



Innovation Consultation
Ofwat
21 Bloomsbury Street
London
WC1B 3HF

12th September 2019

Innovationconsultation@ofwat.gov.uk

Dear Sir/Madam,

We very much welcome the innovation initiative. Please find below our detailed response to the innovation consultation ahead of the 20th September close date. I understand that you are also planning to hold a follow up workshop and I would welcome the opportunity to attend on behalf of Stantec.

Regards

Dr Paul Rutter
B-Eng, C-Eng, EngD MChemE

Principal Consultant
Business Consultancy
Stantec

Copy Tim Williams - Strategic Growth & Business Development Director – Water

Buckingham Court
Kingsmead Business Park
Frederick Place, London Road
High Wycombe HP11 1JU
Telephone: +44 (0)1494 526240
Facsimile: +44 (0)8452 801810

Registered Office:
Stantec UK Ltd
Buckingham Court
Kingsmead Business Park
Frederick Place, London Road
High Wycombe HP11 1JU
Registered in England No. 1188070

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

There are a number of barriers:

Water companies and the industry contractors prefer in general to be a fast follower – not a leader. This is likely to reflect the difficulty in gaining additional resource, effort, time and cost to undertake the development innovative approaches and technologies; set against the backdrop of companies need to be lean and efficient from an organizational and day-to-day delivery perspective. Furthermore companies are risk adverse to failure; this is contrary to embracing an innovative approach. Commercial and procurement arrangements aren't orientated to support the procurement and contractual incentivization of innovation with the supply chain.

Water companies haven't traditionally been good at telling the supply chain what it is that they need in terms of innovation. They have generally been passive, waiting for organizations to turn up with ideas or solutions to problems that the Water Companies may or may not have. This is changing, most notably with innovation becoming a key pillar of PR19 (as evidenced by increased use of design sprints, hackathons, etc)

A further key barrier is the industry's ability to fully understand the problem and then implement innovative solutions that cross organisational boundaries.

Water utilities are built and run to reliably produce a product through a number of interconnected stages. Such reliability is built on repeatable processes with standard workflows, budgeted investments and standard metrics. These metrics and workflows influence the behaviour of the employees and organizational norms. Over time, this dynamic can produce a procedure-centric siloed organizational culture. These perform the basic functions, but hinder the drive required to become innovative. These silos constrain the utility's ability to understand and exploit opportunities that cross organisational boundaries. For example an efficient investment in one area to benefit another requires considerably more effort to quantify, promote and deliver. Competing tensions and interdependencies across multiple performance outcomes creates complexity in defining business priorities. Advances in data science to describe and model such relationships is likely to be key to managing such complexity.

There are also cultural and behavioural issues that present barriers. The organisational culture needs to be aligned throughout the business to enable innovation. In environments where personal ambition and reward is affected by level of risk and increasingly high levels of regulatory compliance it is sometimes inevitable that the innovation can be constrained.

Ultimately water utility leaders must break down these barriers to deliver the innovation needed to meet the challenges of customer service, efficiency and resilience. They need to create a safe environment for investment, development and adoption of new ideas. A culture that enables and encourages innovation and embraces fast moving change without extreme levels of governance is one that can move quickly and manage innovation effectively.

Q: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?

Yes collective ring-fenced financial support is an appropriate regulator response to the innovation barriers within the regulated water industry. The PR19 draft determination proposes an average 12% reduction in customer bills and thus without some financial stimulus, there may be the risk of water companies reverting to closed behaviours.

A £200m fund represents a £1.50 increase on average bills or <0.4%¹. Higher but broadly comparable relative sums are available from equivalent innovation fund arrangements in the energy sector of £950m². It is not clear if customer support for the proposed investment is evidenced.

A £200m innovation fund value would seem an appropriate although arguably conservative initial innovation fund value provided it has customer support. Auditing of value generated from any fund, within which timescales involved should guide how total funding values evolve.

