Discover Innovation Opportunities

Webinar Transcript

02/02/2023

Key:

CH = Caecilie Hougaard Pedersen
CP = Carly Perry
BH = Ben Hatfield-Wright
SB = Shaunna Berendsen
KB = Kieran Brocklebank

CH: Okay, I think we will slowly get started just while everybody else is still joining, but welcome, everyone. Welcome back, for anyone who is returning, but also, welcome to anybody who's joining us for the first time. We are really excited to have you all back for more insights into the water sector and how you can enter and support the Water Discovery Challenge. Today we are going to focus on all of the innovation opportunities that are within the water sector, so feel free to introduce yourself, where you're joining from, your organisation in the chat, so that we can all get to know each other. I also, just want to welcome our speakers, see if we can get the right slides on. Thanks to all of our speakers for being here today. I'll give you all a little minute to introduce yourselves So, that the audience can get to know you, starting with myself. I am Caecilie and I am from Challenge Works. Challenge Works is the delivery partner for Ofwat's Innovation Fund, and I'm leading on the delivery of the Discovery Challenge. So, Challenge Works has been supporting the aims of the fund to grow the water sector's capacity to innovate, and we've been delivering the challenges for the fund since they launched in 2020. I will hand over to Carly.

CP: Good afternoon, everyone. