, Australia and New Zealand, North America, South America and Southeast Asia later in the year.

Spring, the water sector’s innovation centre of excellence, has appointed Carly Perry as its first managing director.

Thames divides into urban and rural

From 1 April, Thames Water is re-organising its operations into two distinct teams: one for London, and the other for Thames Valley and the Home Counties (TVHC).

It reasoned this would enable neighbourhood challenges to be addressed and improvements delivered faster; strong local partnerships to be built; and a more flexible approach taken. Chief executive Sarah Bentley said: “Since launching our turnaround strategy, I have become acutely aware that we do not offer our custom-

ers the local customer service that they want and deserve. So the change we are making today to realign our business will better serve our customers in London and those in the Thames Valley and deliver significantly improved customer and environmental performance that is tailored to the needs of each region.”

The news came as part of an update from Thames as it entered the second year of its eight-year turnaround plan, launched in March 2021, to “fix the basics, raise the



bar and shape the future”.

The company also announced the following customer service changes: contact centres will be brought onshore and based in

its region; a fully multi-channel experience will be offered while high quality voice channels will be preserved to support vulnerable customers and those with complex queries; and a £100m investment will be made in integrating its smart meters with online billing and a customer portal to support customers to reduce consumption.

Thames reported it has already seen a number of improvements resulting from the turnaround plan, including improving trends in water quality, complaints management and supply interruptions performance.

CMA clears Pennon’s Bristol purchase

The Competition and Markets Authority (CMA) has approved Pennon Group’s acquisition of Bristol Water.

The CMA has accepted the undertakings Pennon proposed, to offset concerns relating to Ofwat’s ability to make comparisons between water suppliers and therefore its ability to regulate the sector.

Pennon will report separately on South West Water and Bristol Water, enabling Ofwat to maintain separate wholesale water price controls, with separate revenue controls and revenue limits.

Collaborative PR24 forum for Wales

Stakeholders in Wales will be invited to provide early feedback on the high-level, long-term outcomes that Welsh water companies propose in PR24 via a new ‘collaborative approach’ put forward by Ofwat. This is in response to the collaborative demands of Welsh policy, including the Wellbeing of Future Genera-

tions Act and the Welsh Government’s Strategic Policy Statement for Ofwat.

The approach will be mobilised via a new Wales PR24 Forum, made up of core members the Welsh Government, Ofwat, Natural Resources Wales, the DWI, CCW, Welsh Water and Hafren Dyfrdwy. The Forum will discuss

how outcomes should be balanced against cost, and how long term outcomes should be phased in over the AMPs. Ofwat said the forum would also give it a clear understanding of the priorities of Welsh stakeholders as it carries out the price review.

Welsh Water and Hafren Dyfrdwy will take the output of the process and feed it into their plans.

EA lifts abstraction licence charges

From 1 April, water companies will face higher abstraction licensing charges, following the Environment Agency’s reform of its licensing charging system.

The Agency said its *Water Resources Review of Charges* aimed “to create a fairer system where people pay for the services they receive and those abstracting a lot

of water, such as water companies, will pay more, supporting behavioural change to use water more economically”.

Under the new system, charges will be based on: the volume of water taken from the environment; where it is taken from; and how much is returned to the environment.

The Agency explained charges have not increased for ten years, despite the work and cost involved increasing in that time, leaving it not currently recovering service provision costs.

The new charging framework will secure £25m in additional income each year, which the EA said would enable further investment in water infrastructure, digitisation and the environment.

PR24 customer engagement expectations

Ofwat has published its expectations of the standards companies must achieve relating to customer engagement for PR24. The regulator said in a new position paper that firms should put in place solutions to meet their individual needs, ambitions and circumstances that are consistent with standards which covered:

■ High-quality research – Ofwat said this must be: useful and contextualised; neutrally designed; fit

for purpose; inclusive; continual; independently assured; shared in full with others; and ethical.

■ Customer challenge on the nature, quality and use of customer engagement evidence – this should be: independent; with board accountability; ongoing; informed; transparent; representative; comprehensive; and timely.

■ Assurance of the quality and use of customer engagement evidence – this should be: independent;

transparent; expert; comprehensive; and owned by the board.

Ofwat added: “We are continuing to work closely with CCW on all aspects of customer engagement policy development. This includes discussions about CCW’s role within the customer challenge and assurance solutions that companies will put in place to address the standards for high-quality research, customer challenge and assurance of customer

engagement. We welcome CCW’s proposal for a ‘challenge co-ordination group’ and its intention to raise standards for customer engagement; improve sharing of best practice on customer engagement across the sector; and improve the availability and understanding of comparative information.” The regulator also took the opportunity to provide terms of reference for collaborative customer research steering groups, and to refresh and simplify the customer engagement principles.

LITTLE COMPLAINT

The water sector leads the way with complaint handling, as Rachael Merrell explains.

The results of the Institute of Customer Service's January 2022 Customer Satisfaction Index (CSI) have shown that complaint handling is significantly improving within the water sector, with a customer satisfaction score 8.6 points higher than the UK all sector average marked out of 100 by customers.

The water sector is leading the way in the UK when it comes to complaint handling. The sector has scored above all other sectors including leading customer service performers such as retail, leisure, and tourism with a complaint handling satisfaction score of 74.3.

The results of the UK CSI highlight that when issues arise for customers, they have faith that their water provider handles their complaint fairly and effi-

ciently. The sector is significantly above the UK all-sector score in all dimensions of complaint handling, averaging 0.8 points higher than the UK all-sector average for satisfaction of outcomes of complaints handling, attitude of staff, and speed of resolution. This is a very positive result for the sector, as it shows that, when something goes wrong, customers feel their service is best in class.

Customer satisfaction

Improvements to complaint handling comes alongside the overall customer satisfaction with the water sector increasing by 2.1 points to 75.9, since the 73.8 points result in January 2021. It beat the energy sector with which it is partnered in the report, which has

a satisfaction score 1.8 points lower than the water industry.

Impressively, five water companies scored above the UK all sector average of 78.4 for customer satisfaction. Northumbrian Water scored 2.3 points higher, Scottish Water 1.7 higher, Welsh Water 1.4 higher, Yorkshire Water 0.4 higher, and South Staffordshire Water scoring 0.2 points higher. Furthermore, South Staffordshire Water and Essex and Suffolk Water were in the top 20 most improved companies for customer service in the UK with annual increased scores of 9.6 points and 8.7 points respectively.

The water sector is quickly approaching PR24, the next price review. In the previous 2019 price review, water providers were set stretching targets to drive up customer service performance with Ofwat introducing C-MeX, the customer measure of experience. The latest results from the UK CSI show that the sector's focus on service excellence is positively leading to higher overall customer satisfaction levels.



Rachael Merrell is customer services director at Echo Managed Services.

Right first time

A key priority for the water sector as a whole is in ensuring they are dealing with customer enquiries correctly at the first time of asking. In this area, there is more work for the sector to do as 74.9% of customers believed they received right first-time service compared to the all-sector average of 79.9%. Obviously, this varies by water company, with four of the seventeen water companies involved in the report scoring higher than the all-sector average. Northumbrian, Welsh, South Staffordshire, and Wessex Water all scored higher than the average. However, there is evidently some room for improvement as the sector approaches PR24. The sector needs to focus on and ensure investment in people, processes, and technologies to drive getting things right first time for customers.

