

Meeting note

Wednesday 23 June 2021
14:00 am to 16:00 pm

Leakage and metering information workshop (LMIW)

Attendees

Anglian Water	Richard Goodwin
Dŵr Cymru	Gareth Paske
Hafren Dyfrdwy	Kristinn Mason
Northumbrian Water	Andrew Blenkhorn
Severn Trent Water	Rob Holdway
South West Water	Ben Ward
Southern Water	Simon Potter
Thames Water	Tim McMahon
United Utilities	Sam Fox
Wessex Water	Martin Gans
Yorkshire Water	Adam Smith
Affinity Water	Ian Butler Nicky Fomes
Bristol Water	James Holman
Portsmouth Water	Jamie Jones
SES Water	Van Dang Daniel Woodworth
South East Water	Tim Charlesworth
South Staffs Water	James Curtis
Ofwat	Dave Watson, Lesley Salt, Connor Ryan, Tim Griffiths, Beckie Paterson, Simon Harrow, Dave Watson, Jennie Seymour, Stewart Loftus

Ofwat opened the meeting and set out the agenda and background to making improvements to the information collected on the costs and benefits of metering and leakage activities. The slide pack 'Leakage and metering workshop – 260621' has been issued to all attendees.

Discussion of the background included the data reported in the 2015-20 period, the use of this data in PR19 assessments, current reporting requirements for 2020-21 and the proposed reporting requirements for 2021-22.

Ofwat set out the aim of the workshop – to provide a forum for discussion to support formal company responses to the [May 2021 regulatory reporting consultation](#) and the development of leakage and metering data collection to improve understanding of the costs and benefits of these activities.

Questions discussed in breakout groups:

- Question 1: What factors are influencing the costs of delivering leakage and metering activities and the level of demand reduction benefits they deliver?
- Question 2: What information on leakage activities is required to understand costs and benefits and to be able to meaningfully benchmark company approaches? What are the issues involved?
- Question 3: What information on metering activities is required to understand costs and benefits and to be able to meaningfully benchmark company approaches? What are the issues involved?
- Question 4a: What considerations will drive your proposed levels of leakage reduction and size of metering programme in WRMP24 and PR24 business plans?
- Question 4b: What options are there for developing the collection of additional metering and leakage information collaboratively between companies, regulators and other stakeholders?

Feedback from discussions

Points raised by companies in breakout discussions have been summarised under the relevant question.

Q1 – What factors are influencing the costs of delivering leakage and metering activities and the level of demand reduction benefits they deliver?

Individual companies raised a variety of points regarding the factors that could influence the costs of delivering leakage and metering activities which we summarise below.

- For both metering penetration and leakage reduction, costs and benefits will be dependent on your current position and the proportion of 'low hanging fruit' remaining. Opinion was that costs will increase as leakage levels decrease/metering penetration increases.
- Company history with respect to SELL will have influenced previous strategies and will therefore influence the potential activities available now, related costs and benefits.

- Location of leakage in the network eg trunk main, DMA or customer supply pipe will influence cost.
- Additional factors influencing costs and benefits of metering and leakage activities mentioned:
 - Weather;
 - Water stress classification of region – ability to move customers onto measured billing;
 - Supply chain considerations - availability of skilled resources and equipment;
 - Rural/urban split of region;
 - Rural challenges including limited communication coverage for smart meters/sensors, leads to different AMI solutions than urban – potentially with different data capture rates, increased costs for AMR options; reduced longer run times for leaks potentially result;
 - Traffic management challenges when digging holes for repairs (potentially impacting meter installations depending type and location);
 - Opportunity of combined delivery of activities to achieve efficiencies, for example the potential requirements to reduce lead levels to 5 mg/l may require supply pipe replacements providing an opportunity to install meters, reduce leakage and reduce lead levels;
 - Realising these opportunities/including them in PR24 business planning is dependent on a decision on future lead requirements being made; and
 - Level of opportunity for efficiency will be governed by number of lead supply pipes in the region.
 - Hydraulics of networks and the stress applied due factors such as pumping requirements and variable usage from large NHH users;
 - Rate of deterioration of existing asset base/asset health of the network;
 - Number of customers per kilometre of mains;
 - Topography of network;
 - Opportunity for pressure management schemes;
 - Soil conditions;
 - Stress on networks from climate change – potential for greater peaks of demand from customers;
 - Customer views and options will have a bearing on the challenge of reducing demand - different levels of receptiveness to the water saving/reducing wastage message between customer groups. Different approaches may be required for different customer groups; and
 - Property types within region eg proportion of flats, tower blocks, homes with shared/joint supply-pipes.

