

Ofwat consultation – nuron response

Technical Innovation

We dedicated the last five years to the development of the world's first continuous in-pipe monitoring system for wastewater networks. The result is that wastewater operators can monitor in real-time the capacity and physical condition of their networks and direct operation effort and proactive responses precisely and efficiently, a step which will enable operational and financial efficiencies, but perhaps most importantly improve customer service and environmental performance.

Commercial Innovation

To reduce a large capital cost of deployment, we leverage the commercial fibre and associated project financing market, currently undertaking a once in a generation investment to deploy fibre to the home, to deliver the monitoring as a service to water companies. Whilst this supports the infrastructure investment, a minority contribution is still sought from Water companies, without which the enhanced functionality required for sensing cannot be justified and/or commercial fibre will be deployed within other existing infrastructure (e.g. BT Openreach ducts and poles, now regulated infrastructure access is fully available).

Industry Experience

Whilst our focus has been on developing a wastewater monitoring technology for the last 5 years, our background is not in the water industry. Members of our management team have implemented remote management and control into the UK rail and commercial communications networks; introduced distributed measurement into oil and gas production facilities, and; managed continuous production measurement in industrial processes.

Grants & Funding Competitions

Our Management team has previously successfully secured and delivered optical fibre technology projects supported by over £30m in government grant funding, won in a competitive dialogue process and with state aid approval. We have also won three grant / loan awards from Innovate UK for our new technology development and successfully complied with all requirements including project reporting and monitoring processes.

Barriers to Transformation

New technologies such as ours face unique and substantial barriers to adoption at scale in the UK water industry. The Ofwat innovation fund plays a vital part in overcoming these and enabling the substantial medium and long term benefits which will result from a step change in monitoring and data driven decision making being delivered.

Consultation questions and answers

IPR & Royalties

Q1: Do you agree with our proposed default arrangements for managing IPR and royalties? Do you think these arrangements work for different types of projects and activities (e.g. new technology vs. process innovation, roll-out activities etc.)?

To encourage a broad response and encourage non-fund investment, you should be flexible on IPR. The level of non-fund investment in a technology / project must be considered when deciding whether any IP at all should be retained by a public funder. This will ensure the competition attracts solutions which are already in an advanced stage of development (for example in other sectors).

Owning/sharing foreground IPR with licencing and royalties may sound an attractive way to recover funding, but:

- a) It leads to complex contracts;
- b) It stunts collaboration before it has even begun, and;
- c) It dis-incentives suppliers from injecting the maximum possible innovation into a project, in particular continuously innovating during project life.

It should not be the objective of the competition for either Ofwat or the water companies (who are not themselves material non-regulated commercial operations) to own IP, rather to support the development and application in the supply chain of technology IP which in turn will benefit the UK water industry and their customers by creating a thriving UK water technology sector, serving both the domestic and export markets.

Q2: What alternative arrangements should we be considering for IPR/ royalties?

Each project will be different and use technology and processes which are at different stages of development. For example:

Scenario 1: A company has substantial background IP but requires bespoke modifications for water industry application. Limited new foreground IP is created during the project which has most value in encouraging the supplier to expand their water industry operations and share the cost base with other customers.

Solution 1: Allow derivative (with possible limitation of any completely new) foreground IP to be retained by the supplier.

Scenario 2: A Company proposed to develop completely new technology without use of established background IP. The investment is to be made entirely by the innovation fund.

Solution 2: Company retains the IP and all rights to non-UK exploitation to incentivise the Company to export. A license is mandated for UK Water company use to create security of supply from the publicly funded technology.

Innovate UK and EPSRC in their grant award processes leave the exact agreements on IP to the collaborators in joint bids. They often require evidence of a collaboration agreement, including the IP arrangements, to be submitted as part of the funding competition submission. This could provide a flexible solution which would enable the Ofwat evaluation team to assess IP arrangements as part of the competition, rather than prescribing a model.

Open data

Q3: Do you agree with the principle that data generated through the innovation competition should be open by default?

Consider defining types and levels of data so participants are clear on expectations. There is some data which water companies would willingly share, and which has maximum value to the public, and other water companies. Other data has much greater commercial value and should be leveraged to incentivise non-fund investment. Other data may be sensitive e.g. customer data and not suitable for sharing.

Again, be flexible on data rights dependant on the level of non-fund investment brought to the project, and whether this investment can be shown to depend on data exploitation.

Company Contributions

Q4: Do you agree with our proposed approach and that we should consider alternative arrangements beyond company contributions?

We agree that there needs to be a flexible approach and consideration as to the total value being brought to the project. All factors such as level of open data, non-fund investment and pre-existing IP should be considered in the round.