The results of this year's index suggest the water sector is in a good position as the UK approaches PR24 as customer satisfaction continues to improve and satisfaction with complaint handling is best in class. However, going forward, there is scope for continuing to develop customer service offerings to ensure that providers are getting it right first time. As discussed, investing in people and customer preferred processes will support increasing satisfaction and that all important first-time perfect service. TWR

“The sector has scored above all other sectors including leading customer service performers such as retail, leisure, and tourism with a complaint handling satisfaction score of 74.3



IN BRIEF

Chris Train OBE succeeded Nick Salmon as chair of **South East Water** on 1 April. Train was formerly CEO of Cadent Gas.

South Staffs has appointed **Dan Rhodes** as customer delivery director and **Tom Fewster** as asset management and investment delivery director.

Ofwat has amended **Tide-way**'s licence and financing arrangements to take account of Covid impacts and historically low interest rates. Costs to customers will no longer be affected by changing interest rates and additional costs caused by Covid-19 will be shared between customers and investors.

Thames has launched a new, three-tier connections discount scheme to incentivise developers to build water efficient properties. Discounts are available for those who install low water using devices; deploy rainwater harvesting or grey water recycling; or pursue water neutrality by also retrofitting water saving devices and fixing leaks in existing homes in the local area.

Severn Trent has installed the first meter in its £20m Coventry and Warwickshire smart meter project, funded as part of the Green Recovery. It is installing 150,000 smart water meters by 2025 to create a smart water data region.

Northumbrian Water has launched a new online water efficiency calculator for customers, providing a full personalised report showing a checklist of how much money could be saved by taking specific water saving actions.

Ofwat finalises its public value principles

Ofwat has published its final public value principles. It noted respondents to its July 2021 consultation broadly agreed that a principles-based approach could help to facilitate the delivery of social and environmental value by the sector; and that Ofwat should not attempt to define specific outcomes or set metrics for assessment, at this stage.

The final principles are:

1. Companies should seek to create further social and environmental value in the course of delivering their core services, beyond the minimum required to meet statutory obligations – via both direct service provision and

through the supply chain.

2. Social and environmental benefits should be measurable, lasting and important to customers and communities.

3. Companies should be open with information and insights on operational performance and impacts, both good and bad. (There are clear links here with Ofwat's open data agenda, but on public value it has ruled out mandating a particular approach at this time).

4. Delivery of social and environmental value outcomes should not come at greater cost to customers without customer support. (It argued where companies seek to pur-

sue outcomes with a price tag, the evidence case must be "robust").

5. Companies should consider where and how they can collaborate with others to optimise solutions and maximise benefits, seeking to align stakeholder interests where possible, and leveraging a fair share of third-party contributions where needed. Companies' public value activities should not displace other organisations who are better placed to act.

6. Companies should take account of their capability, performance and circumstances in considering the scope for delivering greater social and environmental value.

Cost information call for regional water resource groups

Ofwat has called on regional water resource groups to ensure detailed information on option costs, benefits and tradeoffs is available when regional plans are published in draft in autumn.

It called for:

■ Detailed costings – Among other things, Ofwat pointed out the plans will help inform which strategic solutions progress beyond RAPID's Gate 2. "This makes the approach, robustness and transparency of decision making even more important"

■ Environmental and drinking water quality risks – these should be

identified and mitigations costed for schemes where funding will be sought in PR24 business plans.

■ Glide paths on demand management – "Where your future initiatives to reduce personal consumption to 110 litres/head/day are reliant on government policy, we ask that you clearly articulate which policies your assumptions rely on, and your assumed dates of implementation."

■ Profiling of changes to meet requirements – including around drought resilience, personal consumption and leakage – to optimise outcomes.

■ Abstraction changes – "Regional groups should work with environmental regulators to reduce the uncertainty around these figures and profile required changes across the planning period."

■ Deliverability – the groups must "think carefully about the deliverability of the plans from a practical perspective. This includes current supply chain constraints and affordability concerns."

■ Multi-sector contributions – third parties who will benefit from a solution must contribute a fair share of costs.

Hampshire schemes clear RAPID Gate 2

RAPID has cleared two of the accelerated track strategic water resources schemes for Hampshire

through Gate 2, the second checkpoint of its programme.

RAPID approved the continuation of a project to develop a second raw water transfer from the Havant Thicket reservoir, and another to recycle wastewater. A third proposal, for a desalination

plant at Fawley, was dropped.

Meanwhile, RAPID also gave the green light for two new solutions to progress to Gate 2: to expand the Upper Derwent Valley reservoir and to repurpose a quarry in the Mendips as a reservoir once quarry operations cease in 2040.

SDS buys Albion from Wessex

Wessex Water has sold Albion Water to SDS Water Infrastructure Systems. SDS will keep the Albion brand and staff, and provide uninterrupted service to Albion's 3000 customers.

SDS managing director Patrick Cullen said: "The realities of a cli-

mate change emergency demand a committed and determined response to build flood resilience and reduce water consumption. With the acquisition of Albion Water, allied to our market leading water infrastructure technologies, we are in a unique position

to deliver a truly integrated approach to the management of this precious resource."

Albion Water was the first competitive NAV (New Appointment and Variation), set up in 1999 to compete against incumbent water companies, and has an identity associated with innovation and sustainability.

Ofwat finalises Covid bad debt decision

Ofwat has ruled price caps in the business retail market can go up by 0.49% for two years from this April. This will enable retailers to share some of the unexpected bad debt costs that have arisen due to the Covid-19 pandemic with business customers.

The rise is higher than the 0.31% consulted on in December. Ofwat explained the number now incorporates a proportion of bad debt costs reported by retailers during 2019/20.

The increases will affect non household customers who use less than 50 megalitres of water a year and who have not contracted with a retailer. CCW criticised the

decision. Senior policy manager Christina Blackwell said: "This increase in the price caps will put a disproportionate burden on business customers at a time when many are still recovering from the impact of Covid-19. We believe the debt costs should be shared equally across customers, retailers, and wholesalers to avoid unfairly penalising business customers – many of whom are still not enjoying a positive experience of the retail water market?"

The UK Water Retailer Council (UKWRC) said the decision had left retailers picking up the largest share of non household market Covid debt costs, with custom-



ers picking up the balance. It explained customer debt increased from ~1% to 2.87% (average) over the two years of the pandemic, equivalent to £89m over and above the 'normal' level covered by the price control. It said Ofwat had al-

lowed retailers to recover £22.6m, leaving them to carry 75% of the cost. Further, that given that about 50% of revenue comes from contracted customers (whose prices are fixed), retailers will only be able to recover ~50% of the £22m in reality, from default customers. Moreover it pointed out that retailers had additionally suffered from pandemic-related revenue reductions.

The UKWRC said that in contrast, wholesalers had benefited from wholesale price increases over the period; protection from excess non household customer bad debt; and are expected to be allowed to recover their own Covid costs including revenue reduction.

MOSL publishes its Market Data Strategy

MOSL has set out views on how data quality in the water retail market could be significantly improved.

Its new Market Data Strategy is centred around four themes, each of which details the associated key milestones, roles and responsibilities of market participants, and legislative considerations:

- Reduce the cost and increase the

value of market data.

- Increase the completeness and accuracy of market data.

- Develop a Market Data Framework.

- Use data proactively to uncover risks, issues and opportunities.

