

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

1.1 Supply chain

We must recognise that supply chain are a significant component of innovation in the industry and most innovation and new ideas are rooted and fertilised within these businesses (SME) who do not have access to funds to support the rigorous tests and or trials required by water companies prior to adoption. Often each water company will independently test a product that increases the cost to the supplier. Following acceptance, it is difficult for SMEs to access funding to support the scale up and commercialisation of the innovation as they are unsure of the take-up volume.

We must not expect the supply chain to assume all the risk on innovation and a more strategic collaborative arrangement with the water companies is needed to manage the outcomes and cost of the innovation journey. The water companies need to invest in the supply chain to encourage and not stifle innovation. Different water companies have different processes for engaging with innovation to assess validity, test the ability to comply with regulatory conditions and prioritise those ideas that may have greatest impact.

Commercial engagement of suppliers will vary – some will be “on the books”; others not – this creates issues if good ideas sit outside a procured set of organisations. We must question how a water company could introduce innovation from a “new” organisation, and remain compliant with EU rules.

We must not forget the ‘innovator in the garage’ as many good ideas come from the sole trader who has minimal funds to promote their ideas to the water companies.

Also, improved alignment between water companies and their respective approaches to innovation is essential. A convoluted system of teams, funding and processes will add unnecessary burden to the task and potentially limit innovative behaviours. We must challenge water companies to integrate for the collective betterment of UK water industry.

1.2 Supply chain

Owing to the rigour of testing and the risk profile of asset change management, the water companies are not encouraged to accelerate commercialisation and scale up. A more collaborative approach to adoption across the water companies would potentially enable the products to come to market sooner.

There is a heavy reliance on frameworks via construction delivery partners (CDP), which may block innovation as the supply chain are selling innovation and associated risk to a 3rd party (CDP) and not to the end user. The industry should clearly define and communicate examples where innovation has been positively enabled through commercial and contractual frameworks.



The water companies and CDP's are generally incentivised on outturn capital cost where innovation may provide a more sustainable, resilient, lower life cycle cost at an initial higher capital cost. When tendering projects onto the water companies, contractors are more often assessed on providing lowest capital cost. This stifles the contractor's ability to provide best whole life cost solutions. Again, clearly defined examples of commercial and contractual enabling of innovation should be collated and shared.

Procurement models used for design, build and operate (DBO) would generally incentivise the contractor with respect to whole life cost. These models open the door to providing innovative solutions as the TOTEX and compliance risk is with the DBO contractor.

1.3 Contractual arrangements

The chain of contractual arrangements between the clients (water company), CDP, subcontractor, supplier and regulators is a potential blocker to innovation. This is due to the transfer of risk between the various parties and the limit of liability that is transferred between each party.

Adopting innovation is perceived as a risk and the contractors starting position would be to offset the risk liability with the supply chain. The size of the supplier will determine the amount of risk that is acceptable and in most cases this is a limiting factor to adoption of innovative solutions.

For contractual arrangements to enable innovation, they must ensure that risk is properly managed through innovation – it must be clearly defined, controlled and mitigated. Responsibility for the management of risk must be clearly established and understood by all. Loading the accountability and responsibilities on the right people for the right reasons, else it will cost more, lead to more commercial difficulty and fundamentally prevent cost effective service to customers.

In addition, the rules of procurement often require products to have been used successfully in industry for a period of time therefore a contractual concession is required to incorporate innovation. While regulation is in place to protect customers and ensure quality, resilience and affordability, some flexibility and challenge is required to advance the industry.

Contractual arrangements should facilitate gain share between clients, customer, CDP's, subcontractors and suppliers to encourage innovation that provides beneficial whole life costs. It is suggested that the WLC benefits are shared. Also, it is recommended that any examples that demonstrably incentivise innovation are shared throughout the industry. A truly collaborative approach is required to share and aid one another in the understanding and implementation of such models. Ofwat may consider a legal and commercial template and framework to streamline innovation in the water sector.

