

Ofwat Consultation on Driving Transformational Innovation: Northumbrian Water Response

Introduction

We share Ofwat's ambition to drive transformational innovation in the water sector and welcome the opportunity to engage with this initiative.

It is clear that our customers expect us to be continually improving and as a result 'leading in innovation' formed one of six key themes in our PR19 business plan. In our business plan customer acceptability research our customers agreed that innovation was an important aim to improve efficiency, performance and expertise and that it demonstrated how Northumbrian Water is willing to exceed customer expectations.

Indeed, we have already demonstrated our commitment to innovation through the week-long Innovation Festivals we have staged in each of the past three years. These events deploy design sprint and data hack techniques to tackle a range of challenges affecting the sector, drawing in expertise from global businesses, local SMEs, academia, interest groups and customers. The events have been praised by visitors including from Government and regulators, and have yielded innovations now being implemented, including the 'Barnacle' sensor device, underground mapping and digital twins of our networks and assets.

We agree with the challenges identified in the consultation, and strongly support Ofwat's proposals to make additional funding available to support innovation activities.

We are pleased to see innovation defined in the widest terms, particularly to include people (which we take to include personal and organisational capacity) and commercial arrangements (including business model innovation). We support the UKRN definition of innovation as 'creating improved outcomes', recognising that this often demands significant effort to enable, or mitigate the risk of, the required change.

We agree that collective working between companies, and also in collaboration with customers, suppliers and regulators, can serve to share innovation risk. Of course, successful collaboration requires the benefits arising from innovation to be equitable shared as well and, most importantly, the overall balance between risk and reward has to be acceptable to all parties. We agree that all parties could do more to develop their culture for innovation and to take advantage of opportunities for collaboration.

Northumbrian Water has taken its commitment to collaborative innovation beyond the Innovation Festivals outlined above. This includes our partnership in the Water Hub at Durham University, through which we also work with Durham County Council and the Environment Agency to bring together facilitated research collaborations, matching business research and development needs with academics, facilities and business support. In September 2019, we also jointly staged with Anglian Water the first Innovate East event, a collaborate three-day innovation event with joint teams from the two companies engaging outside experts to work with us to address issues around leakage, social purpose, natural capital and digital twins. We have already begun to invest a joint £100,000 seed fund created by the two companies to develop the most promising innovations to emerge from the event.

Question 1. What are the main barriers to innovation in the sector and why?

The consultation document references the report from the European Innovation Partnership on Water on *Barriers and bottlenecks for innovation in the water sector*¹, which in addition to the sector's 'understandable' high risk aversion for innovative technologies, highlights barriers such as:

- Lack of funds for SMEs, particularly for further development, demonstration and commercialisation of innovative ideas.
- Capital intensity of the sector, linked to risk aversion, the insufficiency of financial flows into the sector, and low profitability leading to low payback on investments.
- Lack of demonstration sites (linked to risk aversion and the capital intensity of demonstrating the types of innovation typical of the water sector), which limits exposure of novel technologies to both domestic and international markets.
- Inconsistent and fragmented policy and regulation, which presents a barrier to wider commercialisation of technology.
- Conservative procurement, either giving preference to low/lowest cost options without accounting for lifecycle costs, or preferring tried and tested solutions (maybe as an unintended consequence of prequalification or procurement frameworks and timescales).

We recognise and agree with these barriers and would highlight others:

- The capacity of organisations and individuals to assess and adapt to new opportunities (knowledge, practices, technology, partnerships). Change is uncomfortable and takes effort, over and above business as usual and even if it improves productivity in the longer-term organisations need additional resources to make it happen. Collaborative innovation will reduce the impact on individual partners but each will still have to go through the change process.
- Lack of sector-wide shared vision and response to challenges, meaning that individual organisations and small groups are working in silos and missing out on opportunities to build on each other's knowledge and investment, partly caused by commercial or reputational considerations, but also because it is difficult to keep track of the huge amount of innovation already going on across the sector.
- Misaligned expectations between water companies, supply chain and other stakeholders when it comes to innovation. Often it is not clear how the risks and rewards of innovation should be shared, exacerbated by the lack of clarity around the potential returns (linking to the points above).