MOSL said it will now develop a data and analytics roadmap, outlining the activities that will support the delivery of the strategy over the next five years and beyond. It explained that prioritisation of the activities will be informed by the outcomes of the first theme, which involves an in-depth analysis of the

cost and value of data.

The strategy was produced in partnership with information management consultancy Aiimi and in collaboration with trading parties and wider market stakeholders, including Ofwat and CCW.

- MOSL ran the second round of its Market Improvement Fund competition in March. The Fund provides investment for projects that can make a positive impact on the market and deliver benefits to business customers. Individuals or groups can apply for between £10k-£150k.

New chairs for the RWG

Mike Rathbone and Ray Porter have been appointed as the new joint chairs of the Retailer Wholesaler Group (RWG).

Mike Rathbone, market strategy manager in the wholesale market unit at Severn Trent, takes the role of wholesaler chair from Simon Bennett, formerly of Bristol Water (now at MOSL) and co-founder of the RWG.

Ray Porter, director of wholesale, markets and metering at Castle Water, takes the role of retailer chair from Richard Stanbrook, formerly of Pennon Water Services and now with wholesaler South West Water.

Bennett reflected: "It's been a fantastic journey for me, from setting up the group with Simon Brown, working with the late great Andrew Bamber, working closely with Richard... and more importantly just getting the trading parties to sit down together to come up with good practice that thinks about the end user/customer."

New members join as Code Change Committee gets to work

The new Code Change Committee was officially formed on 1 March. MOSL announced the following new members:

- Independent chair – Anthony Pygram. Pygram is a former regulator and civil servant and currently serves as alternate chair of the regulatory board of the Institute of Chartered Accountants.
- Independent members – Dr Ul-

rrike Hottop, an economist and regulation and policy specialist, and Michael O'Connor, who has had a varied career including CEO positions in the public and voluntary sectors.

- Customer representative – Christina Blackwell, senior policy manager from CCW.

These join the four trading party representatives already

appointed to the Code Change Committee: Michael Rathbone (Severn Trent), Paul Stelfox (United Utilities), Claire Yeates (Waterscan) and Matthew Glover (Wave). And affiliate members Sarah McMath from MOSL and Dan Mason from Ofwat. Recruitment for a second customer representative continues.

THE BUSINESS CASE FOR BUSINESS SMART METERING

New research finds funding enhanced metering for all NHH customers at PR24 would be a low regrets investment.

It would be cost beneficial for wholesalers to install enhanced meter technology for all non household (NHH) customers in AMP8, and they should pursue the investment to do so in their PR24 business plans.

That was the key recommendation from a new independent report commissioned from Artesia Consulting by MOSL on behalf of the Metering Committee, to assess the business case for upgrading NHH water meters.

More specifically, Artesia found fixed-network smart metering, or Advanced Metering Infrastructure (AMI) technology that is capable of providing hourly consumption data to wholesalers, would be justified for customers with meters over 25mm. For customers with meters under 25mm in size, the picture is more nuanced (see Table 1). The report advises wholesalers should invest in at least ‘walk-by’ or ‘drive-by’ Automatic Meter Reading (AMR) technology for monthly data collection for this group, but that this should

be upgraded to AMI where practical and beneficial – for instance, if the wholesaler is rolling out a smart metering programme for its domestic customers, or where business customers are in dense clusters.

At present, only 26% of meters in the market are AMR or AMI, so the recommendation equates to a significant upgrade. However, the report takes a pragmatic line in stopping short of bidding for AMI for all. Artesia called the approach “low regrets” and urged wholesalers to both upgrade or replace existing traditional and older specification AMR solutions over AMP8, and to make the resulting consumption data available to retailers.

Pragmatism and nuances

MOSL’s Strategic Metering Review lead Martin Hall explains the 25mm threshold. He points out that just under half of all NHH customers in the market consume at or below the level of an average household, so the opportunity to make substantive water efficiency savings is small. Therefore the higher cost of AMI, which primarily relates to the cost of the network infrastructure which underpins it, could only be justified for NHH customers if wholesalers are already investing in it for their household customers.

“Rolling out a ‘smart’ (AMI) meter network relies on economies of scale, so if you’re only building a network for NHH meters, there will never be a payback. Where the wholesaler is rolling out smart

meters to their households, it makes complete sense to roll it out to NHH at the same time. Where the wholesaler isn’t rolling out ‘smart’ meters, the business case is more of a challenge for meters less than 25mm.”

He adds that while some wholesalers, notably Thames Water and Anglian Water, have justified the cost of AMI for households, which typically have smaller meters (15-20mm) than the 25mm specified in the report, that’s because of the number of meters involved in a close geographic area.

Meanwhile the upgrade from traditional meters to AMR can be justified for meters under 25mm because although consumption levels may be relatively low, AMR meters can help in the battle against leakage. “Any property can have a leak... and a leak can easily take a £100 a year bill to £2,000 or more,” says Hall. But wouldn’t AMI identify leaks much more quickly than AMR? “It would be quicker and obviously more effective, but ultimately more expensive. So the cost benefit is not as effective for those smaller meters.”

MOSL CIO John Davies highlights some additional nuances that the headline recommendation of the report doesn’t capture, but that MOSL acknowledges must be taken into account on practical grounds. For instance: “If you are replacing a large meter, let’s ensure it’s replaced with a smarter meter! But if replacement of that meter isn’t an option, because it’s just been replaced, or the cost / interruption is an issue, then we’ve really tried to focus on putting some technology on that that will provide meaningful consumption data. Ultimately, this is more a data report than a technology report. It’s necessitated by installing some technology, but what drives the benefit is getting and using that granular data.”

Cost benefit case

The Artesia recommendations result from an analysis of costs and benefits for all meters estimated to be in the market over the 15-year period from 2025 to 2040. Following extensive research with trading parties and other stakeholders, Artesia found a positive cost benefit across all scenarios investigated, though the cost benefit ratio and payback time alter according to the scenario (a weighted average of six years for all water stressed and non-water stressed areas; ten years for just non-water stressed).

Chart 1 shows the costs (£344m) and benefits (£943m) quantified in the first of

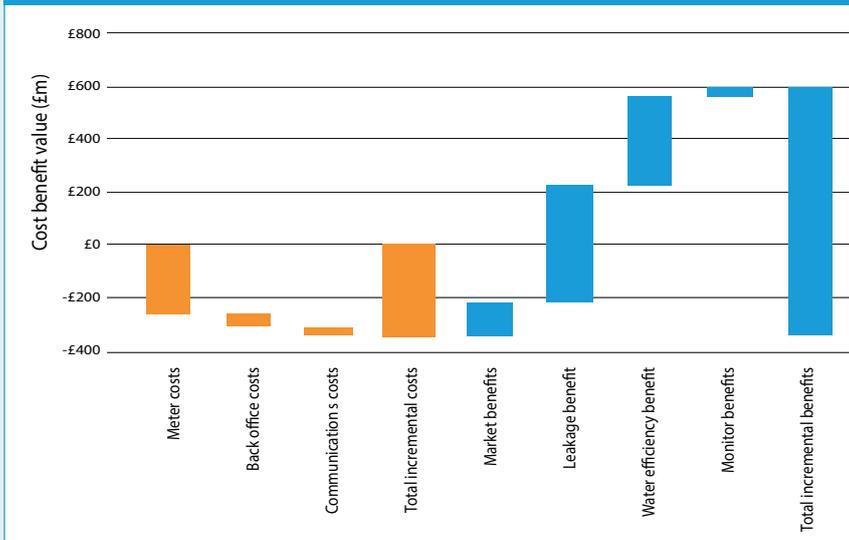


This is more a data report than a technology report. It’s necessitated by installing some technology, but what drives the benefit is getting and using that granular data.

