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Dear Sir/Madam,

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

Thank you for consulting on how we might drive further transformational innovation in the water sector for the benefit of our customers, and to increase our resilience in the face of the various challenges we have.

These comments are from Dŵr Cymru Welsh Water, the statutory water and sewerage undertaker that supplies over three million people in Wales and some adjoining parts of England. We are owned by Glas Cymru, a single purpose, not-for-shareholder Company. We provide essential public services to our customers by supplying their drinking water and then carrying away and dealing with their wastewater in a sustainable manner, one which protects our environment. In this way we make a major contribution to public health and to the protection of the Welsh environment. Our services are also essential to the sustainable economic development of Wales.

We welcome this review into how innovation can be further stimulated and incentivised in the water sector. The timing of the review is apposite as the industry has been discussing for some time how we can improve the development and take up of new innovations to reduce our costs, and to provide improved levels of services and greater environmental resilience. In particular we welcome the proposal for the formation of a 'centre of excellence' for the trialling and progressing of new technologies, something we have been discussing with UKWIR and other parties such as the UK Water Partnership.

Dŵr Cymru published its refreshed Innovation Strategy earlier this year in preparation for our work in AMP7 and our 2050 Innovation Journey Plans (see www.dwrcymru.com/en/Innovation.aspx). These set out in some detail the research and innovation we feel are needed to deliver the ambitious outcomes we have agreed as priorities with our customers for AMP7 and beyond. Many of these are common to the sector and we believe could benefit from a centre of excellence to strengthen collaboration and accelerating sharing of best practice.

We also welcome the recognition in the proposals of the importance of continually improving services to customers and for solutions to be both sustainable and resilient in the face of the

climate change and biodiversity crises we now face. Indeed innovations which encompass and enable customer behavioural change will be essential if we are to deliver sustainable water and wastewater services going forward.

We are pleased to see Ofwat recognise the considerable progress the sector has made on innovation since the 2009 independent review of competition and innovation in water markets. In our PR19 draft business planning proposals we have included proposals for innovation in its various forms equivalent to around 2% of turnover. This is a significant increase on the previous period.

Turning to the specific proposals in the consultation, providing an additional £200m of investment either in the form of available up-front funding and or some form of retrospective reward to companies once innovations become embedded, is also welcome as we see it complementing the investment we have highlighted in AMP7. We see such a new fund dealing with those projects or initiatives which are too difficult, complex or costly for any single company to own, rather than replicating work already underway.

The approach set out in the consultation builds on the successful 'one voice' mechanism we already have in the sector to drive research forward through UKWIR, and has the potential to deliver the efficient development and implementation of 'one voice' new technologies. Such a fund if independently managed, but owned by the industry, could offer good value to customers, and potentially act as a technology 'catapult' for the more general benefit of the UK.

The scope and terms of reference for any new 'centre of excellence' will need to be carefully considered. In particular there needs to be careful consideration of the definition of 'Innovation', and particularly the crossover to 'research'. The definition given in Box 1 of your consultation document potentially encompasses some of the activities currently undertaken by UKWIR.

Strong governance enabling both regulators and the industry to share risks will be key to the success of any new approach. Equally, independent oversight to ensure the value and impact of each project supported through the process is assessed and reported will also be essential.

The support of regulators will also be key to the success of a future centre of excellence. Many disruptive innovations require us to sort issues out at source, such as the entry of plastics into our sewerage systems – something we can only do with the support of regulators and indeed governments. Similarly, longer term solutions, to provide sustainable solutions to the challenges we face from climate change in particular, will require new policy at government level. The new centre of excellence will therefore need to successfully liaise with the governments of both England and Wales on matters of policy and regulation, to facilitate and enable new innovative ways of dealing with the challenges we face.

We would suggest that the opportunities this body could bring should be opened up to Scotland and Northern Ireland and so support delivery of benefits for the whole of the UK. In this way the new body would be able to tap into facilities which exist in Scotland to test and develop technology, and assist the growth of UK-wide companies, not just those in England and Wales. Similarly where companies have strong relationships internationally such as those we have with HOFOR - the Danish Water and Wastewater service provider for Copenhagen - we build on these, bringing in and sharing the best innovations from overseas.

