

Arqiva Submission: Ofwat – ‘PR24 and beyond: Long-term delivery strategies and common reference scenarios’

Submission Information

Name and role: [REDACTED], Director of Strategy and Regulation

Response on behalf of: Arqiva

Dear Sir/Madam,

Arqiva is a communications, infrastructure and media services company that is the only large-scale provider of smart water metering infrastructure in the UK. We work with some of the UK’s largest water companies, including Anglian Water, Thames Water, Northumbrian Water and Yorkshire Water, to support the digital transformation of their businesses through the provision of solutions that identify leaks, abnormalities and consumption levels, and provide actionable data and insights to both water companies and their customers that power decision-making. These benefits have been proved at significant scale with nearly 1 million meters providing hourly reads across our customers.

Arqiva welcomes this opportunity to comment on Ofwat’s discussion paper, ‘PR24 and beyond: Long-term delivery strategies and common reference scenarios.’ Looking ahead, society, industry and the UK at large are confronted by a spectrum of challenges, created by the escalating impacts of climate change and the anticipated future fluctuations in water demand and supply. The actions taken over the next decade by the water sector, under the guidance of the regulator, will be critical in protecting our natural environment and ensuring the continual delivery of plentiful and secure water supplies for years to come.

Through this response, Arqiva wishes to highlight that:

- Ofwat should bolster the discussion paper’s language on and objectives around smart water metering technology, encouraging companies to account for how they can work to accelerate the deployment of smart water metering during the PR24 period and supporting companies to achieve this. Arqiva welcome’s Ofwat’s support for the need for longer term investment through PR24, however considering that the economic life of a smart meter is approximately 15 years in length, metering networks need to be treated in the same way, with the investment and return expected over the same period.
- Independent research¹ commissioned by Arqiva and carried out by Frontier Economics and Artesia shows that a coordinated rollout of smart water metering across England and Wales would deliver £4.4bn in benefits to society against costs of £2.5bn; a net benefit of £1.9bn. The new analysis points to a clear environmental and social benefit from the implementation of metering with £1.73 saved for every £1 of cost incurred. Moreover, separate evidence² compiled in conjunction with Waterwise estimates that if just one million smart water meters were to be fitted in the UK each year

¹ [Frontier Economics, Artesia, Arqiva](#), Cost benefit analysis, assessing the social and environmental case for a smart water meter rollout, November 2021

² [Arqiva and Waterwise](#), Smart water metering and the climate emergency, April 2021

for the next 15 years, then by the mid-2030s, savings of at least one billion litres of water a day (1,000 Mld) could be made and the UK's current total annual greenhouse gas emissions could be reduced by up to 0.5 per cent (2.1MtCO₂e).

- Arqiva would greatly value the opportunity to meet with Ofwat's officials to highlight our points regarding the direct benefits of smart metering.

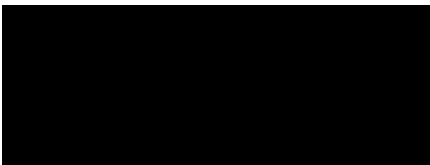
The effects of climate change are making rainfall less reliable which, together with an increasing population and unresolved leakages in both water and wastewater services, is placing ever-increasing pressure on water resources. Findings from the Climate Change Committee (CCC) have already argued that actions taken to help bolster the nation's resilience and adaptation to the effects of climate change have "failed to keep pace" with growing climate related risks.³ However, the CCC emphasises that "further reductions in water use by households would make them less vulnerable to water shortages" in future.⁴ At the helm of the water sector, Ofwat will play a critical, guiding role.

Therefore, as mentioned, we welcome Ofwat's commitment to a long-term focus so far in the PR24 process and the discussion paper's recognition that "together, we need to tackle demands from climate change and respond to customers' increasing expectations around service and treatment of the environment, while recognising pressures on customers' ability to pay their water bills." It is Arqiva's belief that smart water metering technology provides an available technological solution now that can help companies tackle these priorities.

In order to successfully mitigate and adapt to the effects of climate change and counteract future fluctuations in demand and supply and customers' bills, it is incumbent on Ofwat, the Government, and the private sector to work together to ensure the resilience of our natural resources and support the public in making environmentally conscious decisions.

This is an area where the water sector has already shown strong leadership. However, a long-term approach that is pro-smart metering, through the PR24 process, is now needed. This approach should recognise the benefits of creating a truly digitalised water infrastructure network, should utilise the strengths of every aspect of the water industry and encourage a collaborative approach by all parties.