TABLE 1: RECOMMENDATIONS SUMMARY

Meter size	Percentage of stock	ADC (l/ meter/day)	Minimum data required per meter	Technology
< 25 mm	87 % (~ 1,120,000 meters)	~ 850	Daily consumption (collected monthly) Indication of continuous flow (collected monthly)	AMR or AMI
25 to < 80 mm	12 %	~ 12,000	Hourly consumption (collected daily)	AMI
80 mm and above	1%	~136,000	Hourly consumption (collected daily)	AMI

CHART 1: COSTS AND BENEFITS BY COMPONENT



these, where the cost benefit ratio was the most positive, and the net benefit c£600m.

Of note are the facts that a conservative approach to benefits was taken throughout (only those that could be robustly quantified are factored in); and that the cases stand up on purely the net benefits to wholesalers (see Table 2). Hall comments: “There is a positive business case for wholesalers based on the ability to manage leakage and water efficiency and the avoided costs of setting up a NHH demand monitor. Given that there are additional benefits for retailers based on avoided meter reading, more accurate billing and settlement, and fewer and easier to manage customer disputes make the overall case very strong.”

The evidence contained in the report is significant because until now, wholesaler investment in metering has been driven primarily by Defra’s water stress classification, water resource concerns and the likes of per capita consumption (PCC) and leakage incentives through Performance Commitments rather than the requirements of the NHH market.

Five years after the market opened, advanced metering investment has not come through outside of geographical pockets, despite the now abundant evidence of the issues and the critical need for timely and accurate consumption data. These issues include customer frustration and complaints about inaccurate bills; 20% of meters being unread for a year (with 30,000-40,000 unread since 2017); a disappointing level of water efficiency action; and a high volume of retailer/wholesaler settlements not based on actual meter reads. These is-

suues could be addressed promptly if wholesalers could roll out smarter metering capabilities and share the resulting daily/sub-daily data more widely.

PR24 prospects

MOSL commissioned the report on behalf of the Metering Committee in time to provide wholesalers with valuable evidence to employ as they create their PR24 business plans and next Water Resource Management Plans. Artesia pointed out: “There is an opportunity at PR24 for Ofwat and Defra to deliver an ambitious plan to have enhanced metering technology substantially in place by 2030 to meet the requirements of long-term water resources challenges, water efficiency, carbon reduction, wholesalers’ performance commitments and the requirements for an effective and innovative retail market. This could be

implemented as a ‘low’ or ‘no regrets’ investment to deliver long-term benefits to market stakeholders, society, and the environment, where investment now is likely to pay off in a range of future scenarios.”

Davies says this is the first time such evidence for the NHH market has been brought together in one place, which is especially powerful given it is teamed with the better understanding of how much and where water is being consumed in the business market, thanks to MOSL’s wider data insight work. This has shown, Hall adds, that NHH customers are “incredibly diverse,” which itself presents opportunities for retailers to tailor incentives and services for customers using more accurate and granular data on consumption.

Layered on to that are technology advances which have made smarter meters more attractive, and heightened concern about nature and climate change. Hall summarises that in terms of the timing to make the case for smarter metering for NHH customers, the “planets have aligned”.

It is interesting then that neither Artesia nor MOSL make any specific recommendations for policymakers or regulators – for instance, for Ofwat to approve efficient business cases for enhanced metering if they are brought forward by wholesalers in their PR24 business plans. Hall explains: “We avoided those explicitly, the report and the business case should stand alone as evidence.” He adds however that if Ofwat includes a Distribution Input (DI) Performance Commitment in its price control methodology as has been trailed, “that’s the mechanism to incentivise NHH investment at PR24. I almost think if the DI

CHART 2: ADAPTIVE PATHWAYS



Performance Commitment is implemented, it gives a green light for investment in smarter metering for both NHH as well as further investment for households.”

Adaptive planning

However, the report does not put all of its metering eggs in one basket. It is cognisant of the risk that not all wholesalers will be funded for a widespread AMR/AMI rollout despite the cost benefit evidence, or choose to invest anyway. It is also cognisant of factors that could limit widespread smart meter rollout in the market. There will, after all, be many investment requirements competing for capital at PR24, and the current balance of incentives points to greater focus on the household rather than NHH segments where metering is pursued.

In light of that, the Artesia report offers ‘adaptive’ options. While wholesaler-led rollout is route one, there are possibilities for retailers to take a more proactive approach with selected customers where it is cost beneficial to do so, and even for a third party to take over the management of meter assets and deliver the enhanced meter technology under one provider as a single solution (see Chart 2)

Here the findings begin to overlap with another strand of ongoing SMR work, on metering roles and responsibilities, which PA Consulting is conducting and which is expected to report in May. Hall shares that that contains a number of options for

metering services roles and responsibilities, from a change of meter reading responsibility to options which “could provide a radical change to the market and take a long-term approach”.

One option is retailer-led. He comments: “For some meters, we think there is a business case for retailers to make the investment, but it’s not right across the portfolio of their meter stock.” Rather, it is where the costs are worth it, such as where meters are hard or expensive to read. Hall adds that retailer appetite for this route is varied: “We’ve spoken to retailers about making that investment and some are already doing this, particularly where supported by customers, and others are reviewing the availability of suitable technology options.”

Data interoperability

Davies adds that the possibility of retailer-led programmes strengthens the case for prioritising data over technology. “While pathway one feels like the main route to getting this done, if we can get to the point where, as a sector, we can agree a standard data specification for consumption data and meter reads, then if a retailer or a customer is willing to lead some investment, they invest in a piece of tech that then provides a similar set of data...there could be a whole suite of technologies, perhaps at different price points that provides that. The key is getting agreement, and that is another piece of work.”

Hall reflects that while the mandated energy smart meter rollout comes with centralised specifications and benefits, “the water industry doesn’t have that luxury”. But: “We think standardisation should be on sharing data. We don’t need to standardise meters or how they capture data, we just need to be able to output the captured data in a standardised format so it can be shared more widely. That will help the market, its customers, retailers and wholesalers. The cost of the back-office systems start to get simpler and more efficient. The energy model might not be right for the water industry, but the outcomes and the use of a standard data format could be much the same. We are just looking to get there in a more cost-effective way.”

Artesia recommends further work to develop data interoperability standards and protocols for ensuring data flows between wholesalers, retailers and MOSL are consistent and efficient. It also recommends more work to develop robust data analysis frameworks to support trading parties in using enhanced meter data to identify where leakage and wastage could be reduced, as well as to ensure that additional improvements to data quality, such as meter location and customer information, is collated as the enhanced meter technology is rolled out.

Davies concludes that while rolling out smarter metering seems a big step from where we are now, it should really just be regarded as a prerequisite of making the market work better for customers and those who operate in it. “This to me is just a stepping stone to necessary market transformation,” he says. “What we should be moving towards is a market where this data is generated automatically, and that gives more scope for retailers to think about services to customers and value-added offerings.”

The strategic metering programme is overseen by the Metering Committee, which includes representatives from wholesalers, retailers, MOSL, Ofwat and CCW.

