A DRAIN ON RESOURCES

Leakage is a water resources problem now – and Ofwat is planning a reporting shake-up to get fit for 2050.

In 1999, the Annual Leakage Conference's first year, two US social psychologists published their findings of a behaviour pattern whereby people with limited competence in a particular area overestimate their abilities.

Opening his talk at the 25th conference, innovation manager at SES Water, Jeremy Heath, referred to this – the Dunning-Kruger effect – in the context of the UK public's understanding of the task of addressing leakage. Heath cited Dunning-Kruger to explain the population's grasp of the issue: "This is why people look at leakage and ask: 'how hard can it be? Why does the industry struggle – surely it's simple?'"

But another facet of the Dunning Kruger effect is that when people improve their knowledge in a subject, their confidence grows steeply but hits a slump when the full extent of the challenge is revealed to them. Heath said the water industry has itself reached that stage: "We are at that point in this industry… how much more we need to understand about our buried infrastructure; about how our customers use water; about the under registration of our meters; and about material science in play."

Concerted effort

If the sector is feeling stymied by the scale of the leakage challenge, it is not through want of trying. Anyone who attends the Leakage Conference regularly will know there is a buzzing community of passionate specialists who come together year after year to willingly exchange updates and swap ideas. As Ian Pemberton, principal engineer for asset management and operational resilience at Ofwat said at December's event: "The passion and the enthusiasm and the dedication and the commitment of the people just bowls me over every year."

Many initiatives that are underway were showcased at December's event; a few are summarised in the box. More widely, there is a packed UKWIR programme devoted to leakage, and a heat map showing around 400 company projects across the country.

Progress has not stagnated. In fact, of all areas, leakage was one of the more positive showings in the most recent *Water company performance report* from Ofwat. Opening the conference, Portsmouth Water chief executive Bob Taylor noted that leakage was at its lowest level in 20 years, with end of March 2024 data showing a 4% reduction. Moreover, company business plans for AMP8 put forward a further 13% cut.

The picture is not perfect. Among other things, Taylor mentioned skills, staff motivation and recruitment challenges; projects overlapping; weather impacts biting; and the need to do more on the repair side. But this is far from a community resting on its laurels.

Burning platform

However, that the sector needs to up, or perhaps change up, its game is not really disputed and comes on the back of two particular developments. The first is elevated levels of public scrutiny and popular and political pressure. This hasn't yet turned its guns on leakage anything like it has on sewage discharges, but that could just be a matter of time.

The second, the big one, is that reducing leakage is not a nice to have any more. It is one of three essential requirements – alongside increasing supply and cutting demand – that all need to be achieved if we are not to run out of water. Leakage is now a water resources challenge.

"Call it what you will, a burning platform," Pemberton said. Around 1bn of the 5bn litre a day supply gap identified by 2050 is due to come from reducing leaks. The sector has agreed to cut leakage by a third by mid century.

Taylor highlighted that c19% of distribution input as leakage is not acceptable in the Environment Agency's view or to many members of the public – particularly in a world of climate change, population growth and as there is a need to leave more water in the ground for nature.

Pemberton considered the journey leakage has been on over the years, from being economics-driven (the Economic Level of Leakage period), to factoring in socio-political considerations (the Sustainable Economic Level of Leakage, SELL, period), "and now it is a water resource problem that we have to resolve by 2050".

He continued: "Where are we now? Well, we're behind target. I don't think you needed me to tell you that. Whatever we're doing, we need to do more of it."

The conundrum of leakage as a water resource problem is far from lost on the industry. Speaking at December's conference, Glen Mountfort, director of technical consulting at WRc, and Dr Joe Sanders, senior technical director at Tetra Tech RPS, took delegates through the thinking behind the decision making framework underpinning the industry's leakage route map. Much of that was about effectively approaching leakage in the new water resources world.

Mountfort said that SELL was accompanied by good technical guidance, but as the world has moved on, "a bit of a void, a bit of a gap" has been left. There is little consistency, he explained, in how companies are approaching leakage now, not least because guidance on leakage in the water resource management planning (WRMP) framework is quite limited, and other information is dispersed across various documents. "We need to formalise that and get some consistency," he said.

Reporting review

Amidst all of this, the big news of the December conference was that Ofwat is to launch a review of leakage reporting early this year. Pemberton announced he is taking a paper through Ofwat's Policy Forum to get approval for "a complete blank sheet of paper, a root and branch look at all of that reporting methodology…[to answer the question] How we can get leakage reporting fit for purpose for 2050?" There will be no impact on reporting requirements for 2025-30, but potentially some shadow reporting. The aim will be to bring in changes in time for PR29.

