

Ofwat's emerging strategy: Driving transformational innovation in the sector Southern Water's Response

September 2019



from
**Southern
Water** 

Summary

We welcome the opportunity to respond to Ofwat's Innovation Consultation, aimed at overcoming industry barriers to innovation that we both recognise and are passionate about overcoming together with regulators, regional partners and businesses. With recent investment in Bluewave (Southern Water's combined Lab/R&D team) and Operational Excellence, Southern Water is focused on transforming its business and being a part of industry-wide innovation to benefit customers nation-wide.

Compared with other industries, innovation is only an emerging discipline in water, which gives our industry the advantage of lessons learnt regarding what has and hasn't been effective in stimulating new solutions and/or ways of working elsewhere. This consultation has the potential to stimulate some exciting new developments to better co-ordinate industry efforts, including shared definitions of what we mean by 'innovation' and a shared strategy to face longer-term challenges.

Centralised, at scale investment

We believe that the bulk of the £200million investment should be focussed on centralised, at-scale investment, with a smaller proportion (£20-50million) reserved for small scale collaborations, making sure that each investment is:

- Measurable – ensuring objective assessment of value/benefits in order to 'fail fast'
- Impactful – focussed on the future needs of customers and stakeholders, seeking to overcome macro-trends that are set to have a negative impact
- Collaborative – promoting a cross-sectoral, 'systems of systems' approach to resilience, reflecting the increasing interdependency of the UK's transport, energy, digital and water infrastructure
- Reinforcing - investing in projects managed by other bodies which enhance the water cycle, carbon footprints etc.

Futureproofing & complementary

As 'in-house' innovation and R&D capabilities we maintain a short-to-mid-term horizon focus of 3-7yrs, primarily seeking to embed a growth mindset, de-risk future investments and establish new Partnerships across the business. We believe that this is the most valuable proposition for in-house innovation, meaning that this fund must complement by:

- Focussing on oncoming 'macro-problems' such as the impacts of climate change, population growth, resource availability etc.
- Co-ordinating and leveraging expertise - such as the Graphene Engineering Innovation Centre - in the interest of long-term resilience for future customers
- Dedicated, centralised funding over a minimum of two AMP-cycles to allow for long-term benefits realisation and prevent short-term needs for payback

Collaborative foundation setting

We believe there needs to be a few collective definitions to act as the foundations for such a fund, including:

- Shared definitions of innovation and its varying types
- A Vision for what industry-coordinated, centrally funded innovation could do for the water industry

- Agreed focus of the specific barriers this fund is looking to overcome, providing a high-level Purpose for the fund (is it about ‘future-proofing’ in the interest of water resilience for our customers, or increasing the adoption of new process/ technologies to improve company performance?)
- Defined 5-10-year strategy, with specific actions outlined for year 1 ‘Define’ phase ahead of rest-of-AMP activity
- Metrics to measure the impact of the fund, with permission to iterate and adjust mechanics if elements could be improved over time

Fast-following and leap-frogging

With many examples of similar initiatives and funds in other sectors we believe the water industry is at an advantage with the ability to imitate what’s worked elsewhere:

- The Civil Aviation Authority’s regulatory sandbox
- Ofgem’s strategic focus on de-carbonisation
- UKWIRs strategic Big Questions programme

...to name a few.

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

The initial question we ask is how can we define innovation? Southern Water's definition is to make positive change within the organisation from incremental through to transformational improvements in our how we operate our business.

To assess where we see barriers to driving innovation, first we look at the need and the desire to innovate. We see that there is value in finding solutions to large scale, long term problems faced by Southern Water, the industry and potentially wider sector areas looking at ways to drive carbon neutrality and support climate change goals. To enable us to work on these challenges we feel there is a need for a more efficient route to effective solutions and opportunities for underperforming companies to learn from high performing companies, collaboratively driving change.

The Twenty65 workshop on 5th September 2019 addressed the question of barriers to innovation with response from many different parties. We have summarised the main barriers through the human centred design lenses of desirability, viability, feasibility which we adopt within our innovation methodologies in our Bluewave innovation lab in Southern Water.