The Artesia report was produced following extensive engagement with the Committee and other stakeholders. The programme team is now keen to invite feedback and comments. The full report will be available on the MOSL website from Wednesday 6 April. Comments and feedback can be sent to comms@mosl.co.uk by Friday 6 May. **TWR**

TABLE 2: WHO BENEFITS AND HOW?

Wholesaler	Retailer	Customer	MOSL
More accurate settlement	More reliable cashflow from better settlement and billing	More accurate bills, fewer complaints	Improved market performance and efficiency
Better visibility of consumption, enabling leaks and waste to be identified and addressed	More cost-effective meter reading and greater efficiency	More value-added services from retailers	A more outcomes focused Market Performance Framework
Better demand forecasting/ water resource planning	More scope to innovate in service provision	Easier switching	More opportunity to deliver data-based insight and drive evidence based improvements.
More accurate water balances and reporting	More confidence to take on new customers	Greater choice of retailer based on a wider range of services provision.	
For those rolling out HH AMI, the marginal cost of rolling out NHH AMI on top could improve the business case.			

The self-supply community is very much more interested in initiatives to unlock value in the water retail market than in getting the basics right.

So said Waterscan managing director Neil Pendle at the March Self-Supply Users Forum (SSUF). He was responding to a first glimpse of the priorities of the new Strategic Panel, which were shared at a very high level at the Forum by independent Strategic Panel member Paul Smith.

Smith reported the Strategic Panel's role is to "promote, challenge and lead the evolution of the market". He said that its priorities remained work in progress but were "not far off" and to that end shared that the Panel had in its sights two main strands: getting the basics right, and providing opportunities to "unlock some of the value".

He said among the questions it is grappling with are the following:

- How to ensure the market is creating value for consumers.
- How is the market providing opportunities for retailers to add value and can that lead to better service?
- How to help facilitate water efficiency and environmental performance.
- Are the incentives on trading parties right?

There are, Smith observed, "lots of opportunities to try to do better".

Pendle reflected that "clearly there's some things not going right in the market". He illustrated with the example that the latest company to join the self-supply community, just a few weeks before the Forum, had arrived with over 20% of its meters long unread, something that will be corrected "within three months and back to normal self-supply levels".

But Pendle went on to point out that the self-supply community was very much on top of the basics (see box), and therefore that its main interest was in unlocking more value and services from the market.

Adding value

The SSUF touched on a number of areas where value might be unlocked. There was dedicated focus on some of the possibilities that more enhanced metering could offer. MOSL's lead for its Strategic Metering Review Martin Hall explored the cost benefit proposition for wholesaler investment in AMI and AMR meters

for all non household customers, on the back of publication of a report it commissioned on this subject from Artesia Consulting (see p26).

Anglian Water's continuous improvement manager Michelle Thompson gave a presentation on Project AMIDST, a joint Anglian/MOSL pathfinder project to investigate the feasibility and benefits of Anglian sharing monthly meter reads from its AMI meter rollout direct to CMOS. This is in anticipation of future proliferation of AMI data across the market.

As well as trying out the technical connection, the project is considering the impact on, and possible changes required to, the Market Code that might result. Thompson gave the example of how settlement might be impacted, and whether there might be an opportunity to reduce settlement from the current 18 months.

Waterscan really welcomed the project. Pendle noted that 30% of the reads Waterscan submits are rejected by CMOS and have to be resubmitted, so smart reads supplied direct from the wholesaler would reduce that inefficiency. He noted too that Waterscan's preference is for 15 minute flow data, and that some smart meter data does not offer that degree of granularity. But Thompson said in Anglian's case, its smart meter programme used pulse linked smart radios for large meters, thereby preserving a logger facility.

BEYOND THE BASICS

Adding value took centre-stage at Waterscan's March Self-Supply Users Forum, given the community's high performance on market basics.

Other 'value adds' considered at the SSUF related to data quality (MOSL's Hall said a data strategy roadmap was imminent); water efficiency services (operations director Barry Millar provided an update on the work of the RWG Water Efficiency Sub Group, which he chairs); and sustainability services and disclosure (account director Rebecca Gale provided an overview of what organisations can achieve in this space).

Pendle also gave SSUF members the heads up that Waterscan will be launching a new self-supply community hub in autumn. **TWR**

Waterscan's preference is for 15 minute flow data

BASICS IN THE BAG

The Waterscan team reported on another high performance quarter at the SSUF.

Commercial director Nick Hayes said the community was "well above 98%" in terms of Market Performance Standards and expected to maintain this market leadership once the new style of reporting comes in from MOSL. He added that bilaterals were trending in the right direction, with increased engagement from wholesalers and more processes to go through the bilaterals hub from April.

Operations director Barry Millar reported on long unread meters – that at 1.67%, the proportion of long unreads in the Waterscan portfolio was "a high peak for us," with around 1.2% a more typical proportion. He explained this was due to a new joiner in the self-supply community which had arrived with 28% of its meters long unread. Hayes commented that this was a "temporary blip" and said Waterscan was "pushing hard" to get the company's long unreads down to the level of the wider self-supply community.

There was also good news to report on a number of fronts.

Firstly, Thames Water's latest undertakings on access to smart meter data – which include compensation for demonstrably affected customers and the elimination of ongoing data charges – amounted to "a real win for the community," Millar said. Waterscan would of course "have preferred none of this to have happened" but the final arrangements are a "pretty good outcome for all concerned".

Secondly, head of market development Syndiso Bango-Dube reported that Waterscan's credit dispute with South West Water was now largely resolved. After many months of disagreement, Waterscan sought the advice of a competition law expert, which ultimately served to shift the wholesaler's position. It was a relief, Pendle observed, to have all but resolved this dispute, given it had "been a big problem for a long time". Bango-Dube said the community as a whole had now reduced the cash it lodges as credit by 90% from the peak, with credit arrangements now in place with all wholesalers – a real win for the self-supply community but also the market as a whole.

FIFTH

As the retail market turns five this month, MOSL CEO Sarah McMath calls for meaningful change.

AMENDMENTS

When MOSL held its CEO Forum at the end of 2021, the message it gave to the trading parties and other stakeholders assembled was: “It’s time to act.” As the market turns five years old this month, MOSL’s chief executive Sarah McMath says it really is time to take action to make the market work better for customers and those who trade within it.

Not only is the milestone birthday significant, but the conditions are right. There are new governance arrangements in place, with the Strategic Panel up and running and the new Code Change Committee having convened for the first time in March. And there is the opportunity to make meaningful changes via a multitude of live reviews – PR24, the Retail Exit Code (REC) Review, Defra’s Post Implementation Review (PIR) and the Market Performance Framework (MPF) Reform.

McMath counsels that the key to all of this is to be honest, and to take action to course correct decisions made with the best intentions in the past but which have not played out as intended. “Nobody wants to openly say the market is failing...but I really feel we need to be honest. There were some things that, with the benefit of hindsight, we should have done differently at market opening. This isn’t about saying anybody’s failed, but acknowledging that we got some things wrong at a market structure level. I have every confidence that with the Strategic Panel – which has Defra and Ofwat representatives – that we can start to make those really difficult decisions that will make a fundamental difference to the market and its customers.”

Successes to celebrate

Before proceeding to explain what she would like to see change, McMath takes stock of where the market is today.