Feedback points common to the discussion of questions 2 and 3

- Consistent reporting guidelines are key to achieving comparability in reporting and delivering meaningful information at a more granular level.
- Associating costs and benefits may be challenging where benefits are delivered in different years to costs or benefits are delivered cumulatively over future years.
- The performance commitment/leakage reporting consistency project definitions and work should be the blue-print for developing reporting in these areas.
- Starting reporting at lower levels of granularity may be easier to do and enable more consistency earlier on, allowing time for more detailed granular data categories to be agreed for future reporting.
- Companies may use cost as a measure of activity which could limit the available 'scale' of activity factors available across the sector.
- Existing accounting systems may not clearly separate out activities meaning significant assumptions would have to be made.
- In capturing benefits does the split of leakage or consumption matter – if the end result of reduced demand/abstraction is achieved?

Q2 – What information on leakage activities is required to understand costs and benefits and to be able to meaningfully benchmark company approaches? What are the issues involved?

- Methodology for reporting is required to attribute cost/benefits to each element of repair/detect/prevent in order to address the risk of double counting. Methodology would require clear boundaries between elements eg start/stop triggers and direction for attributing benefits to multiple activities undertaken in the same area.
 - Any methodology would need to be clear on how to assign costs for equipment/resources for which leakage management is only part of their function/role;
 - A clear definition and split between proactive and reactive leakage would be beneficial; and
 - Measurement of benefits can be challenging – effort doesn't always bring expected reductions.
- Split of maintaining and reducing leakage levels.
 - Potentially an arbitrary split and dependent on assumptions made to establish leakage avoided through the activity undertaken eg is it compared to an 'average' weather year. Requires consideration of the natural rate of rise/background leakage.
- Natural rate of rise/background leakage.
 - To understand the benefits delivered in terms of maintaining and reducing leakage an understanding of background leakage is required;
 - At present companies will consider different natural rates of rise (NRR);
 - Comparison of company views on NRR could be informative – work on a consistent approach to evaluating the figure could be of value;

- The validity of current assumptions in terms of the minimum level of leakage that could be achieved in a given area were questioned – raising the potential for further study in this area;
- Some contributors referenced the use of waterfall diagrams in internal reporting to indicate the leakage avoided through the activities undertaken to maintain leakage; and
- Increasing levels of smart meters may be necessary to determine background leakage/minimum levels that can be achieved.
- Reporting in broader categories such as repair, prevent, detect – may offer a route to improve granularity and maintain consistency.
- Activities undertaken within a category, for example, 'find and fix' could be quite varied and span a range of technologies from low to high. Question what is the best metric for find and fix/active leakage control is it, area covered, resources deployed, hours spent? If all benefits occur at the point of repair, and repair is recorded separately, then no benefits would be allocated to active leakage control or the 'find' element of find and fix.
- Repair-costs of digging were identified as a significant component, including challenges such as traffic management. No dig techniques and optimal contracting of delivery of maintenance activities were mentioned as potential areas for innovations or optimisation.
- It should be possible to assign benefits to pressure management schemes, these potentially vary by DMA depending on network characteristics. A methodology could be developed to calculate benefits of pressure management schemes.
- Table 6E in the May 2021 consultation could be considered a sensible starting point but further clarity would be needed to prevent double counting.

Q3 What information on metering activities is required to understand costs and benefits and to be able to meaningfully benchmark company approaches? What are the issues involved?

- Metering replacement requirements will become more prevalent as existing assets age (influenced by 'robustness' of meters installed)– question as to how this will be addressed in allowances. There is the potential for 'lumpy' investment as groups of assets with similar asset lives require replacement.
- For meter installations and replacements, the location of meters has a significant bearing on costs eg internal/external. This and other factors will impact the cost-benefit of installation which can vary on a DMA by DMA basis.
- Metering technology options are greater than those currently proposed
 - 'clip-on' meters represent an option for increased data collection and could be used in conjunction with more reliable less-smart meters; and
 - AMI type functionality may be delivered through very different communication systems and provide different service levels in terms of data availability and incur different costs. View that it was not currently

possible to have a meter that works on all potential communication networks to retain future flexibility.