Desirability: Barriers to understanding peoples' (customer, industry, environment) desire in relation to water innovation

- Vision and goals – There is a lack of shared vision and goals for innovation within the water industry. Many challenges are shared, and the pain of the problems felt across the industry and with a lack of clarity we have experienced misaligned behaviours and duplication
- Customer perception – The perception of the water industry and therefore the perceived value of water is generally low when compared to other utilities within the UK, having a downstream impact on the permission to fund innovation

Viability: Barriers to establishing viable business cases for investment in innovation

- Regulators – Regulatory drivers within the industry are frequently challenging with opposing priorities. As costs are driven down through the economic and customer pressures, quality, growth and environmental performance measures demand a higher level of output
- Timeframe for investment – Restrictions in investment are present due to the 5-year investment period driven by the AMP and price review cycle. This leads to a lack of ability to commit to longer term spending and often longer-term outcomes
- Trust in mechanisms for measuring outcomes – When reviewing benefits from investment in innovation, the approach differs across the industry and a lack of transparency leads to lack of trust in others' results, this is often a barrier when making decisions on accepting new potential technologies or approaches
- Measurement of outcomes – Financial restrictions within the organisation and more widely across the industry, drives the focus of innovation investment purely on ROI outputs, whereby a wider view of other capital benefits would likely drive different, more sustainable decisions and outcomes
- Transparency of industry initiatives (and challenges) – Lack of transparency of others' focus and innovation investment plans creates an uncertainty in investing in key initiatives, with the view to wait and learn from others

Feasibility – Barriers to undertaking innovation and successful implementation

- Timescale of procurement commitments – Adoption of technologies and approaches is somewhat restricted by the 5-year AMP cycle driving procurement commitments. HMRC's October 2018¹ consultation addressed the question of barriers present through the AMP cycle. One response from the Future Water Association (2019)² described there to be limiting factors presented through procurement cycles and mechanisms preventing alternative suppliers, hence this posing a restriction on allowing either new entrants to the market, or alternative (better) offerings to take the place of these contracts.
- Environment and failure – An innovation culture should give permission to challenge assumptions; create openness to new ideas (internal and external); and give freedom to experiment, fail, and learn. The topic of communicating failure is well discussed, however there does not yet appear to be an adoption of this communication throughout the industry (and sector)
- Process for innovation – A lack of process for idea generation and incubation of concepts, in Gartner's view, is a barrier to developing innovation culture. We have been developing such an approach within our Bluewave innovation lab in Southern Water; a barrier for innovation across the industry is potentially present due to this not being clear (and available) from business to business and there not being an industry wide approach to allow new entrants/suppliers to have a single point of entry and assessment
- Trust & sharing of insight and information (data) – To drive wider, faster innovation adoption the barrier of data sharing and trust in others insight needs to be worked on. This barrier is evident through the lack of data sharing to achieve innovation outcomes, partly through the perceived risk of making data available and partly through the complexity of the challenge in how data could be used and for what purpose

When addressing the proposed mechanisms for helping foster innovation, we believe that it is important to focus on specific barriers and assess how the mechanisms look to address them. This extends to understanding the consequences that each mechanism is likely to create and whether these are the desired outcomes of the approaches, and whether they will result in moving the industry forward into a positive, sustainable future.

¹ HMRC Consultation – Encouraging Innovation in Regulated Industries
<https://www.gov.uk/government/consultations/encouraging-innovation-in-regulated-utilities>

² FWA response – see Appendix. 1

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?

AND

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

As in many industries, internal budget allocated to innovation (and R&D) is at risk when there are immediate, tactical funding needs – the water industry is no different. For this reason, we believe a centralised, ring-fenced budget will help sustain innovation activity, with the potential to stimulate greater activity (scale and/or impact) if channelled in the right way.

We believe that one of the greatest benefits is the ability to explore long-term problems and/or opportunities. We've highlighted the short-term focus stimulated by the 5-year planning cycles, which this fund has the potential to overcome providing success metrics or return on investment (ROI) is calculated over a minimum 10-15-year period (to be defined). In order to sustain this long-term view, we believe that the commitment to a centralised innovation spend needs to span at least two AMP cycles so that its success can be measured against long-term objectives.

It's hard to measure the relative merits of £200million versus a greater or lesser amount as it depends on the intent and its distribution – all details we realise are to be thought through at a later stage. With this in mind, we believe that it is crucial to collectively define the purpose of this Innovation Fund – what specific barriers are we trying to overcome? We believe a tight scope and specific remit will ensure greater success; is the focus industry adoption of new technologies? Or are we focussed on more radical developments that seek to 'future-proof' water as a resource for future generations? Once a specific purpose is defined, we believe it will be easier for form to follow the intended function.