Firstly, the successes. Number one on her list is the Bilateral

Transactions Programme, which has seen trading parties collaborate to address the thorny issue of operational transactions, after some years of trying. She reflects: “One of the most important things, about two years ago, was really, really focusing in on why we were doing this. Actually, the problem we are trying to solve here is that the customer has got a problem – it might be their meter is broken or they need their meter verified. And that can only be solved by retailers and wholesalers working together.”

Putting that customer story behind what was previously treated as an IT issue made all the difference, as did ensuring everyone had a say in the change. The hub successfully launched last year with the first C1 process, and initial analysis shows approximately 14,700 hours have been saved in raising requests, 7,300 hours saved on processing requests and 6,000 hours saved on managing rejected requests as rejections have decreased. The greater visibility of processes and pain points that the hub will reveal will also support putting better incentives in place via the MPF Reform.

McMath is also really enthused by the industry’s new independent Strategic Panel and praises the achievements so far of MOSL’s Strategic Metering Review – “a real example of the industry coming together, bringing lots of different perspectives” and making progress where there have been many false starts in the past. Most recently, the Strategic Metering Committee has commissioned an independent report demonstrating the cost benefit of enhanced metering investment by wholesalers, in time to feed in to PR24 business plans and Water Resource Management Plans (see p26), which is due to be published to the market this month.

Finally, McMath says she is proud of how MOSL itself has altered since she took the top job nearly three years ago. There has been a step change in how MOSL uses its unique position at the centre of the market to foster collaboration and share data to support evidenced-based change. It has had a website and communications overhaul to ensure transparency.

It has earned trust from the market, partly by clarifying its purpose and identity. “One of the things that has been transformational in that trust equation has been being really confident that we are not a trade body. We are a trading partner-funded market operator...While it is important that we get good out-



This isn’t about saying anybody’s failed, but acknowledging that we got some things wrong at a market structure level



comes for trading parties, delivering improved outcomes for the market we operate must be our priority.”

McMath is also personally pleased with the changes she has overseen in the MOSL team. “We have a genuinely diverse team compared to the rest of the water sector and pride ourselves in bringing diverse thought, fresh talent and expertise into the company. We are about 50:50 gender based, and just under 40% of our colleagues are non-white British. Even more importantly, it is genuinely inclusive, which is important not only in attracting talent, but in retaining people.”

This has attracted outside attention too, with McMath invited to take up a role as president of the Institute of Water’s South East Area Committee, in part because of her track record on inclusion and diversity.

Challenges persist

So the picture isn’t all gloom, but McMath openly accepts there remain many challenges that dog the market.

Data quality is a prime example. Poor data quality drives significant indirect cost for trading parties, with over £10m per year spent on resources to manage, maintain or work around data quality issues. “That’s a lot of money to go out of what is inherently a low-value market,” McMath points out.

But poor data quality also blights customer experience and the achievement of wider sector goals such as net zero and water demand reduction. Specifically, shortfalls in timely accurate consumption data have far reaching consequences; despite the



While we welcome Defra’s focus on non-household reduction targets, it’s a bit of a pipe dream without timely, accurate consumption data

£8.5m annual spend on meter reading, some 20% of meters have not been read for a year.

This is particularly pertinent in light of the new demand reduction target from Defra under the Environment Act, which seeks a 9% fall in consumption from the non-household market. “While we welcome Defra’s focus on non-household reduction targets, it’s a bit of a pipe dream without timely, accurate consumption data,” McMath points out. MOSL’s response to the target consultation will also seek to understand how the 9% was arrived at, and to challenge a blanket approach. “The important thing on the 9% is that it’s got to be really clear that it isn’t a one size fits all market, non-household customers are incredibly diverse, and their water usage varies significantly from large industrial users to small corner shops using water for domestic purposes (i.e. flushing toilets or boiling kettles); so we can’t have a one size fits all target,” she says.

McMath explains that MOSL’s initial analysis has found that more than 90% of non-household premises consume around 40% of the water for essentially domestic purposes – taps and toilets. “So, when you’re looking at water efficiency, the messaging for that 40% of consumption should be the same as the messaging to domestic customers.” For the remaining less than 10% using water for genuine business purposes, the messaging should be more nuanced. She offers the example of beverage production where, while water efficiency is of course desirable, a growth in business would necessarily lead to more water being consumed, rather than less.

One of the structural challenges McMath highlights here is the disincentives for retailers to offer water savings to customers. “So, I think the most important questions will be how will this [9% reduction] be applied, and who will it be applied to?”

Another major challenge is the financial viability of the market. It has become common knowledge that very few retailers are profitable. While for wholesalers, McMath observes: “The non household market for wholesalers is effectively just a cost – you can’t make money from it, you can only optimise your outgoings.” In contrast to Ofwat’s criticism of wholesaler performance in the market, she argues: “There is a huge level of wholesaler engagement in the market, but the reality is this is something where there is limited opportunity for them to do anything but lose money.

“The situation is not sustainable at the best of times, but in the current economic climate – with energy prices tripling and Covid recovery ongoing – we really must appreciate the fragility of the situation.”

The review jigsaw

In a ‘strategic narrative’ produced ahead of the CEO Forum, MOSL put forward a two-pronged fix for the market’s challenges. This consisted, firstly, of continuing to tackle the three long-identified market frictions: inadequate wholesaler performance, wholesaler-retailer interactions, and poor data quality. And secondly, of finding a way to shore up retailer finances promptly.

While some of this can be pursued through business-as-usual routes, many elements will need more fundamental change. McMath says we must take the opportunities presented by the various reviews going on to make the right interventions in the right places. “I don’t think you can look at these things separately,” she shares. “You have to look at PR24, the REC review, MPF Reform and potentially the PIR all as part of the same jigsaw. And you have to look at it through a value proposition lens - what is the value for customers and the environment?”

So, what should be done and where?

PR24

There are a number of opportunities around PR24, according to MOSL. First, water efficiency. “It’s time to take stock of the assumptions that we made in PR14, in terms of the base assumption that competition between retailers would somehow provide a water efficiency incentive,” argues McMath. This hasn’t been the case. There are neither sufficient incentives on customers to drive behaviour change or demand for water efficiency support from retailers, nor are there sufficient incentives on retailers and wholesalers to provide it in the absence of customer demand. “We have to look at that because we won’t solve the water scarcity challenge if we only focus on 70% of the water (i.e. domestic customers).”

She comments: “I genuinely think wholesalers have to be more incentivised to both invest in their metering assets and to work with retailers. We’ve had a couple of examples: Thames and Severn Trent have developed tariffs for water efficiency, but there has been quite a low uptake of those, and they haven’t really moved the dial... I think we need stronger incentives in the non-household market to rival those in the domestic market – my preference on incentives is always bigger carrots rather than bigger sticks.”

She continues: “I think we should be using more natural incentives rather than forcing incentives that might drive unintended behaviours. For me these must include retailers – why wouldn’t retailers want more accurate and timely bills for their customers? So how do we develop incentives to support retailers in delivering this? Equally, wholesalers want accurate, timely consumption data to better understand leakage and per capita consumption (PCC) across their networks, so how do we use natural incentives for wholesalers too?”

More generally, MOSL wants to see household and non household incentives harmonised to address frictions and foster investment in the market – notably on metering. At present, Outcome Delivery Incentives are focused solely on domestic customers. In its response to Ofwat’s consultation on Performance Commitments (PCs), the market operator called for common PCs including on meter asset health, distribution input, and bills based on actual meter readings.