- Consider supporting costs for operating selected metering options eg communication network set-up, communication network operation, frequency of manual reads.
- Benefits derived from metering schemes are linked to the customer journey/engagement that runs alongside a meter installation programme and may continue post installation. Companies will have varying approaches here and savings will be impacted by this. Potential requirement to capture these supporting costs relating to water efficiency more clearly – currently costs are within supply demand balance expenditure lines not metering.
- The effectiveness of how metering data is utilised will influence benefits delivered. Full end to end costs of a programme could be needed to evaluate benefits delivered. This is what companies are considering in WRMPs.
- Consider what customers want in terms of data provision and what they will support paying for.
- Benefits of metering may vary over time for example if customers don't value the bill reduction from being more water efficient – continuous engagement potentially with smart meters may help to sustain benefits.
- Benefits of metering are theoretical and consideration that they are challenging to accurately measure retrospectively – see the performance commitment/leakage reporting consistency project – companies may have significantly different approaches to calculating benefits.
- Metering strategy adopted will influence costs for example optant or compulsory – as mentioned above the ability to compulsory meter relating to a regions water stress classification will influence strategy. Company strategy may vary depending on whether leakage or PCC reduction is being principally targeted through metering.
- Property type in area can influence both costs and benefits - Bulk meters may be necessary where individual supplies cannot be metered eg flats, tower blocks.
- Size of meter required will influence cost.
- Metering will bring additional benefits beyond demand and leakage savings such as accuracy of billing and enhancing the customer experience.
- Baseline performance can be challenging to understand benefits of smart metering – likely to be a tipping point in each area for the smart meter penetration level required to bring optimal benefits

Q4a What considerations will drive your proposed levels of leakage reduction and size of metering programme in WRMP24 and PR24 business plans?

- Consideration of whole life costs will impact the interventions selected to deliver leakage and metering strategies. Focusing on the long-term targets will influence strategy development.
- The supply demand balance gap will inform the size of demand reduction required with a minimum requirement of ensuring long-term targets are delivered to ensure customer acceptability eg remain on a glidepath to deliver a 50% reduction in leakage

levels. The progress towards these long-term targets made in 2020-25 will influence the effort required in subsequent periods.

- Consideration that reduction in consumption across all users may offer a bigger benefit than leakage reduction and will therefore influence how much leakage reduction is required to maintain the supply-demand balance.
- New external targets/pressures such as the 15% reduction at PR19 will obviously influence strategy – view that targets should allow companies to be agile and deliver flexibly.
- Option to compulsory meter will influence strategy.
- Considerations of ensuring resilience and that plans are sufficiently agile to respond to unknowns – eg pandemic.
- Consideration of other drivers and ODIs for example water quality-lead requirements and mains repairs. Potential for conflicting drivers was raised and need for early clarity on requirements to maximise efficient delivery.
- Consideration of natural capital in assessing options.
- Consider customers view on information they want and how smart meters may deliver this.

Q4b What options are there for developing the collection of additional metering and leakage information collaboratively between companies, regulators and other stakeholders?

- As stated above developing definitions is key to supporting consistent reporting.
- Detailed working groups could be used to develop reporting requirements.
- An approach similar to the leakage consistency project could be adopted.
- Using groupings of broader activities avoiding too much granularity (eg prevent, detect, repair – or equivalent) could provide a shorter route to more consistent reporting. A reduced form of Table 6E could be a starting point.
- Sharing information/learning on smart meter roll-out or experiences would be beneficial.
- Comparison of data would need to include caveats eg regional specific reasons for variance.
- Historical data comparison to the present may not be straight forward due to factors such as changes in technology. Also schemes may have delivered leakage benefits eg water quality schemes but not have been captured as such in company systems.
- Understanding what represents an efficient future cost is challenging considering potential changes, climate change, technology etc.

Next steps

- Ofwat thanked attendees for their participation in the discussions and requested companies to include their views and proposals in responses to the [May 2021 regulatory reporting consultation](#) which closes on 08 July.