In order to ensure 'value for money' for all customers paying into this fund, it seems right to ensure (to the best of our ability) that every water company feels the benefits of this fund, which will be dictated by the mechanics. One potential barrier for companies with less to spend on innovation is the need for part-funding initiatives – this risks restricting time horizons/project scope or companies not being able to participate at all. To ensure shared benefits for all customers there has to be a focus on extending collaboration across the industry and with Partners (regional, academic, business etc.) to stimulate greater efficiencies and productivity beyond the sector, not just within it.

The Principles of the fund will need to be born out of the purpose of the Innovation Fund as mentioned earlier in our response – for example, transformational innovation and roll-out at scale may be contradictory depending on whether we're concerned with affecting company performance or the industry at large. It stands to reason that some Principles will be relevant whatever the purpose and/or horizon focus, such as a need for measurement, promotion of progress as well as 'failures', and encouraging projects across people, process and technology.

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?

The greatest benefit of a competition mechanic is the potential to enable projects focussed on medium-long term challenges where companies might usually be more tactical and short-term; beyond this benefit we believe the positives are outweighed by challenges if the fund is to be used in this way.

Access

Assuming that there will need to be industry-wide benefit, the 'who' will be really important when it comes to the ability to pitch for funding. It is likely that both defining the details of the mechanic and participating in the pitching process will favour those companies with greater resource bandwidth, which means that smaller companies don't feel the same benefit – how might we mitigate this bias up front?

There is an opportunity to open the bidding process up to industry Partners and Intermediaries in the first instance, which may be a positive way to accelerate technology development but risks lack of adoption if not developed closely with the water companies this development seeks to benefit. How might we (water companies) inform 3rd party trials as 'customers', encouraging a needs-based approach? Taking lessons from Ofgem's Network Innovation Allowance, an additional challenge of inviting a broad audience to bid for funding (including SMEs, start-ups etc.) may be managing the vast number of applications, creating costly overheads that may divert some of the £200million fund.

Bid evaluation

What seems essential is an objective panel of judges assessing the comparative merits of each bid – there cannot be bias from companies or regulation, but it might make sense for industry priorities to be known and provide a filter. We would urge for the primary concern to be the interest of the customer, allowing for innovation across business models and future revenue streams, as well as operations, product and service.

Impact on internal Innovation roles/functions

One of our concerns is the impact a bidding mechanic would have on internal innovation roles and functions, with the risk of focus switching from imbedding a growth mindset, new ways of working

and testing new technologies to a function preoccupied with bid writing. Though there is potential for funding should bids be successful (clearly a positive outcome!), we believe Bluewave (Southern Water's innovation arm) together with other change functions such as Operational Excellence and Optimisation should focus on internal impact – not naval-gazing but seeking to drive positive outcomes by getting involved in the work to drive high quality outcomes.

Outcomes

We believe that it's important to support fast failure as part of this process, so 'successful projects' can't be measured by implementation alone – how quickly can you identify and validate the value of a solution? Does that mean that companies would have to return funds when they could pivot and explore a different approach to the same problem? We look forward to considering these details as part of any mechanic. Taking from agile processes, it could also be interesting to consider different formats of 'monitoring' and 'reporting' - perhaps 'walk-throughs' and updates – to reduce time spent on documentation, favouring platforms for informal sharing re. challenges and progress.

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?

If it's decided that the purpose of the Innovation Fund is to reward implementation, adoption and efficacy, then the roll-out reward promises to be effective. We recognise that scale and adoption of new products, processes and technology is a challenge across disparate business silos, and perhaps an additional financial incentive would motivate further progress within water companies. It would be important for companies to baseline current rates of adoption in order to prove progress.

Within the roll-out-reward mechanic it would be even more crucial to define what is meant by 'innovation'. A benefit of roll-out-reward is the opportunity to reward 'relative' innovation – newness for the company resulting in a step-change in performance, service etc. – whereas the competition could be tempted to fund those bids that are more cutting-edge and potentially more challenging to implement at scale.

When considering the barriers to innovation in comparison to other industries, the 'first to market' advantage resulting in a periodic increase in revenue is a clear benefit guiding investment and resource dedicated to innovation. Would the roll-out reward need to be at the end of AMP7, or could this fund attempt to mimic the market when successful implementation and impacts can be demonstrated?

