

# Ofwat's emerging strategy: Driving transformational innovation in the sector

Consultation response from The UK Water Partnership



THE UK WATER PARTNERSHIP

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# Foreword

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The UK water sector is facing ever increasing challenges from climate change, population growth, tightening environmental standards and continuously rising customer expectations.

Across the country, there is a growing momentum to meet these demands through innovation with Ofwat challenging water companies to be ambitious in how they deliver more of what matters for customers.

The UK Water Partnership (UKWP) is a public-private that was established in 2015 to provide a strategic vision for the development and growth of the UK water sector.

The partnership brings together a diverse water sector and related organisations in a single coherent alliance to support research excellence, promote innovation and drive growth in the UK water economy.

The following document contains UKWP's response to 'Ofwat's emerging strategy: *Driving transformational innovation in the sector*' document, published on 12 July 2019.



The Rt Hon Richard Benyon MP

Chairman, The UK Water Partnership

# Barriers to innovation

## QUESTION 1

What are the main barriers to innovation in the sector and why?

### ASSETS & INFRASTRUCTURE

- There are a lack of safe spaces for testing different technologies in operational environments. New technologies therefore undergo long trial periods to prove performance before deployment.
- Regulator sanctioned safe spaces or a single innovation hub to trial innovative technologies would remove this barrier, in some instances by allowing technologies to fail quickly and safely.
- Data gathering by water utilities is typically slow, partial, labour intensive, and reactive to events. With most assets being located underground, utilities typically have a limited understanding of their condition or performance. This in turn diminishes the utility's ability to innovate by responding to new challenges through past experiences.

### REGULATION

- Funding – The energy sector has had a dedicated innovation fund for a decade, while the water sector has not. The programme can encourage competition or collaboration depending on how it is structured.
- Regulatory cycles – The innovation process from incubation through to implementation can be lengthy and challenging. The ODI regime struggles to deal with the combination of any 'payback' (be that cost saving and/or performance gain) being long-term along with not all innovation effort resulting in an output/outcome.
- Universal compliance – Recognising the public health nature of what the sector delivers for society, it would be helpful to provide some regulatory 'sandpits' in which innovations can be tried out. The double jeopardy of legal action from quality regulators if compliance is not achieved everywhere, all the time, and the financial disincentives of underperformance under the ODI regime, reinforce company decision makers' risk averse tendencies.

### BUSINESS & OPERATIONS

- The water sector is characterised by its risk aversity and conservatism. Water provision is directly affected by public health and environmental concerns and is subject to greater regulatory scrutiny than other utilities.
- Separate economic, water quality, environmental and flood regulators have created a fragmented framework that limits capacity to compete overseas. In particular, lack of regulatory incentives for innovation combined with utilities' inherent conservatism to inhibit utility investment and product development. This contrasts starkly with the regulatory framework for telecommunications, which has explicitly supported innovation and has helped UK mobile services to secure

extensive export success. (The proposed approach outlined in Section 5 goes in some way to address this issue.)

- There is a general perception that comparative competition on innovation is a barrier to shared learning and best practice. This results in repeated trials at significant expense and delays.
- A technology fixation – Perhaps this is inevitable due to the science and engineering foundations of the sector, and reinforced in the past by having to be able to point to acquired, compliant assets and their outputs. However, there's an emerging recognition of the value of social and natural interventions in achieving outcomes, and hopefully this will be facilitated further in Ofwat's incentives.

### SUPPLY CHAIN & PROCUREMENT

- Procurement – The procurement rules in place do not differentiate between innovative technologies from newly formed SMEs and from more established businesses. The delivery partner is usually left owning the risk (time delays and cost increase) of implementing innovative technologies. This is not suitable for SMEs. Implementing risk sharing (or even risk owning) arrangements would be helpful, as would less onerous Intellectual Property clauses.
- Delivery cycles – The delivery partner contract is usually for the AMP with options for extension. This means the delivery partner is only interested in implementing innovation that is ready for roll-out. They are not encouraged to consider innovation development that might take more than an AMP cycle to mature. The delivery partner contract rarely includes gain/pain share incentives for operational innovation. The delivery partner is therefore not incentivised to develop innovation that could impact on the asset for its entire operational life, unless there is a respective capital cost saving.
- Academia is an important part of the 'supply chain'. Although academic institutions and water companies have increasingly developed links, there is still a need to bridge the gap between university research and the implementation of innovations in practice. The most successful university innovation projects are partnerships between the water companies and universities. Alternatives like accelerator programmes and incubators could also improve the status quo.