1.4 Intellectual Property (IP) / Ownership

Water companies should define their approach to innovation and whether they expect to share IP or to



work with independent organisations that can introduce value to the wider industry.

IP / ownership is an issue to sharing innovation due to the amount of intellectual and development costs associated with developing and or adopting supply chain innovation. Some water companies want a degree of ownership and control over new ideas. This can stifle the market as it limits benefit and opportunity for a business to market their products. In summary:

- Asset owners should relax their stance on IP ownership as this stifles progress.
- Standardisation on IP approach across UK industry needs to be defined to make route to market as simple as possible
- Approvals process, time, and cost prevents significant development; this could be shared across the water companies.

Clarification is required on asset standards – specifically, justification on the degree of variation and clarity on opportunities to rationalise these.

1.5 Collaboration

Most water companies have individual business processes for soliciting, developing and adopting innovation. The water sector needs a more joined up collaborative approach to sharing innovation. This may be hindered currently by the SIMS scoring system (league table) where each water company does not want to provide any betterment to another. This results in water companies working in silos where some innovation might be cut short before being made visible to others.

A centrally pooled investment pot is required. This will require radical changes in business process and systems to enable collaborative innovation. The percentage investment should relate to population served by the water company. Investment outputs should be shared across the sector, to raise the bar and standards, enable learning and striving for the best possible solutions for customers.

The industry should also share examples of collaboration between client and suppliers, demonstrating how they have realised benefits through their combined actions to further reinforce collaborative behaviours.

1.6 Risk

The water industry is risk averse. To embark upon a sustainable innovation journey, it requires this risk to be managed and to realise via a stage gate process. Not all opportunities will be completed, and the current stance adopted by the water companies is that failure is unacceptable. This behaviour and mindset further encourages and reinforces risk adverse behaviours throughout the supply chain, where many innovations are prematurely rejected. Learning to “fail fast” should be encouraged as a positive behaviour, where knowledge can be accrued, shared and promoted across the industry to improve the sector as a whole.

Innovation can lead to change of an asset standard. In order for a water company to accept this change



(it must accept it because failure is an issue for the water company, as the licence holder, not the supplier), there must be sufficient time to review and test the thinking. It is likely there will be a residual risk which needs quantifying and assessing before the innovation can be accepted. Clarity and guidance on this review process will help both the water company and the supplier to manage their expectations and remain engaged throughout the processes, preventing disillusionment and resistance to change.

There is an expectation that someone else should pay for failure therefore suppliers are expected to absorb the commercial risk and invest in the prototyping and development of the innovation.

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?

2.1 Funding amount

£200m over a 5 year period would appear insufficient to stimulate innovation. Innovation funding should be proportionate to a cost-benefit analysis over the AMP period(s) evidenced by a strong business case. The focus should be on the TOTEX benefit where funding will be used to provide a whole life cost benefit over say two AMP periods. The aggregate £1.50 per year increase to customers assumes the investment will add no commercial benefit or financial recovery for the water company/customer, where the focus should be on applying innovation effectively to reduce the customer cost.

Ofwat should provide a mechanism to permit the water companies to stimulate innovation by investment with a goal to reduce the customers cost but realising that some innovation journeys may fail and the suggested £200m is a means of insurance if the business cases are not realised (backstop). As it is not the regulator's role to be a central body in the control and implementation of innovation, Ofwat should define what it is trying to achieve from this. With this statement of intention, companies will be better placed to stimulate innovation in a manner more appropriate. Guidance on scale, complexity and nature (small projects, large projects, integration, collaboration, part funding) will add value to this.