A few challenges and/or questions around this mechanic are:

- Would PR24 funding as a reward provide enough confidence for the initial company investment as it's not guaranteed?

- Would a roll-out reward limit ambition to maintain a short-medium term horizon?
- How might we reward approaches to innovation and not just specific projects? Broad impacts on culture, pace of trial, lessons learnt through failure?

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?

Having explored a few mechanisms in other industries we wanted to highlight some interesting criteria, mechanics and purpose-driven accelerators for consideration:

The Civil Aviation Authority

The Civil Aviation Authority has developed a three-pronged approach to innovation, which includes:

- **An innovation gateway:** the gateway will also allow innovators to submit ideas for the aviation and travel sector and get a quick answer from us as to whether it needs regulatory input or approval
- **A regulatory sandbox:** where users can work with the CAA to test and trial innovative solutions in a safe environment, in particular those solutions that may not fit within the existing scope of regulations, permissions, and exemptions
- **A regulatory lab:** this sets out a roadmap and develops test cases in key areas of interest, initially looking at issues like automation and urban air mobility. Bringing together everyone with an interest in the area such as other regulators, academia and the public, to develop potential regulatory models and avoid duplication between agencies

Ofgem

- A strategic focus around de-carbonisation, encouraging more co-ordinated effort to tackle a specific, industry-wide challenge
- Required diligence around the business case as part of bid process

NHS accelerator

- Clear purpose: to speed up the adoption of innovations within the NHS
 - not for the initial development of innovations, but to provide support and external funding for iterative testing and scaling, acknowledging the structural barriers inherent across the service

- Encourages innovations internally and from the supply chain - both new approaches and new tech
 - examples include partnering specialist police officers with mental health practitioners, and a mobile ECG monitor

Seed Funding Models

As a build on the competition model proposed, we think imitation of a VC funding model could be interesting to explore. We believe this phased funding would enable greater process and progress transparency, encourage companies to test/trial 'lean' in order to iteratively scale at a lower cost, and encourage more frequent evaluation of value.

Centrally funded and independent hub, as discussed at the Twenty65 workshop on 5th September

- A central resource to collate and provide information on who's doing what across innovation in the industry, with a view to connecting and enabling partnerships
- Expertise to provide standards of excellence and advice for all companies
- A central 'funnel' for Universities
- Co-ordinate the many forums/groups that exist in the industry, acting as point of direction for what and who each covers

Graphene Engineering Innovation Centre

Defining its role as a catapult, with the potential to invest in a 5-year sector-wide programme to develop graphene-based solutions within the GEIC, becoming the fast-tracker of prototype product and thinking (kg and m²) which can then go out to the supply chain to develop product.

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?

Sector-wide joint innovation strategy

We believe that this is an essential first step, no matter the mechanic. We know that there is much duplication – often within businesses, not to mention across the sector – and a shared understanding of the focal barriers we are unified to overcome (as part of this fund), our guiding policy for AMP 7, specific themes or topics of focus, and of course outlines of specific activities will enable greater productivity.

Centre of excellence

As listed in the response as part of Q6, The Civil Aviation Authority's regulatory sandbox and lab would be interesting builds on the initial concept of a centre of excellence.

Insights and data 'house'

The ability to share data and insight would be a key enabler for collaboration, not to mention a way to identify shared pain points and trends yet unidentified across the sector. No doubt the

mechanics would be complex but given the right focus and strategy we believe this could be incredibly valuable.

Forecasting future trends

Routinely (annually) working with experts to identify the mega trends which will change our infrastructure as it exists and how we will design it going forward, i.e. to imagine our future world in the next 20, 25, 30 years to inform future investment in innovation, Research & Development.

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?

As with The Civil Aviation Authority example, there may be value in regulatory consultation to understand parameters of a concept and/or solution, but there may be future conflict of interest if an innovation seeks to affect or influence regulation (always evidenced as a benefit to the customer and/or environment). How could Ofwat ensure objectivity and act as a constructive challenger?

One of the most compelling activities promoted as part of this consultation is increased coordination across regulators in the sector – could we stretch this in the future to extend beyond the sector, enabling Partnerships with organisations suffering the same problems? We would fully support increased regulatory coordination, beginning with Defra, EA, DWI involvement as part of this strategy.

Appendix 1

Future Water Association response to HMRC Consultation : Encouraging innovation in regulated industries



Adobe Acrobat
Document