Yours sincerely,



Director of Strategy and Regulation
Arqiva

³ [Climate Change Committee](#), Independent Assessment of UK Climate Risk, June 2021

⁴ [UK Climate Risk](#), Water Briefing – Findings from the third UK Climate Change Risk Assessment (CCRA3) Evidence Report 2021, June 2021

Arqiva's comments on 'PR24 and beyond: Long-term delivery strategies and common reference scenarios' guidance by Ofwat

Arqiva agrees with the consensus amongst the water sector that “an increased focus on the long-term should be one of the key themes of PR24.” It is right that the sector considers carefully, via five-year business plans, its trajectory towards outcomes in 2050 and Arqiva supports the discussion paper’s approach that strategies will need to remain flexible and may need to be modified to account for unforeseen changes in the future. The discussion paper’s outlining of the common requirements for companies’ long-term delivery strategies will serve to provide coherence as the sector charts its trajectory towards the ‘2050 outcome.’ However, with the regular economic life of a smart meter being approximately 15 years in length, metering networks also will require this long-term focus on investment and return over the same period.

As a key focus question, the discussion paper asks, “*given future uncertainties, what activities need to be undertaken in the next price review period to meet long-term objectives, and what should be scheduled for future periods?*” Arqiva agrees with the set of ‘common reference scenarios’ that the document proposes that companies should account for in their long-term delivery strategies as the key drivers of uncertainty for the sector going in the future: Technology, Climate Change, Demand and Environmental Ambition.

These scenarios effectively capture the key trends that confront the sector, providing an adept framework that will allow companies to effectively calibrate their commitments in their long-term delivery strategies. In fact, as we will discuss later in this response, smart water metering delivers benefits under each of these themes, as indicated by new research commissioned by Arqiva examining the [public’s attitudes](#); the [environmental case](#) and a [cost benefit analysis](#).

Specifically, under the paper’s ‘Technology’ common reference scenario, Ofwat makes clear its expectation that companies will “consider a wide range of technological developments in their long-term strategies,” including, “smart metering and network telemetry.” Arqiva strongly welcomes this recognition in the paper and Ofwat’s point that “smart meters and network telemetry are widely used in the water sector today to monitor data such as water consumption, flow, pressure and quality,” however it should also be noted that communication technologies can provide critical telemetry in the wastewater network.

Arqiva believes that Ofwat should go further under this common reference scenario to emphasise to water companies the importance of specifically accounting for smart water metering in their long-term delivery strategies. The paper currently underplays the importance and benefits of smart water metering as a readily available solution for the sector.

In addition, whilst the recognition of “100% smart meter penetration by 2050” in the ‘high technology scenario’ is a prudent observation to make, this date range is unambitious for the roll out of an existing technology and the reference to smart metering here is too high level. It is Arqiva’s view that the PR24 investment planning process should be used to encourage and support water companies to accelerate the roll-out of smart meters. Further funding needs to be made available from the 2024 price review onwards to enable the water industry to invest over the long term in the rollout of smart meters for the clear benefits we discuss in this response.

Furthermore, the ‘low technology scenario’ currently makes no mention of smart metering penetration and should be amended to include this as a factor. Whilst in a low technology scenario, metering penetration may be less significant, given that a number of water companies are already progressing smart metering deployments, the impetus suggests that this will continue to occur through to 2050 and should therefore also be accounted in the lower technology scenario (even if less prevalent) and in water companies’ delivery strategies.

Benefit 1: The role of smart water metering in delivering a resilient water sector

As mentioned, Arqiva believes that the discussion paper, particularly under the common reference scenarios, currently underplays the important role of smart water metering and the extent to which companies should account for the technology in their long-term delivery strategies. Language under the section concerning ‘Technology’ common reference scenarios should be strengthened to this end. Consideration for a roll-out of the technology could also be made under the ‘Demand’ common reference scenarios, which already includes factors such as the potential for future changes to building regulations and product standards on water demand.

The connectivity that smart water infrastructure provides enables water companies to actively manage their network and take action to reduce leakage and implement technological solutions that support environmentally conscious decision-making. However, the implementation of these networks is not uniform across the UK or between nations.

In order to achieve the water industry’s resilience objectives at the fastest possible pace as mentioned, there needs to be a meaningful acceleration in the nationwide rollout of smart water networks and metering. This should be fully supported and enabled by the regulatory frameworks enacted by Ofwat which underpin the development of the water sector.

The real-time (or near real-time) data provided by Advanced Metering Infrastructure (AMI) smart water meters (in contrast to automatic meter reading (AMR) meters which deliver data much more infrequently), provides a much more accurate and up-to-date measurement of water usage across the distribution chain. This allows the industry to identify leaks more quickly and with greater efficiency, reducing water consumption, waste and overall costs, increasing the sector’s resilience to future demand fluctuations. Furthermore, data on household usage allows consumers to become engaged themselves in saving water, helping to drive down per capita consumption. Indeed, in the UK today, over 2.9 billion litres of water put in the public supply is lost to leakage every day, this figure needs to be rapidly resolved if the UK’s water usage is to adapt to the change in environment and climate.⁵

To use an example from England, in April 2021 Thames Water celebrated the installation of half a million smart meters in its region. The company claimed that as of that date, smart meters had helped to detect over 28,000 leaks on customers’ private supply pipes, saving up to 43 million litres of water per day. At the time, Thames Water said that “customer side leaks account for around a quarter of Thames Water’s total leakage and the meter data was cited as playing a large part in the company meeting its leakage reduction target in 2019/20.”⁶ This example alone presents a significant indicator of the positive impact the technology could have if there was encouragement for it to become more widely deployed.