McMath says also that PR24 should explicitly engage with retailers. “One of the things Ofwat do need to look at is how they hear the voice of the retailers in PR24. It’s seen as a wholesaler-only activity, and obviously it directly affects wholesalers from a price control perspective, but retailers should have a voice in that process to explain what some of their challenges are today. The market was only just opening at PR19 so there wasn’t the opportunity to consider the non-household market or retailers’ involvement, it’s important that we address that in this price review.”



You have to look at PR24, the REC review, MPF Reform and potentially the PIR all as part of the same jigsaw

REC Review

MOSL was unequivocal in its response to Ofwat's REC Review consultation in urging the regulator to reconsider its draft choice to leave price caps unchanged. It pointed out retailers are making losses, especially on small customers, and provided evidence that not all the costs retailers incur are covered – not least of which are market operator charges. This acts as a barrier to competition and deprives customers of service innovation. MOSL argues the REC is a powerful tool, and its review must be considered as a critical opportunity to revisit price protection decisions.

McMath: “The REC protections don't reflect the cost pressures that were identified pre-market opening and why would they? Again, this is one of those areas that we shouldn't beat ourselves up about – we were never going to get that right at the time. My message to Ofwat is we just need to learn from the past five years and take appropriate action.”

She accepts Ofwat's position that there is inefficiency yet to be squeezed out of retailer operations, but notes even efficient retailers don't profit from small customers (see p34). And she challenges: “How do you become efficient if you don't have the ability to invest in your infrastructure? It's a bit chicken and egg, but I do think we should openly acknowledge that there are additional market costs which were not envisaged.”

Is Ofwat likely to move on this? “I'm confident they are listening,” she responds. But increasing business customer bills may be unpalatable. In its 'strategic narrative,' MOSL offered the suggestion that wholesalers could adjust their wholesale charging structures ahead of the REC review to create 'headroom' for retailers without increasing prices for customers. This could potentially be through a deferral of wholesale charges (similar to Covid deferrals), via substantial financial incentives for retailers to deliver water efficiency savings or via a substantial step change in wholesaler market performance charges, to be redistributed to retailers.

Ofwat was not supportive, but McMath says: “I still think it could be a smart way to do it because it's not tenable at this point in time to increase customers' bills in light of the cost of living crisis *all* customers are facing.”

MPF reform

The MPF Reform, which is a key improvement programme in MOSL's 2022-25 Business Plan, McMath says is the “umbrella” which ties the outcomes of its Strategic Metering Review and Bilateral Transactions Programme together. Of chief importance will be effectively incentivising trading party performance where it leads to a positive customer experience or outcome – at present, customer priorities and the market performance framework are not well aligned.

McMath comments: “The important thing is to define what we are trying to achieve. What are the market outcomes? What needs to be true to make those outcomes happen? An obvious one is you need timely, accurate consumption data. Ask what needs to be true to get timely, accurate consumption data and then work back through that. Crucially, how many of those stages are we actually monitoring? And what does good look like for each of those? That's the process we're going through - really focusing on incentivising trading parties' actions in the areas that will drive a positive customer experience.”

MOSL intends to deliver the reform in two phases: PWC is

the delivery partner for phase one and is providing expertise on two workstreams: the development of a risk register, and the identification of a set of candidate frameworks. In phase two, the detailed design and implementation of target MPF measures and tools will be undertaken, through 2022 and 2023. MOSL's recently approved business plan devoted an extra £150k from reserves to advance this work following strong overall support from trading parties and key stakeholders, including Ofwat, who referred to the MPF Reform as a priority for the market.

McMath asserts the MPF Reform should be seen as one piece of the market improvement puzzle, rather than the main event. “While the reform of the MPF is important, it can't be a catch-all for everything in the market around performance and incentivisation. There are stronger incentives in the REC and PR24 than there may well be in the MPF. It's important we consider these as part of the same solution, but with different levers.”

Finding fixes

She reiterates: “The REC, PR24 and MPF reform should form a complementary regime that can deliver improved outcomes for business customers, the environment, the market itself – but do that in a way that is joined up and doesn't double mark.” She adds, with a note of urgency: “For PR24, if we don't positively impact it this time, we have another five years to wait, particularly around the criticality of metering and water efficiency – we can't lose the opportunity for Ofwat and the wholesalers to do the right thing.”

The same goes for the Defra PIR. MOSL has given “some quite strong feedback” on the initial review. McMath comments: “I think we really do need to be honest about what the policy objectives were and whether they have or haven't been achieved. And the PIR is an excellent opportunity to be honest and open about that.

“I don't think we should have a problem with accepting there are challenges and being open about that, whether it's Defra, central government or whoever because we can fix them. We should be confident that we can make it work, but only if we address the elephant in the room which in the market's case is the structural challenges.”

She continues: “I guarantee, if we fix the bilaterals, if we fix the data quality issues and get wholesalers even more engaged, the market still won't function in the way it needs to be a vibrant and attractive market for customers and deliver environment outcomes because there are other challenges.”

So it really is time for everyone to act, together and through all the available means, to provide a market customers want to take part in and can get value from. **TWR**



How do you become efficient if you don't have the ability to invest in your infrastructure? It's a bit chicken and egg, but I do think we should openly acknowledge that there are additional market costs which were not envisaged

6 INDUSTRY COMMENT

TIME FOR TRUE COMPETITION

From its position of strength as a successful retailer, Everflow can offer frank feedback on what the current reviews of the market need to deliver.

As an unassociated, national, successful retailer, Everflow are uniquely placed to review the market across England.

Everflow are among the top performers, with consistent growth since the market opened, a 98% customer retention rate, delivering bill and customer service benefits to customers of all sizes - particularly SMEs. 4% of the market has chosen to switch to Everflow in the past four and a half years.

At five years after market opening, we want to see some genuine progress towards a truly competitive market enabled by regulators and the market operator.

Water efficiency

Firstly, we're disappointed that water efficiency is not taking a more central place in the REC and the MPF. We don't agree that this important topic should only be considered by MOSL in the MPF review, but that it should play a central role in the economics of the market and delivery of the outcomes laid out in Defra's SPS over the years to come.

The MPF should incentivise great customer outcomes through good behaviour and planning by market participants, and the REC should

allow their delivery in a commercially viable way. If one is reformed without due consideration for the other, we risk diluting incentives and achieving poorer outcomes for customers.

The regulatory frameworks need significant reform to allow delivery of water saving - including consideration in the regulatory price reviews which only typically address wholesalers. Water scarcity is a real and growing threat, yet retailers are not funded to deliver the demand reduction and water efficiency stated in their licence conditions.

Price caps: insufficient even for the efficient

The current regulatory framework does not allow progress towards a market that mainly functions through competition rather than regulation.

Ofwat suggested in the REC consultation that market frictions are causing the low rate of switching in the NHH market, but we believe the contrary - dissatisfaction drives customers to shop around. In a market where all retailers were delivering quality services and pricing, a lack of switching would not necessarily be causing customer harm. However, this is not currently the case.

The current and proposed price caps in the REC are insufficient for even efficient retailers to effectively serve customers. A report by Economic Insight in 2021 demonstrated that price caps for smaller customers are far below the level needed to serve them effectively. Price caps should be based on real-world market data from the last five years, rather than inadequate, wholesaler-based pre-market estimates. The price caps are also set at an average level, which means that some customers cannot be served at or below the price cap, and therefore cannot access the market. Caps need to be set to allow competition to drive prices, rather than the cap being set at the level of an efficient retailer, which restricts competition from taking hold.