Making the level of non-fund investment part of the evaluation criteria, to encourage the maximum level of investment from applicants, should be considered.

Q5: Do you agree that a guideline minimum company contribution of 10% is appropriate in this context?

As per Q4 answer.

Types of Project Funded

Q6: Do you agree with the overarching approach we set out here?

The competition should not focus solely on evaluating the technology, rather the outcomes / ambition, supported by the level of risk taken by applicants.

The use of 'Technology Readiness Levels' has in the past frequently resulted in poor risk decisions, having been used to dismiss many subsequently successful technologies, and equally frequently failing to identify technical risks. Commercial risk take by the proposers is a much better indicator of technical risk management capability, which is more important than readiness level in itself.

Q7: What are your views on introducing separate, proportionate, arrangements for small-scale projects? How might we define small-scale projects for the purposes of the innovation competition?

We do not think that this is compatible with the objective of funding only transformation projects which water companies would not explore or invest in. Water companies have a track record of expenditure on a portfolio of small value innovation evaluations, often using internal resources.

It would be useful for there to be an early stage, modest value incentive for water companies to be more ambitious, particularly in collaborating with external innovators to provide a pre-qualification in the longer term for the main Innovation fund. We think this should be operated by Innovate UK, who are specialists in this, possibly supported by a contribution / partnership with Ofwat. For example, Ofwat could sponsor a Water focussed Innovate grant competition, aimed at early stage feasibility ideas.

Q8: Do you agree with our proposal for ensuring roll-out is at the heart of the innovation competition? How might we reward both leaders and fast followers in this space?

Yes, we strongly support this principle.

The main incentive for leaders should come through the scale of award, with leaders always receiving larger awards than fast followers.

These larger awards could be in the form of higher proportion of funding, or larger project sizes, or a combination of both.

The degree to which 'fast followers' should be rewarded should be time dependant. A 'fast follower' who agrees to adopt an innovation during the early months or years following a leader will not benefit from the leader de-risking that innovation to the same extent as one who holds back several years, so there should be a recognised taper in the degree of support available with time.

Evaluation and award criteria should create visible winners and losers to ensure that those with the greatest ambition are advantaged, rather than simply re-distributing the fund back to its source. The incentive effect of clear winners will achieve more for all customers than a process which fails to provide any real incentive to excel.

Protecting Innovation Funding

Q9: What practical arrangements should we introduce to ensure adequate ring-fencing of the innovation funding?

The primary mechanism for assurance of the funds expenditure should be the monitoring of outputs and results against a submitted project / business plan, rather than auditing and tracking of expenditure. This then encourages the recipient to manage project risk flexibly to deliver an outcome, rather than rigidly controlling expenditure regardless of results.

If outputs and results have not met objectives, then secondary mechanisms can include audits of permitted expenditures, but these need to be defined by broad activities in order to encourage the management approaches described above.

Partnerships and collaboration with third-parties

Q10: Do you think the proposed innovation challenge approach will help better enable partnerships and collaboration between companies and third-parties, in particular smaller innovators? Are there alternative approaches we should be considering? How can we make sure this approach works in practice?

Partnerships and collaboration will be greatly accelerated by opportunities to bid for and deliver the large beacon transformation projects that the scheme is set up for. It is for this reason we recommend the funding and resources should be focused on this outcome.

Protecting customers' interests

Q11: Do you agree with our proposed approach to returning funds to customers? Are there any other circumstances, not considered here, under which we might consider returning funding to customers?

We agree that recovery of funds allocated to a project should be a sanction, rather than an expected outcome.

More clarity on conditions and purpose of funding is required.

Interactions with the price review

Q12: Do you agree with our proposed approach for managing interactions with the price review?

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Updated principles

Q13: Do you agree with our proposed amendments to the principles? Are any further amendments to the principles required to reflect our approach to outstanding policy issues outlined in this document?

Design and implementation of the competition

Q14: Do you agree with our proposed focus, major strategic themes and overall approach for the competition?

Yes, however challenge participants to meet as many of your key themes as possible in either one or a small number of inter-linked projects, as opposed to selecting a few each year.

Q15: What is the appropriate split of available funding between the Innovation in Water Challenge, the main competition and enabling activities?

The fund should be focussed on the main competition, particularly in the early years. The other enabling / pipeline building activities need to be seen as subsidiary to this.

Q16: What are your views on the feasibility of running all three types of activities in the pilot year, and on the proposed timings in Annex 3?

We would suggest prioritising the main competition, as this is likely to deliver the largest impact.

Key implementation considerations

Q17: Do you agree with our proposed approach to key implementation considerations outlined here?

Only trials with clear commercial and technical success criteria which in turn are success gates to committed scale rollout should be accepted.