This evidence therefore demonstrates that the discussion paper, under both its analysis of ‘Technology’ and ‘Demand’ common reference scenarios, should deliver an even greater emphasis on the importance of smart water metering solutions. Furthermore, by adding District Metering Area smart meters into the modelling, water network leakage could also be identified in a similar manner.

Benefit 2: The role of smart water metering in countering climate change and protecting the environment

Arqiva believes that the most profound and urgent risk facing the water sector, and society at large, is the climate emergency. The water sector’s ability to reduce its strain on the UK’s natural resources will have a fundamental impact upon the country’s efforts to prevent the deterioration of the environment. Therefore, we welcome the paper’s inclusion of ‘Climate Change’ as a common reference scenario consideration for water companies to account for in their long-term delivery strategies. Indeed, evidence shows that smart

⁵ Water UK, England and Wales, April 2019 - March 2020

⁶ [Thames Water](#), Thames Water hits half a million smart meter milestone, April 2021

water metering technology, if deployed at scale, can also make significant contributions towards the UK's trajectory to net zero emissions.

The water sector has already shown strong leadership in the fight against climate change, committing to a target of net zero by 2030 for its operational emissions. However, given that approximately 6 per cent of the UK's total greenhouse gas emissions each year (circa 27 MtCO_{2e}⁷) comes from activities relating to the production and use of water, it is clear that further measures to reduce the amount of water we consume as a society, and protect the existing water supply, are urgently required.

Arqiva's own analysis shows that smart water metering can directly contribute to the UK's ambitions to meet net zero economy-wide by 2050. Based on evidence compiled in conjunction with Waterwise on the impact of smart meters that have already been fitted, we estimate that if just one million smart water meters are fitted in the UK each year for the next 15 years, then by the mid-2030s, savings of at least one billion litres of water a day (1,000 Mld) could be made and the UK's current total annual greenhouse gas emissions could be reduced by up to 0.5 per cent (2.1MtCO_{2e}).⁸

However, government and regulatory leadership is required if the water industry is to contribute as much as possible to meeting the UK's environmental objectives. The Government and regulators have a vitally important role to play in delivering a holistic policy and regulatory framework that drives and supports change over the long-term and within every aspect of the sector; from the management of wastewater and sewage, to incentivising the water companies to support their customers to actively manage their water usage.

Benefit 3: The economic case for smart water metering and its benefits to the consumer

As mentioned, Arqiva believes that the draft paper's outlining of the common requirements for companies' long-term delivery strategies will serve to provide coherence as the sector charts its trajectory towards the '2050 outcome.' Particularly, under the common requirement of "Ambition," Arqiva welcomes the discussion paper's expectation for companies to "use evidence of customer priorities and preferences to inform the selection and sequencing of enhancement investments for the core pathway up to 2050." The great access to detailed data sets that smart water metering technology provides, could have a profound impact on the ability for customers to manage their bills and for companies to directly enhance their service to customers.

Ofwat needs to ensure that regulatory mechanisms are appropriately tailored to accelerate the deployment of smart water metering nationally. Indeed, the expectations placed on water companies by consumers are continuing to intensify and Arqiva believes that technological solutions can be employed to ensure that companies meet their customers' heightened standards.

Important new research has suggested that a coordinated and accelerated roll out of smart water metering across England and Wales would deliver huge benefits for households, the environment, and the water industry. Independent research⁹ commissioned by Arqiva and carried out by Frontier Economics and Artesia shows that a coordinated rollout of smart water metering across England and Wales would deliver £4.4bn in benefits to society against costs of £2.5bn; a net benefit of £1.9bn. The new analysis points to a clear environmental and social benefit from the implementation of metering with £1.73 saved for every £1 of cost incurred. Savings would come from improved leakage control and network management, and by avoiding the need for other water resources. The study suggests a potential for overall savings in the cost of delivering water and therefore scope to reduce household bills over time. The study also highlighted a positive benefit-to-costs ratio in all areas of England and Wales with the highest ratio in the South-East and East of England, reflecting higher existing meter penetration and greater water scarcity in those areas.