Any new centre of excellence will need to be appropriately resourced, perhaps capping overheads at 3-4% of the total cost. To that end we would suggest the UKWIR model, which is 'not for shareholder' and has much to commend it in the design and governance of any such fund. This model has a proven track record of delivery, and deals fairly with the broad company size differences which in any other model could lead to bias in terms the selection and funding of projects.

In summary, a £200m fund for the upfront funding of innovation investments and to incentivise the embedding of new technology - which goes beyond those a company would normally take up - could as the consultation suggests drive further progress in the development of both new technology and new approaches to delivering sustainable solutions in the water sector. Combined with the mooted centre of excellence, this could help provide a material boost to innovation in the sector in AMP7 and beyond.

Our detailed answers to your questions are annexed to this letter. We hope you find them useful. Please do not hesitate to contact me if you require any further information.

A copy of this response is being sent to colleagues in the Welsh Government's Water Department for their information.

Yours sincerely

Tony Harrington
Director of Environment

Annex A – Question Answers

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

There are currently four main barriers to seeing further transformational / disruptive innovation in the water sector.

- **Lack of incentives and associated regulatory mechanisms which recognise the need for investments with a long term (>5yrs) payback**. Some innovations such as those involving nature and or catchment management tend to pay back outside the 5 year funding cycle and so are harder to be funded by companies given the current economic incentive processes in place. It is not unusual for sustainable and or ecologically resilient solutions, rather than 'grey' traditional solutions to fall into this category, particularly solutions which deal with catchment and ecosystem services related matters. Such 'blue/green' rather than 'grey' solutions also require novel regulatory processes to facilitate them, which do not yet exist in the main, such as to structure and facilitate 'market based ecosystem services'.

  Any new incentive process must also facilitate and enable policy change if such solutions are to be available in any practical way to the sector. Policy change both within Regulators and more broadly at the Government level, e.g. on land use planning, will be essential to support and facilitate such innovative longer term nature based solutions.

  An example of this is the proposed land use reform changes in Wales. These reforms should structure a new regulatory framework to support market-based ecosystem services. These will allow the company to work at catchment level with partners and support entirely different innovative 'blue/green' nature-based solutions to the challenges we face, solutions which can be dovetailed and leveraged by government incentives and funds also. We see such policy and regulatory changes as enablers for both transformative innovation and supporting the aims and principles set out in the Wellbeing of Future Generations (Wales) and Environment (Wales) Acts.

- **Lack of wide scale regulatory risk sharing between companies and regulators**. All regulators need to be willing to share some element of risk to enable new and particularly transformational innovations such as the application of a novel or new technology to reduce costs and or improve services to be enabled.

  An example of such successful risk sharing was the development of the regulatory processes and associated technology and monitoring protocols in AMP1 & 2 to enable the use of UV waste water disinfection systems. These were not permitted initially as it was felt in the 1990s they were not as robust a solution as long sea outfalls and marine treatment. Today they are commonplace.

  We are now actively looking at a range of innovative disruptive regulatory and policy changes to enable the Sustainable Management of Natural Resources (SMNR) in Wales with our environmental regulator (NRW) and government.

Innovation is as much about driving regulatory change as it is technological change, and we hope any new body driving disruptive innovation would value and enable both equally.

- **Insufficient regulatory resourcing for research and change**. Regulators need themselves to be adequately resourced to support research and the swift drafting and implementation of regulatory arrangements required for such innovations. Regulators should be part of the approach which trials and embeds new innovations to ensure that such change was supported by them. Regulators, whose ability to support research, technology development and then the implementation and trialling of new disruptive approaches, may need access to funds to support the parallel regulatory and policy changes needed.