The existing MPF and REC are likely to be causing retailers with large inherited customer bases significant financial distress. This will ultimately lead to customer harm, with retailers less inclined to deliver quality services to the smaller customers who represent most of the NHH market. The current framework does not enable retailers to deliver good enough savings, service, innovation or water efficiency to SME customers.

In our response to Ofwat's REC review consultation, we asked Ofwat to:

- Move to a much higher, "backstop" REC - which protects customers from price gouging but allows the market to grow towards market equilibrium rather than a regulated construct.
- Increase price caps through: a cost-assessed net margin for the smallest customers with a materially higher backstop than this (essential - given that this group represents 86% of the market); increased gross margin for medium usage (Group 2) customers; and national rather than regional price caps.
- Publish a roadmap for how and

when Ofwat will relax and ultimately remove price caps.

- Take a joined-up approach to water efficiency between the REC and MPF.

These adjustments would increase fairness, by reducing customer subsidies for riskier segments; deliver greater water efficiency and customer savings and benefits; and increase innovation, because improved retailer returns will make the market more attractive to investors and provide greater incentives to innovate.

MPF: more regulation than competition

The current MPF is undermining the market because it operates more as economic regulation than as a mechanism to promote competition and focuses too heavily on individual company outputs instead of customer outcomes, and incentives are not significant enough for wholesalers.

MPF incentives unfairly penalise retailers for data issues they have no control over (caused by wholesalers). Despite our good performance, we received a net penalty from the MPF last year. For example, a significant proportion of failed meter reads are due to damaged meters, inaccessibility and poor meter location data, which cause most of the customer dissatisfaction around inaccurate billing. Yet it's often less costly for wholesalers to pay the penalty than to fix the problem. Access to accurate and complete customer, consumption, premises and asset data (including from smart meters) is essential for delivering water efficiency to businesses, so wholesalers should be held accountable for providing this.

The only solution to reducing Long Unread Meters to zero and to guarantee no skipped reads is for every non household meter to be made smart, i.e., readable remotely, with frequent data uploads, but this isn't possible for retailers to

The current and proposed price caps in the REC are insufficient for even efficient retailers to effectively serve customers.

influence under the current regulatory framework.

Recent research by Arqiva found that smart metering is cost beneficial, returning £1.73 of value per £1 invested. But there are complex,

non-standard processes for installing loggers and smart meters, and this is probably why NHHs have been largely left out of wholesaler smart metering programmes. We look forward to hearing the conclu-

sions of MOSL's review of roles and responsibilities around metering in the NHH market.

We support the inclusion of both financial and reputational incentives in the revised MPF, which can

be adjusted as performance improves. We'd also like to see more substantial incentives based on absolute performance standards, instead of many small charges for every minor transgression. **TWR**

EVERFLOW TAKES THE CLIMATE PLEDGE

As a water supplier and retailer, we are particularly conscious of our impact on the environment. Water itself is a renewable resource, but the industry around it can be quite carbon-heavy, especially when we account for the journey it takes to get to our customers and when they heat it on site.

The unpredictable and extreme weather caused by carbon emissions has far-reaching consequences, such as heatwaves, droughts, water shortages, flooding and burst pipes.

That's why we've joined 311 other businesses in signing The Climate Pledge, a joint initiative between Amazon and Global Optimism to measure and report greenhouse gas emissions on a regular basis, reduce them as much as possible, and absorb the rest, with the ultimate aim of reaching net zero status by 2040.

The pledge challenges signatories to implement decarbonisation strategies in line with the Paris Agreement, through real business change and innovations, including efficiency improvements, renewable energy, materials reductions and other carbon emission elimination strategies.

Signatories will also need to neutralise any remaining emissions with additional quantifiable, real, permanent and socially beneficial offsets.

At Everflow, we're working on

both aspects by reducing the impact that we, our customers and our suppliers have, and taking measures to neutralise unavoidable carbon use.

Carbon-neutral

We're proud to be the first water company in the UK to become carbon neutral, having achieved this by implementing several schemes and initiatives for ourselves, our customers and our suppliers. While wholesalers are on their own journey to net zero, we wanted to neutralise emissions from our customers' water and wastewater supplies until they get there.

We've offset the carbon emissions of our whole supply chain, as well as our customers' supply chains, through buying credits to offset emissions produced in the process – from getting water from reservoirs, treating it and it returning to the sea.

The credits we bought are 'buy to retire' (not tradeable) United Nations Clean Development Mechanism certified carbon credits from THG Eco. This means all our customer contracts are fully carbon neutral from 2021 to 2023 inclusive. These particular credits are supporting a renewable energy project in Hunan province, China – again, meeting one of the key criteria of the Climate Pledge. We are carbon neutral ourselves since 2020.

A large proportion of our emissions are generated by the third parties we use for services such as meter reading, debt collection and tenancy changes. This year we will be focussing on informing, supporting and encouraging as many as possible to reduce their

emissions; in fact, we've already supported a large property management firm on a bespoke water-saving plan.

When suppliers have had a chance to respond, we can require any potential suppliers to share their carbon reduction plans, and consider how well they are performing in our contract selection criteria.

Customer care

As we've offset our customers' emissions from water and wastewater supplies, they do not need to count us in their own carbon footprints.

As part of our commitment to the Climate Pledge, we're also supporting our customers to save as much water as possible. This not only helps reduce the amount of water abstracted from the environment and reduces carbon emissions, but reduces their water bills too.

Our environmental services coordinator is supporting our mission to deliver innovative efficiency products and services and will drive the rollout of a series of smart water logger, water efficiency, and leak detection and repair products this year.

We're big supporters of smart water meters as well. They play a vital role in reducing consumption, ensuring customers are being charged accurately, and alerting everyone to any leaks – one of the most common reasons for water wastage.

Closer to home

Being a fast-growing business, it would be easy for us to focus on growth to the detriment of the environment. To ensure this does not happen, we've taken a good look at the areas that generate



Clare Galland is the environmental and regulatory affairs manager at Everflow Water.

the most emissions and created an action plan to minimise our carbon footprint, even as we expand into new utilities and markets.

Our employees care about the environment as much as we do, and after a recent survey we found out that many of them were interested in converting to electric vehicles. To support this, we've partnered with Octopus to provide an employee electric vehicle salary sacrifice scheme. This means that those who are interested can access vehicles more affordably.

Since the pandemic sent us all home, we've been fortunate to be able to continue with hybrid office and home-working even now all the restrictions have ended. And when we look for new office premises, the transport, cycling and walking links will be a key part of our decision-making, as well as energy and water efficiency.

We're committed to doing everything we can to protect and secure the environment for future generations. Our Climate Pledge commitment to being carbon neutral, reducing emissions and reaching net zero will ensure we deliver on this promise. **TWR**

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Fifth amendments
As the retail market turns five this month, MOSL CEO Sarah McMath calls for meaningful change.

COMPETITION WATCH
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Covid bad debt decision. Staff suppliers want the market to go beyond the basics.
Everflow on the market reviews and taking The Climate Pledge.

INSIDE RIVERS AND SEWAGE | LEAKAGE ROUTEMAP | SMART METER CHOICES | GALLFORD TRY STRATEGY | GREEN TARGETS