There are a couple of core drivers behind this: regulatory concerns about current leakage reporting arrangements, and the fact that the world has moved on and the regime needs to keep pace.

On the former, the regulator has previously raised concerns about how water companies are interpreting and following its guidance on leakage reporting. At the 2023 Leakage Conference, Pemberton alluded to whether companies were in fact operating in compliance with their licence conditions on this matter.

He explained: "What I said last year was that we don't regulate on the reporting guidance, we regulate on licence conditions. The licence conditions broadly say you should have good control of your systems, effective management and effective finances to deliver your licence obligations, that you accurately report, and you give us the information that we need in order to do our functions…What I'm seeing is our guidance has been taken very literally, and there's a degree of…if people are complying with that guidance, then they believe that there is no case to answer."

Compounding this are Ofwat's concerns about the accuracy, consistency and certainty on leakage numbers. Pemberton shared that while there is a welcome "sea of green" on Ofwat's RAG checklist, 12 companies can't get the water balance gap to be better than 2%. "That is a worry to me, that we're saying we've got a high degree of confidence in each of those elements, but when you add them all up, it doesn't work out."

He added: "The other thing…is that we have a different methodology on reporting leakage in Ofwat to the Environment Agency and the WRMPs. It might only be a couple of megs different, but in terms of public perception and public confidence, to have a small difference, I just don't think it sells the right message."

That sits particularly uncomfortably in a world where public trust in the sector is diminished, there is a growing appetite for information robustness and transparency, and Ofwat is adopting the stance of a more activist regulator.

On top of all of that, the imminent roll-out of widespread smart metering will bring new and exciting insights, albeit how best to use that data will be a challenge.

BABE

Pemberton emphasised that changing how leakage is reported is not a decision being taken lightly. It has Ofwat's own econometricians and economists wanting to "tear their hair out" because a change will limit the historical evidence trail. But: "I think it feels like the right time, the discussions we were having… it feels like the right time to just go 'look, actually, let's take it out of the AMP cycle. The review is not part of the PR29 price review methodology. It will absolutely feed into it, and it will help inform the decision making there. But this is not the start of PR29 methodology planning. This is entirely separate."

Ofwat is expected to start engaging on the review shortly; in the meantime, the very keen can get in touch via leakage2050@ofwat.gov.uk

Pemberton said there are "no preconceptions here at all" – beyond what has already been mooted with the sector. "We've signalled that we want to see the use of burst and background estimation (BABE) allowances phased out for trunk mains," he shared. "I think we are just saying that 30 years post privatisation, we can do something better than just an allowances approach."

Questions from the floor indicated some concern here. One contributor succinctly put it: "With BABE being removed, is there a risk that many more companies will end up with increased leakage?! So the reduction to date graph will look even worse?" Others questioned whether there would be more focus on top down leakage, and whether the plan is to "see a change in leakage reporting responsibilities to network losses as per international practices?"

Pemberton could not give much away in December, but more information will be forthcoming soon.

> **A complete blank sheet of paper, a root and branch look at all of that reporting methodology.**

ROUTEMAP AND INNOVATION FUND PROJECTS

Among the updates shared at the 25th Annual Leakage Conference were:

Water UK Leakage Routemap – David Jacobs, leakage strategy manager at Anglian Water, covered the four projects pursued over the course of the year:

- Customer side and plumbing loss quantification - by Artesia
- Calm and optimised networks - by WRC
- Alternative Leakage Control KPIs - by RPS
- A review of mains renewal techniques - by Watershed Associates.

Ofwat Innovation Fund leakage projects

- National Leakage Research and Test Centre – an update on the design, progress and service offering being worked up – by Dan Wilson of Northumbrian Water and Andy Ball of HR Wallingford.
- Managing background leakage – consultant with HWM Invenio, Stuart Trow, introduced a £3.4m project now its third year, considering the question: can we reduce background leakage? The project's findings so far raise what Trow saw as a fundamental question: "If we have to half leakage by 2050, how are we going to do that if half of that leakage is background leakage?"
- Designer liners - from Dr Katrina Flavell of Yorkshire Water and Dr Joe Sanders of Tetra Tech RPS.
- Universal Access Point for Water – by Dr Leo Carswell of WRc.