¹ https://www.eip-water.eu/sites/default/files/DiagnosisBarriersBottlenecks-Final_0.pdf

Q2. 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?

We strongly support Ofwat's proposals to make up to £200m of funding available to support innovation.

In our view the financial support is specifically required to address the key barriers: to de-risk novel technology (particularly at demonstrator level), to increase financial incentive for innovation, to direct funding into SME technology development and commercialisation, and to sustainably increase the capacity across the sector for embedding innovation

The proposed level of funding is a good start but more will be required if the UK water sector is to play a meaningful role in meeting the Government's target of 2.4% of GDP invested in UK R&D by 2027.

Q3. Do you agree that our proposed draft principles for additional financial support will effectively safeguard the interests of customers?

We recognise that the draft principles are framed in such a way as to safeguard customers from funding project that would have been funded anyway, or that might not be considered to be real innovation, or from rewarding companies that chose not to roll-out / scale-up viable innovative solutions. We consider these principles to be appropriate.

We have some concern that potential claw-back, unless implemented under very clear criteria and in a way that did not penalise projects that for legitimate reasons did not deliver successful outcomes, would have a constraining effect on the level of innovation risk that companies would be willing to engage in (whether shared or not). This would not in fact safeguard the interests of customers as the potentially greater benefits of more radical innovation would be lost.

The proposal to include a claw-back mechanism is understandable but we would only envisage it being used in cases where the funding has been improperly used, or where there have been significant failures in project management or delivery or when outputs are not shared in accordance with the terms of the competition funding.

Q4. 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 broadly support the proposal of a customer-funded programme ring-fenced for innovation. Innovation is inherently risky so it is right to share this risk between the likely beneficiaries (i.e. customers and companies) and to put in place the appropriate governance to safeguard the interests of both customers, regulated companies and other interested parties (such as suppliers).

The proposed collective funding would provide a sufficiently large pot to enable transformational projects to be delivered that otherwise may be unaffordable by individual companies. The collective-funding approach does mean that customers in one region could find themselves funding innovation taking place in another region, with little or no involvement from their own supplier. The requirement for outputs to be shared would mitigate this effect to some extent but it is unrealistic to think that all innovation outputs will be equally relevant to all companies or equally applicable across different geographies or

demographics and a funding criterion of wide / universal applicability would prevent companies proposing innovation projects that may be a priority for their customers specifically.

The competition nature of the funding will undoubtedly focus the minds of leaders and senior managers to develop high quality proposals, although if the likelihood of being funded is found to be low then companies' willingness to engage in the competition will diminish. There is an inherent inequity across the regulated companies in that some have greater capacity than others for developing proposals and delivering projects, both in terms of numbers of people, experience of funding competitions and their ability to co-fund from existing research and innovation budgets. It is likely that these companies are better placed from the outset to develop more ambitious and higher-quality proposals and the design of the proposed funding should address this imbalance.

We welcome the proposal that companies would be to be involved in shaping the proposed underpinning framework and defining and identifying / establishing the requisite independent governing / coordinating entity; we believe the collective experience of the regulated water companies can be usefully drawn on to design an effective and sustainable approach.

We believe the proposed timescale for the development and establishment of the framework should be brought forward, with the aim of launching the first competition in the second half of the first year of the regulatory period and launching the first round of funded projects in April 2021. We believe this can be achieved using a collaborative design-sprint approach to develop the framework and address the four key areas described in the consultation document. We would be pleased to provide an opportunity to do this at our July 2020 Innovation Festival.

The expectation of collaborative working with other regulated water companies, supply chain, and other stakeholders (among which we include our customers) to develop proposals for innovative projects fits well with our track record of co-creation, partnership-based innovation and collaborative R&D. We believe that collaboration between companies and/or with supply chain should be a qualifying criterion for funding.