As a contractor we are investing a considerable sum in innovation (private sector money) where we would expect to receive a return based on a win-win commercial arrangement. This level of investment for the UK water industry on one particular innovation if adopted could be provide an internal rate of return (IRR) of 25% over current wastewater operating costs for specific works. The benefit of providing financial support to the water companies in this instance would be to reduce the financial risk to the water company's in the early adoption of the innovation and the IRR if realised would enable the water company to reduce customer cost over an AMP period. Therefore the investment in innovation should be shared between the water company, contractor and or supplier

2.2 Funding mechanism

The £200m Ofwat innovation funding mechanism would need to be supported by matched industry funding. This promotes a "skin in the game" arrangement to drive best value, a financial incentive and reduces the investment risk for all parties.



Delivery of innovation must self-fund. Gainshare should take account of water company (asset owner), innovator and implementer plus perhaps a return to both the Customer and also to Ofwat (to add back to the £200m fund). We must recognise that all innovation does not result in direct return on investment (however will stimulate indirect return on investment in most cases) and so the funding mechanism must be flexible enough to encourage these opportunities.

As mentioned in 1.5 consideration should be given to pool funding from water companies into single pot. In summary collaborative funding:

- Has to be shown to directly stimulate innovation
- Benefits could be recovered through AMP8 determination
- Must be strictly governed, ring-fenced, adjudicated by independent group and alignment to industry challenges ensured
- Adjusted weighting where collaboration is evidenced (working with SMEs or Academia, or joint ventures)

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

3.1 Governance

The administration over funding allocation should be clearly defined by Ofwat in order to safeguard the interests of customers.

Flexibility and agility is required to enable the process of selecting collaborative innovation projects. This should be based on risk vs opportunity for each proposal, governed by Ofwat and UK water companies steering group. The perceived challenges are:

- Who is going to approve funding?
- How will it be awarded?
- How is cost-benefit measured? How does the end customer benefit?
- Changing legislation over the AMP period could lead to issues, so innovations need to be futureproofed.
- Governance and accountability is key to ensure equitable approach to funding
- Rigour / clarity on how a funding pot is split between water company, CDP, subcontractor and supplier.

Governance should then monitor how the innovation is developed, what is needed to embed it with maximum effect (and who should participate), and then how is value both created and reported, in order to demonstrate customer safeguarding.



It is important to note that the development of this funding strategy should be reviewed as it matures, allowing for the governance to adapt to change and continue to be fit for purpose. As innovation maturity, and corporate maturity evolves it is crucial that the processes that support this capability is allowed to mature in tandem, otherwise the governance process will then become a blocker to what it is trying to achieve.

3.2 Scale

We would advocate that funding should be there for large scale opportunities as well as small scale and only be allocated to early adoption ideas, and not extended to operational scale-up / commercialisation as this should be the responsibility of client / contractors / SMEs involved with the development of the idea.

We recommend that Ofwat retain a degree of responsibility for the long term tracking and benchmarking of innovation, we would offer our skills and experience on supporting this exercise. Once innovations have surpassed the boundaries of proof of concept (POC) and are out of the early development stage, approaching a higher technology readiness level (TRL) and commercialisation, it is crucial that Ofwat remain involved. It is key that a level of oversight is maintained so that Ofwat continue to access data that demonstrates value, benefit and customer safeguarding. This will inform and support future funding mechanisms.

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?

4.1 Models

Promoting a joined up approach is a positive step for the industry. More collaboration is required to reduce the investment cost of innovation and to provide benefit to the UK water sector as a whole. As an industry we “do not make original mistakes”, sharing learning and knowledge should be a critical aspect of the model.

Ofwat refer to "Competition" that could potentially drive the adversarial and prohibitive behaviours in the face of collaboration. Consideration to be given to a different term to promote cooperation.

It is realised that a different approach to innovation funding is required and we should review how other sectors deliver innovation, collaboration and funding. In particular to sharing knowledge, we should investigate and potentially adopt a similar approach to the aeronautical and auto industries.

4.1.1 Challenge led

In preparing this consultation paper Ofwat has taken the lead on challenging the sector to stimulate



innovation. From this consultation a blend of incremental and radical opportunities will need to be developed that will challenge sector in considering change. These challenges will extend to financial, business process, cultural and behaviours. Each water company will have specific regional challenges that will impact on the level of opportunity.