⁷ [Water UK & Artesia, Pathways to long-term PCC reduction, 2019](#)

⁸ [Arqiva and Waterwise, Smart water metering and the climate emergency, April 2021](#)

⁹ [Frontier Economics, Artesia, Arqiva, Cost benefit analysis, assessing the social and environmental case for a smart water meter rollout, November 2021](#)

Alongside the strong economic and environmental cases for a wider smart water metering roll-out, research from Waterwise¹⁰ has also found encouraging signs that the public is receptive to the technology. Nine in ten already have smart technology in their home and 87% would consider getting a smart water meter if it would lead to a reduction in bills and was fitted for free.

Crucially, the research highlights that smart metered customers are more likely to be aware of the water scarcity challenges we face in the UK, are more likely to be aware of their own water use, and are much more likely to act to try to save water. Based on these clear evidence points, if Ofwat in the discussion paper is indeed setting the expectation that companies should use “customer priorities and preferences to inform the selection and sequencing of enhancement investments” then the regulator should be clear that one of the customer priorities that should be facilitated with investment is the accelerated deployment of smart metering.

Moreover, based on Anglian Water’s experience with smart metering, they have predicted an 18 per cent reduction in personal water consumption in their forward investment plans due to smart metering installations. Of this total, they attribute 3 per cent specifically to the additional insights they will gain from smart meters compared to “dumb” meters.¹¹

The value of smart metering has already been recognised by several national bodies including Ofwat itself, the National Infrastructure Commission, the Consumer Council for Water and the Environment Agency, as well as by the water companies themselves. The Climate Change Committee (CCC) has stressed that metering can “help with the management of water usage and supplies during peak demand and help water companies identify and fix leaks”¹², and highlighted the importance of enhanced water metering in reducing future water deficits within its recently published UK Climate Change Risk Assessment (CCRA3)¹³.

Smart metering also reduces the amount of water which must be extracted and processed, resulting in lower costs for water companies, in addition to the environmental benefits we have already described in detail in this response. The Frontier / Artesia research highlights that there is scope for these savings to either be passed on to consumers directly through lower average bills, or indirectly through investment into better, more efficient services. Indeed, as mentioned, there is a broad belief developing amongst the sector that smart metering is the fairest way of charging for water and this should be more greatly reflected in the language of the discussion paper and in the focus of the PR24 process more widely.

Conclusion

Overall, Arqiva greatly welcomes the long-term approach of this discussion paper, the outlined common requirements for companies’ long-term strategies and the common reference scenarios described within. However, the paper currently underplays the importance of smart water metering as a technological solution that companies can employ through their long-term strategies. Through an insufficient emphasis on the importance of smart water metering technology so far in the PR24 process, Ofwat risks missing out on taking advantage of the clear benefits that smart water metering could deliver for the UK water sector, and the related benefits for the environment, the UK’s future water resilience, the economy, and customers’ bills.

Arqiva considers that the PR24 investment planning process should be used to enable and support water companies to accelerate the roll-out of smart meters. Further funding needs to be made available from the 2024 price review onwards to enable the water industry to invest over the long term in the rollout of smart meters. The regulated pricing and AMP framework should incentivise and enable increased use of smart metering and the delivery of carbon emission reductions across the water sector. These should be reviewed to ensure that they support and do not hinder this objective.

¹⁰ [Waterwise, Arqiva](#), Exploring public attitudes towards smart water metering, November 2021

¹¹ [Anglian Water Services Ltd.](#), October 2019

¹² [Climate Change Committee](#), June 2021, p.155

¹³ [UK Climate Risk](#), June 2021

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About Arqiva

Arqiva is a communications infrastructure and media services company, operating at the heart of the broadcast and wireless communications industry across the UK. It is at the forefront of network solutions and services in an increasingly digital world. Arqiva is the only large-scale provider of smart water infrastructure across the UK. It has contracts with some of the UK's largest water companies, including Anglian Water, Thames Water and Yorkshire Water.

Arqiva builds and monitors the digital infrastructure which facilitates the operation of smart water networks, through its radio network. In addition, Arqiva has a growing portfolio of complementary services designed to support both water companies and consumers to manage water use and minimise leakage and also address issues across the network from clean water generation through distribution to waste water and sewage.

Arqiva's radio network is private and operates at low frequency, meaning it can penetrate through walls in ways that mobile networks cannot. The benefits of smart meters rely on the ability to connect with them and receive data reliably over time. This is often a challenge as water meters are often located in places that some communications technologies find hard to reach (such as underground). Arqiva's private, low-frequency radio network guarantees reliable coverage to meters in hard-to-reach locations and avoids the susceptibility and interference of sharing spectrum with other users and applications. As a Critical National Infrastructure provider, our broad system of connectivity solutions and managed services provides a base to serve the growing needs of the water sector over time. We are actively investing to enable us to support the sector and look forward to playing our part in addressing the priorities identified for Ofwat in this consultation.

Arqiva is owned by a consortium of infrastructure investors and is headquartered in Hampshire, with a network of sites across all nations of the UK.