# Financial support for innovation

## QUESTION 2

Do you think that the financial support cited in section three is required to stimulate innovation in the sector? If so, what do you believe is the appropriate amount of funding and why?

Investment in innovation is modest in the UK and water is not seen as an attractive proposition for investors in innovation. Water utilities themselves spend comparatively little on R&D, which is largely due to the absence of regulatory incentives to invest where there is no short-term prospect of attractive returns. At around 0.18% of revenues, this also compares unfavourably with the overall figure of 0.4% for French companies Veolia Environnement and Suez Environnement, for example, as well as with the 2% figure widely regarded as the benchmark to achieve.

Innovate UK's 2019 Delivery Plan states that the government's Industrial Strategy sets a 2027 target of 2.4% of GDP being invested in research and development. The UK currently invests around 1.7% of GDP, lagging behind the EU average of just over 2%. To bring the sector in line, a value of 2% of turnover would seem a practical level. Initially, the sector could target an average of 0.5% turnover equating to approximately £50m/yr or £250m over the AMP. This balance will increase the current levels of investment in R&D whilst maintaining levels of affordability for customers.

Some of our members feel that the proposed fund of £200m is low given the size of the sector and that it may be insufficient to achieve Ofwat's transformational ambitions. For comparative purposes, Imagine H2O, a non-profit organisation focused on developing and deploying water technologies across the world, has a fund of \$450m. In the UK, the Industrial Strategy Challenge Fund is delivering over £70 million for each challenge. If each of UKWIR's Big Questions were considered an ISCF challenge, this would equate to £840m.

Ofwat could explore various mechanisms to increase the value of the fund, including:

1. a progressive charge instead of the proposed flat charge; or
2. leveraging the fund by inviting further private equity investment.

The fund should be considered as an investment in UK Plc, as it could support UK SMEs to better establish themselves in a competitive global market and lead to the creation of jobs in the UK water sector. The likely returns are likely to be higher once the global revenue potential is taken into consideration.

Hydro Nation Water Innovation Service is a good example of how government funding is helping to support businesses in Scotland. A similar service operated by or aligned with the innovation fund would de-risk investments in innovative solutions.

Imagine H2O, Isle Water TAG, and Venturi Innovation Service are examples of innovation initiatives which use an accelerator model, closed innovation model, and open innovation model respectively. Greater collaboration with such initiatives could help to de-risk investment by the Innovation Fund. It would also reduce the risk for water utilities undertaking trials.

# Financial support for innovation

## QUESTION 3

Do you agree that our proposed draft principles for additional financial support will effectively safeguard the interests of customers?

The UK Water Partnership is generally supportive of the draft principles presented in section three.

We recognise the need for better collaboration between organisations in the sector and welcome discussions on how the partnership can help to facilitate collaboration between public and private sector bodies.

The draft principles do not mention a regulatory sandbox (though it's mentioned in Section 5). It should be recognised that not all projects will deliver successful outcomes. Water companies need to be able to “fail quickly – fail safely” when trialling innovation.

There is a view from our membership that further detail on the draft principles is necessary before it would be possible to assess whether they can effectively safeguard customers. We would be happy to assist Ofwat in developing further detail around the principles. We would also be happy to engage further with Ofwat on developing the framework for evaluating collaboration.

Limiting the innovation fund to the next AMP time period to 2020-2025 is not consistent with creating a long-term sustainable funding pathway for innovation and means that innovation projects which span multiple AMPs may not be funded.

# Financial support for innovation

## QUESTION 4

What are your views on the collectively funded innovation competition model which we describe in section three? What other key considerations not highlighted should we take into account in designing / implementing the competition?

We support the concept of a collectively funded innovation competition as it has operated successfully in the energy sector for over 10 years. However care will need to be given to avoid silos and deliver the transformational change desired by Ofwat.