4.1.2 Idea led

Championing innovation is not new to the water sector and successful models could be adopted from existing water companies and contractors such as Anglian Water, Severn Trent Water, and J Murphy & Sons. The challenge is to establish a collaborative open sharing portal to table and share ideas and track innovation projects.

4.2 Governance

Any transformational strategy in the sector should have a governance process that will independently assess the value of the innovation (business case) against the customer benefits and whole life cost model. Organisations such as the Water Research Centre and Institute of Innovation and Knowledge Exchange (IKE) may be seen to be independent parties. We would suggest that Ofwat and government sponsors are also required to govern the process and provide adjudication.

4.3 Collaboration

Any collaborative innovation strategy will need to address conflicts of interest and clearly define government and sector stakeholders that are or not permitted to engage with the competition. Strategy should consider that any funding application should stipulate a collaborative approach (e.g. min number of water companies making joint application similar to Innovate UK) to encourage UK adoption of best practice.

Ofwat must ensure that the bureaucracy of the process does not stifle collaboration across the sector. Any collaborative innovation strategy should not be exclusive to the water companies and needs to incorporate CDP's, subcontractors and suppliers. It should also reach out to other stakeholders such as industry, Environmental Agency, DNO, Trade bodies (Future Water Association, British Water, Infrastructure Industry Innovation Platform (i3P)) who all can contribute to achieving better outcomes through collaborating on innovation.

Links to, or emulation of, similar industrial consortia like the i3P. The i3P is an innovative platform that allows the brightest minds in infrastructure to collaborate to deliver infrastructure for the future, drawing on the knowledge and expertise of clients, contractors, suppliers and academia. Links to, or emulation of, client led challenge strategies that clearly define problem statements and routes to market (for example, Network Rail challenge statements).



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?

5.1 Timescale

If this is restricted to one AMP period, this could stifle innovation as the process for ideation, development and commercialisation could exceed this. We would challenge the 5 year period for innovation and reward cycle and suggest this is extended. The five year period needs to be extended by a few years to accommodate changes that take years to develop and prove. Needs to be carefully managed to ensure engagement does not suffer toward end of funding cycle.

There needs to be a long term alignment with the 2050 vision and align innovations, funding rewards, and long term Ofwat / Environmental / Government carbon targets etc.

5.2 Reward mechanism

As mentioned in the previous sections the investment and reward should be collectively funded to drive collaborative behaviours however clarity is needed on how to define benefit, who owns the risk, who administers this and how it is controlled over time.

When considering reward we need to consider the whole life cost benefit and how this realised, assessed and rewarded over what time period.

Ofwat should to consider if the financial benefits from each innovation can be accumulated in a single innovation repository, redistributed to respective stakeholder including the customer at the end of the AMP period. The financial benefits could be awarded to Stakeholders based on customer base size, innovation input and performance. Customers would receive the first portion of the fund before water companies / innovators.



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?

6.1 Funding

We need to consider how teams can access external funding opportunities that exist currently such as InnovateUK. Could Ofwat provide support to access these 3rd party pots based on an approved business case.

As mentioned in previous section that funding for innovation should also be provided from the collaborative teams.

6.2 Reward

To encourage the best behaviours in utilising innovation to provide best whole life cost then the following should be considered:

- Shared accountability for ops and maintenance
- Promotion of further direct procurement for customer schemes (in and cross utility)
- Direct link between innovation and pain/gain contractual mechanism. Give weight / credence to innovation performance when delivering projects.
- Opportunity for contractors to move towards strategic support / partner.
- Address difference between CAPEX / TOTEX funding mechanisms to enable long term strategic innovation investment.
- Delivering projects against an agreed target efficiency factor where gain share is encouraged to promote value added outcomes. This would require the contractor to commit during tender to a % efficiency (saving) against CAPEX and OPEX across a programme of works.
- Often to drive best value more time is required in concept definition that may include adopting innovative solutions. This lead time can be made available through Ofwat fast tracking water companies.
- Ofwat should consider specific awards for exceptional innovation performance. Promote the benefits of applying innovation.
- Award the local community where projects provide better outcomes via innovation. This will strengthen customer relationship, be seen as a win for the water company promoting improved relationship, a win for the innovator by market leading exposure a win for the customer by providing an improved service, free community development, reduction of customer cost.