We agree that Ofwat should maintain a strategic oversight over processes and decisions, although there is some ambiguity in the consultation around Ofwat's role and the role of companies and the independent entity in developing the competition process.

We are aware that UKWIR are submitting a consultation response outlining the role that they could potentially play in this area. UKWIR have an unrivalled reputation and track record of successfully identifying and coordinating independent collaborative on research of strategic significance across the sector and in partnership with external stakeholders on a national and international stage. They have identified how they could work with multiple world class partners to facilitate excellent innovation and to ensure that the governance that such a programme would require was matched with an agility of approach necessary in delivering high value as early as possible. We are supportive of UKWIR's proposal and believe they are ideally positioned to support Ofwat in this area.

Q5. 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?

We recognise that scaling innovation is difficult, the risks are different from the development / PoC stage and that recognising successful roll-out is a way of rewarding those companies willing to commit the effort and investment. There is a risk of gaming this though, in that it preferences the safer projects and not the transformational ones.

We agree that business-as-usual roll-out should not be rewarded and suggest also that the reward should not be used as an incentive to scale up innovation for which there was no business case. We see a case for rewarding roll-out that was achieved in the face of difficulties (perhaps in transferring technology from another sector), or for which significant industry-wide learning points can be captured and shared.

We suggest that any ex post reward is not limited to the end of the period as there should be an opportunity to recognise longer-term innovation, or to reward rapid roll-out within period. We also suggest that ex post awards recognise significant case where significant progress has been made and benefits delivered to customers achieved through innovation, regardless of the company's position with respect to ODI performance. It is important that, where possible, Regulators set performance metrics based on outcomes rather than outputs or inputs. This will allow companies the freedom to fully innovate in service delivery, whilst meeting customer expectations.

Q6. 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 aim of the competition should be to de-risk innovation by enabling / releasing investment at the appropriate time. We suggest that the Innovate UK competition model is worth of consideration. These competitions often have a feasibility stage that funds several small projects (c. £50k-£100k), followed by a full project stage, that will fund one or two of the best prospects emerging from the feasibility stage. This provides a low barrier to entry for the programme and mitigates the risk of funding large ultimately unsuccessful projects, or ones that are subsequently found to not be viable for large scale roll-out.

Q7. 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?

Companies have rightly been encouraged to develop their business plans with innovation clearly front and centre. These plans set out customers' expectations and our plans for meeting them, along with the challenges and uncertainties likely to be faced. UKWIR has set out the priority strategic research questions on behalf of the industry, which aim to provide a routemap to achieving some of the more far-reaching of the industry's shared ambitions. The LiTSoN project aimed to produce a mechanism for documenting current and past industry innovation and research projects and activities, under the UKWIR headings. We consider that the production of a separate industry strategy potentially duplicates much of this effort and could serve to distance innovation from business as usual, rather than embed it.

The industry could certainly produce a more accessible digest of its innovation challenges for use in engaging the supply chain and other stakeholders involved in developing and implementing innovative solutions, along with more transparent plans of projects and activities to be undertaken. We would support the creation of a central independent body to coordinate this activity, and to strengthen and grow the sector's innovation ecosystem with the ability to take a distributed and agile approach that can respond to emerging challenges and adapt to the evolving needs of the sector. Active and engaged SMEs are key to an effective innovation ecosystem so we would encourage funding to be directed in this area, and welcome the suggestion that this would be possible under the proposed competition.

We are encouraged by the reference to better use of information and open data and would support mechanisms for enabling digital and information-led innovation, including data sharing through data trusts and clubs that would enable the value of data to be realised while affording the relevant information security.

Q8. 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?

Further to Q7, we believe that a data hub approach, similar to that recently established by Ofgem is worthy of consideration. In this light particularly we would support greater coordination between regulators in the sector, and the wider utility sector. We look forward to Ofwat motivating the other regulators to engage and think about how regulation across the sector can respond innovatively.