To promote transformational change, we are supportive of the competition being open to all companies, and not just the water utilities. Water accelerators such as Imagine H2O and WaterStart are good models of open innovation that develop solutions which deliver transformational change. We also note the important role of UKWIR and its ability to support the delivery of this initiative, such as through governance of the innovation fund.

The UK Water Accelerator has been one of the partnership's key areas of focus in recent years and we would be keen to collaborate with Ofwat to design and deliver an accelerator programme and help to establish an independent steering group that can provide oversight with or on behalf of Ofwat.

The funding provided to the successful applicants (i.e. those by non-water companies) can be considered as equity investment, with all the water companies having a percentage stake in the business commensurate with their portion of funding. This would address the issue of shared

Intellectual Property. An alternate method may be providing the funding as innovation loans, which may be more appropriate for medium to large businesses, or the non-regulated arms of water companies. The interest payments can be put back into the fund for future investment.

There are also other mechanisms where leveraging private equity investment into the fund could be used to invest in SME solutions and the model proposed by Ofwat can apply to applications put forward by the regulated arm of water utilities.

Based on experience elsewhere, the timeline for funding has been identified as important to balance pressure to deliver and the flexibility needed in complex projects. A number of models exist that can be tested for suitability to UK specific needs. The UK Water Partnership would be happy to support further discussions on this topic.

# Financial support for innovation

## QUESTION 5

What are your views on the end-of period innovation roll-out reward we describe in section three? What other key considerations not highlighted (e.g. whether it should be collectively funded or individually funded) should we take into account in designing / implementing the reward?

The UK Water Partnership thinks that water companies should be commended for their innovation, but recognises that the roll-out reward could potentially result in the deployment of sub-optimal solutions. This could negatively affect the customers whilst rewarding shareholders.

Consideration has to be given to the fact that the innovation challenges differ for different water companies, and some of the solutions will take longer to deploy. Without a level playing field it can be more challenging to regulate impartially.

The end-of-period reward payment may not be appropriate if it competes for funds with the competition model.

Adopting a collaborative risk-sharing approach (both pain and gain) between all partners is likely to deliver better outcomes than just rewarding the water utilities for the roll-out of innovation.

Experience from outside the UK has shown that adopting a portfolio management view where performance is evaluated across all their funded activities rather than on each the success of individual projects has better outcomes.



# Financial support for innovation

## QUESTION 6

What other potential alternative mechanisms for funding / rewarding innovation not discussed do you think we should be considering? Which financial support mechanism or combination of mechanisms should we introduce and why? What would be an appropriate split of available funding/reward?

The diverse membership of the UK Water Partnership has differing views on this issue.

As the umbrella organisation representing the interests of the wider UK Water Sector, we would welcome the opportunity to engage and facilitate further discussions with Ofwat to develop an approach that is supported by the wider sector.

We note that an equity stake model (outlined in Question 4) could deliver indirect financial reward to companies supporting and investing in innovation through the alternative mechanism of royalties.

# Other potential industry activities

## QUESTION 7

Do you think the potential industry activities discussed in section four could help drive innovation? Are there other activities not identified which you think the industry should be considering?

The UK Water Partnership is supportive of a sector-wide joint innovation strategy.

UKWIR's Big Questions can be considered as an attempt by the UK water sector to develop an overarching sector-wide innovation strategy. However, we note that it is not as fully formed as the innovation strategies developed by each of the water utilities.

It is our view that we are ideally positioned to support Ofwat in facilitating the development of a cohesive, jointly supported, but independent innovation strategy for the benefit of the whole UK water sector. We have already established multiple collaborative workstreams which have representatives from the wider water sector in UK.

We are also supportive of the 'Water Centre of Excellence' concept presented in section four.