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?

7.1 Joint strategy

The UK water sector requires an Innovation Charter that provides a commitment from the water companies that they are obligated to engage in identifying and developing innovative solutions in collaboration with others for the betterment of the customer. This should include the engagement with industry wide innovation consortia.

Any new initiative should be separate from and managed independently of any corporate P&L account.

7.2 Centre of excellence

Collaboration extends across many stakeholders including the proactive engagement with academia, customers, suppliers, contractors, industry, international water companies, regulators etc. to exchange knowledge, best practice and to discuss and solve problems. Collaboration would enable a UK Centre of Excellence for the industry.

7.3 Insights

As a contractor we are often entering into new framework contracts with water companies on “zero margin” or “very low margin” to encourage margin growth via collaboration, “we must outperform to be profitable”. Although a high risk approach for each contractor working within an alliance, it has proved to be successful in Anglian Water over the last two AMP’s and a strategic enabler for collaboration. Taking this concept a step further would be for the water company to adopt a zero margin at price review and to grow this margin through a collaborative approach to innovation.

7.4 Additional activities

Award the local community where projects provide better outcomes via innovation. This will strengthen customer relationship, be seen as a win for the water company promoting improved relationship, a win for the innovator by market leading exposure a win for the customer by providing an improved service, free community development, reduction of customer cost.

We should also consider engagement and collaborating with the wider innovation community through:

- Innovation Hackathons
- Sprints
- Institution of Innovation and Knowledge Exchange (IKE) integration - membership, courses, accreditation
- Promoting the sector achievements at specific innovation Industry award events



- Communication
- Transparency
- Innovation community engagement events
- Engagement with wider stakeholders and best in class international practitioners
- Engagement with supply chain and trade organisations

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?

8.1 Advice service

Ofwat should consider the benefit of developing a portal similar to Ofgem's innovation link. <https://www.ofgem.gov.uk/about-us/how-we-engage/innovation-link>

Ofgem's Innovation Link is a "one stop shop" offering support on energy regulation to businesses looking to launch new products, services or business model

8.2 Increased coordination

To maximise access to ideas it is critical to learn from adjacent industries (countries), taking their best practise and reapplying it. The proposal outlines measures to control and manage innovation, but less so on how to "drive" innovation within the sector.

Incorporation and regulation has to leverage innovation strategy. If companies do not demonstrate their alignment to the innovation strategy proposal, there should be a penalty.

There needs to be an incentive for good behaviours that align to the innovation strategy, in addition to a mechanism for equitable partnership.

8.3 Additional activities

To drive innovation, the approvals and asset standards challenges need to occur promptly to expedite the process.

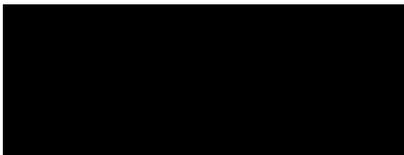
The sector should collaborate and develop sector wide challenge / problem statements, helping focus projects and improvements. This could be made available through a sector wide portal as explained in 8.1. The portal can be used to bring companies together to solve one another's problems providing a joined up approach.



As explain previously the 5 year regulatory AMP period does not stimulate innovation effectively. We need to think and plan ahead of the immediate regulatory requirements and innovate to future proof to align with the 2050 vision.

Murphy is looking forward to starting this collaboration with you.

Yours sincerely on behalf of J Murphy and Sons Ltd.



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