- **Competition versus collaboration in both companies and the supply chain**. The development of disruptive innovation has historically been seen as an area in which companies can gain a temporary competitive advantage. However the incentive is limited due to the regulatory model which 'claws back' any gains at each price review. Cross sector mechanisms to incentivise and fund technology development have been limited and constrained - the 'one voice' work we do through UKWIR focuses solely on research, which is only 'game changing' when it shapes regulatory policy.

  An innovation fund such as that proposed in the consultation could support innovations which were previously too large or risky to be funded by a single company under the 'competitive advantage' approach. In time these innovations could modify the culture of the sector as a whole, and enable the sharing of technology, ideas and resources for the common good.

  However, the two approaches, competitive and collaborative, may not sit well together and Ofwat should consider how they will interact under the proposed model.

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.

The funding we currently provide UKWIR to undertake 'one voice' research (rather than disruptive innovation – and in particular in technology development which companies then implement) is probably the most cost-effective and efficient innovation investment we undertake, next to the research funded entirely by the UKRI but led within the water sector.

A similar 'one voice' fund focused on technology development and implementation, as long as these technologies are supported by regulators, would catalyse the level of change we are all seeking for our customers and drive resilient ecosystem and other services.

Such an approach is not new for the sector. In AMP1 funding was secured by companies and the supply chain to develop and implement UV disinfection systems for coastal discharges. There was no regulatory process at that time to enable UV to be used as a treatment system. The (then) NRA (the predecessor to EA and NRW) worked in partnership with the industry, eNGOs and the supply chain for several years to trial and then develop the regulatory process needed to enable such systems to be used confidently. The wide scale transformation of our bathing water quality, at a lower whole life cost than long sea outfalls solutions would have provided, as a result of the implementation of such technological and regulatory systems speaks for itself.

It is hard to assess what level of fund will be required to incentivise and enable cross sector technological and associated regulatory changes to be implemented, but the £200m set out in the consultation seems reasonable as a total cost, including that of running the independent organisation which will be required to oversee this investment. Clearly such funding would need to be reviewed at PR24.

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

Yes – but with qualifications and additions.

The majority of the principles appear reasonable. Our experience based on many years of UKWIR membership is that it is easy for large companies to drive the agenda for the benefit of their (largely urban) customer base. For this reason we recommend the adoption of the UKWIR 'one voice' rubric for whatever mechanism emerges from this consultation.

We also note that the consultation is silent on the subject of intellectual property. Any IP arising from the innovation fund should be vested either in the innovation body, or jointly owned by participating companies.

Similarly, it is essential just as it was in the development of the regulatory protocols for the use of UV as a disinfection treatment process, that all the regulators are involved in such 'one voice' technological advances. Any new independent body would need to be set up to manage the fund in a transparent, fair and open manner. We would envisage the body would have a small independent Board (rather like UKWIR) whose terms of reference would need to include ensuring regulatory changes which are required to enable the successful implementation of disruptive technologies are sympathetically reviewed and then resources made available to trial and refine the regulatory processes to implement and embed such change.

It is critical for the success of any such fund that that the tenets of 'better regulation' are made one of the key elements of the terms of reference for any innovation fund governance group.

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?

The collective funding approach adopted by UKWIR has worked well for many years and could form the basis for any such innovation competition. The UKWIR process does not require match funding although this is welcomed. Any new centre of excellence for innovation would need to consider carefully how match funding should be dealt with.

We need both collective ('one voice') and individually incentivised innovations in the water sector to deliver the very stretching targets which are included in the draft determinations and then in various 2030 and 2050 visionary documents the sector has. This is essential as companies have specific research and innovation needs which will not be met or supported by such a collective fund. We see this today in the way that collective research work undertaken by UKWIR only covers a proportion of the research sponsored and supported by the industry – that for 'one voice' research. The current system as set out in the consultation confirms that individually incentivised innovations are working well, but collective ones where we share best practice and or technological advances for whatever reason are not. The fund is therefore most welcome as it enables the collective technology development needed for the sector to advance its services and improve resilience over and above that which company specific investment will afford.

A key challenge for the proposed approach will be defining what is eligible and how value is to be assessed. These issues, along with others such as governance arrangements, will need to be carefully considered and resolved before the fund is launched to ensure its success.