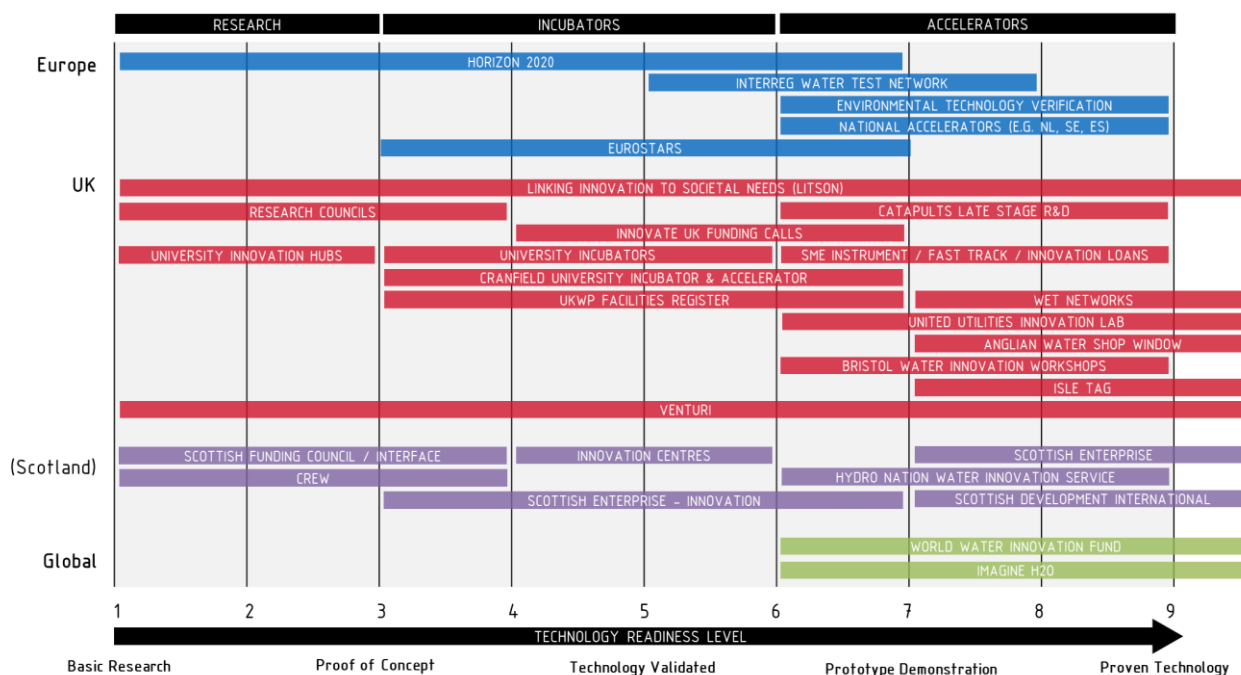
The partnership notes there are already a number of centres of excellence focussed on water in UK. This includes the Centres for Doctoral Training (e.g. Twenty65, Stream, and Water-WISER), other research and test centres (WRC, John Hutton Institute, Cranfield University), and individual water company test facilities.

We support a hub and spoke model based around the above to coordinate, collaborate and share facilities and learning whilst still maintaining a market for research services.

This would allow quicker start up of the initiative, leverage financial and intellectual investment already in place, and would better align research activities with water sector needs and ensure a more effective delivery of the push and pull model that has been effective in the energy sector.

There are various sources of funding and support available for water innovation activity in the UK, some of which are highlighted in the UK Water Innovation Landscape diagram below.

Further coordination between Ofwat, BEIS and UKRI on competition and challenge design could be better aligned with initiatives and allow leverage of funds from the rest of this landscape.



UK Water Innovation Landscape (Source: Arup)

# Regulation as an enabler for innovation

## QUESTION 8

Do you think the proposals in section five will help drive innovation? Are there other activities not identified which you think Ofwat should be considering?

The UK Water Partnership is supportive of the increased coordination across regulators in the sector as it will provide greater clarity to our members. However, there are concerns that Ofwat's provision of 'informal advice' may be misinterpreted as regulatory acceptance. We would recommend further work on the nature of advice that should be given to avoid such issues.

We are also supportive of the 'regulatory sandbox' model to enable "fail fast - fail safe" approach to test, try and deploy innovative solutions.

We would also like to suggest greater coordination of RAPID members with other regulators, especially in areas of cross-sector innovation. Cross-sector coordination through UKRN would also be beneficial to share lessons learned from innovation.

One of the areas not discussed is existing models of supporting innovation in UK. The Hydro Nation Water Innovation Service is one such example that can serve as a model for developing a similar service across England and Wales.

Our members feel it will be important to stakeholders that Ofwat adds innovation to its monitoring and reporting activities. This will help to track the success of the initiative and also help to improve awareness of existing innovation activity being carried out in the UK.