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

A common fund, which supports cross company collaboration on developing and implementing innovation to realize benefits to customer-focused outcomes in a shared, cost-effective way should support the safeguarding of customer interests. It will be important that the fund is controlled and focused on areas that drive the greatest customer benefit, not just in terms of immediate bill impacts, but also to sustain and improve services and build a resilient water system.

Ultimately the overall the full fund value represents a very small cost impact on customer bills (<0.4%); effective innovation will encounter failure in order to meet the scale of the challenges faced. "The way to succeed is to double your failure rate³" and "... if things are not failing, you are not innovating enough⁴".

Mechanisms to clawback funding on unsuccessful projects would likely limit innovation ambition. We fully support the principle of match funding by the water industry. Such a mechanism will reduce the likelihood of poorly conceived projects for funding.

The consultation identifies the need to ensure projects are not already funded or incentivised through the price review framework whilst aspiring to reward implementation at scale within the period. We feel it is a mistake to apply such a wide-ranging constraint; which could lead to disincentives for the water company to engage in pilots, particularly those at scale which impact operational delivery.

The existing price controls set out overall cost-sharing mechanisms that will safeguard customer interests in any event.

It would however be appropriate to not allow duplication of funding for projects explicit in the final business plan submission. The approach taken at draft determination to not fund performance improvements outside base investment considerably reduces the risk of double-funding.

We would however suggest that funding constraints and clawback be dependent on the extent and quality of the project execution particularly around assessment and disclosure on findings and failings. We very much welcome an "open by default" approach to data and learning.

Measures to securing customer value should additionally include a focus on the release of funding in stages so that a fail fast mentality is encouraged to avoid unnecessary expenditure. However, failure should not be penalised.

¹ Based on a UK average water and wastewater bill of £415 pa

² Source Ofgem website and the 5 year period sum of LCN (£500m), Gas NIC (£20m pa) and Elec NIC (£70m pa) funds.

³ Thomas Watson, Founder, IBM

⁴ Elon Musk

Q: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 broadly welcome a collectively funded innovation competition as set out in the consultation. As set out above in the response to Q3 we do not wish to see barriers imposed on projects because of an interpretation of in-period company performance incentives.

We would like to see the funding model more explicitly incentivise good quality projects well aligned to common issues that are committed to both quality of execution, impact and full disclosure. For regional issues such as water scarcity in the South and East it may be appropriate to ring fence funding.

We applaud and welcome the concept of matched funding from the water industry.

The consultation describes multiple aspects of innovation that it is seeking to support:

- Develop transformational innovation that companies would not explore or invest in.
- Encourage solutions involving systems, people and processes [not just technology]
- Roll out of existing innovations at scale

Each aspect has quite different barriers and measures of success particularly in relation to timescales. It would be welcome if the proposed framework explicitly sought to provide clear guidance on project evaluation to address this aspect. Furthermore to ensure a collaborative culture it is suggested that existing business principles as articulated in BS11000 will be needed through the lifecycle of the projects, including agreement on IP and further commercialisation considerations.

The open by default approach to dissemination of data and learning is welcomed and there will be a need for an overseeing body tasked to collate and publish this. We would further recommend that any framework sets out industry problem statements in enough detail to facilitate informed new innovation. It will important to describe the current approaches including costs, risks and benefits as well as the measure of success. TED Talk style communication approaches might usefully apply.

A single independent expert entity is proposed with the required expertise to advise on innovation on the water sector. The fund is seeking to address multiple aspects of innovation and it will be necessary to provide expertise across multiple disciplines beyond the obvious technical expertise in a particular water industry problem area. Implementation including scalability and people impact are obvious additional considerations in evaluating projects and should thus form part of any advice service, panel evaluation and board representation.

As written the consultation implies “companies” in the context of submitting proposals and match funding are water companies. It is vital that any project has the backing of the water company. However, we would like to see some open competition projects seek funding for which a pre-determined water company(ies) is prepared to invest its time and resource on a project with only an agreed problem statement at the outset. This will encourage supply chain providers without existing relationships to water companies – possibly following a dragon’s den type model.