We would support the view taken in the consultation that the fund should be overseen by Ofwat, with some form of independent non-executive type structure, directly involving other relevant regulators. This would ensure that where regulatory flexibility is required to enable an innovation to be embedded, it can be properly considered up front and then supported from a regulatory perspective as needed.

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?

This is every bit as important as the upfront funding of collective 'one voice' technological advances. Funding and catalysing innovation in itself, whilst essential, is not enough. Rewarding its implementation and the embedding of new approaches/technologies in companies is a key area which needs to improve. Having a fair balance between upfront funding and retrospective reward would work well and align with other current Ofwat practices on efficiency. We would suggest a

50/50 split of any funding made available with a review by the independent fund governance board in time for PR24 to refine this as needed.

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?

- UKRI funding leverage. Providing a proportion of the upfront funding to stimulate the leverage of UKRI research funding into the sector would be most welcome. Currently UKRI members (NERC, EPSRC et al) fund significant water related research. Using our funds to align UKRI's funding to our 'one voice' needs as set out in the UKWIR Big Questions, could dramatically speed up this area of research and enable transformative regulatory and technological change to take place. This would drive the longer term (>10-15 yrs) value chain, which otherwise would be at risk of being underfunded under the current proposals.

- We would propose consideration of a virtual UK Centre for Water Sector technology testing, development, accreditation and advancement. The industry has been in discussion with the UK Water Partnership and others for a number of months now discussing the merits of setting up a *virtual* testing centre for new technologies to reduce the replicative trialling and monitoring that goes on currently. The needs for the centre to be 'virtual' would stimulate different existing players to bid (tender for framework contracts) to trial, to agreed standards, different technologies. Once trialled successfully these could be 'kite marked' and not only sold into the UK but to overseas water sectors, and so stimulate growth for UK technology suppliers. Such an approach would also short circuit the time and costs taken to trial and then implement new technology in the sector. It would also allow regulators to review and approve such technologies e.g. for use in drinking water systems or to be intrinsically safe for the use of waste water systems. The *virtual* approach would also enable the use of existing facilities and so avoid any duplication of costs in terms of funding the development of any such new facilities.

- We work with our financial auditors to obtain an annual rebate of up to 8% of the National Insurance contributions associated with our Innovation work – funding which is recycled directly back to further innovation work. It would be worth Ofwat considering how any new such body could also obtain such rebates, and so increase the impact and funding available for innovation in the water sector.

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?

At Dwr Cymru Welsh Water we have developed and shared with the UKRI and academic partners our detailed new strategy for innovation and the 18 individual 'Journey Plans'

https://www.dwrcymru.com/en/Innovation.aspx on which we have to focus / prioritise our innovation investment over the next 30 years. This has been well received by UKRI and Universities with whom we have been meeting to discuss how best to work together to deliver our research agenda in particular. We do not believe a detailed sector wide Innovation Strategy would add any value to this as the needs of companies are generally quite specific and a function of legacy, geography and climate. To add to this, here in Wales we also work under a different legislative framework which sets out different priorities to those in England.

Any strategy would need therefore to be very high level, and focus on those areas of common interest such as leakage, the need to develop better and cheaper monitoring systems, or indeed some of the water quality control at source issues arising from upland water sources. These could be collated and used to help prioritise investment and/or provide a focus for the marketplace.

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?

Many disruptive innovations require changes to regulations to be made in order for the innovation to be successfully implemented. In some cases policies for other sectors such as agriculture need to be changed as well. By way of example, nutrient trading has been trialled by Wessex Water, but to fully realise the potential of this approach, new regulatory arrangements need to be set out and agreed for the way land is managed, so that market-based ecosystem services can be developed and then implemented for the benefit of both land managers and customers.

Brexit has in recent times diverted regulatory resources away from such changes and slowed down progress. Funding to enable and sponsor such regulatory change, particularly where regulators are resource constrained, are at least as important as technological advances themselves in driving value for the sector.