There is an argument for introducing additional cost sharing on the part of the supply chain and technology providers. We do not believe this is appropriate. Any competition model should not force disclosure in conflict with legitimate IP concerns of the service or technology provider. However, the results and learnings must be done on the full disclosure presumption that the consultation states; paying for provider services within projects makes this easier to achieve.

The model refers to an annual competition basis. We recommend that this approach is evaluated to ensure that short-term and small projects are encouraged in an agile fashion. It is possible that an annual process of management and selection of the programme may stifle opportunities. Management will also need to account for 'fail-fast' or 'pivoting' of projects to drive value and success.

Q: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?

We welcome the explicit encouragement of some end-of-period roll out reward to compliment the funded competition model. The financially rewarded demonstration of at scale benefit is a sensible additional catalyst change agent within the industry. However, to solely rely on such a mechanism will not facilitate sharing of failure nor promote investment in longer term strategic initiatives. Furthermore the evaluation of relative success of different innovation roll outs could be challenging, particularly given different performance baselines.

The mechanism as outlined makes the reward dependent on details being shared with other water companies. We believe that an enhanced measure of share success would be that other water companies have implemented the same solution (or are planning to) based on the innovation delivered and the information shared. In this way the reward is greatest for implementing innovations that move the industry to higher performance levels. Such rewards should be collectively funded.

Individual water company performance rewards-penalties are part of the existing regulatory model and we do not view an individually funded model as necessary.

Q: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 mechanisms proposed represent well-conceived approaches. It is appropriate to provide funding to both the competition funding and implementation reward models. The balanced funding in the 2020-2025 period should in our view be initially weighted approximately ~70% to fund competitions with the balance to reward roll out of successfully shared implementation. The ratio should be adjusted based on a collective view of the greatest industry innovation need. It should be noted that the industry need for innovation does include developing new solutions to address the longer-term challenges that are unlikely to be available as an implementable solution at scale within the five year period.

A mechanism to accommodate alternative complimentary funding outside of customer bills should be included for in any final framework – particularly where such funding does not delay projects.

Q: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?

An innovation strategy will be of benefit and in any event a necessary reference document to underpin any innovation funding framework. Additionally, such a strategy should seek to improve the impact of UK Water industry research programmes (e.g. UKWIR, TWENTY65) and other industry bodies (e.g. British Water, Water UK, Future Water Association) and provide an industry common position in supporting various University research or other government supported initiatives (e.g. Innovate UK

funding). Co-ordinating activities happening within individual company silos has considerable merit not least in avoiding duplication.

It would no doubt be logical for a common body such as a water industry centre of excellence to provide such co-ordination and communication / dissemination. The same centre would logically provide the expertise and support needed to oversee, manage and monitor the innovation fund. By further logical extension such a facility could provide innovation and technical expertise, market knowledge and insight to the supply chain as well as smaller water companies. This support capacity should be offered with a very low entry barrier outside any formal annual competition – either directly or via a pool of consultant expertise contracted to the centre of excellence. We consider that a hub type delivery model would work best in this instance and provide flexibility in the range of support needed.

Such a centre (hub) should not duplicate and only compliment where necessary the existing consultant, incubation and test facilities already in existence across the industry; and instead focus on better joining them up. The consultation rightly states the value to be gained from an open access platform to gain data insights. A centre of excellence would be a logical vehicle to host common industry data sets and provide the appropriate access.

Q: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?

An Ofgem innovation link equivalent link for the UK water sector would have merit. Its value would be greatly enhanced if such a delivering fast and frank feedback included environmental, public health in addition to economic regulators.

Sand-pit regulatory exemptions pose an interesting opportunity for larger scale pilot evaluation at lower regulatory risk to water companies and should also be explored to understand if such an approach increases the uptake and lowers the cost of larger scale pilot trials.

Additional activity that could be part of any innovation fund remit is to aspire to stimulate new relationships between SMEs and water companies – following the UU model approach being taken – would be good for local economies / private enterprise – i.e. water companies opening themselves up to testing approaches, mentoring and coaching the development of innovation with SMEs.

END.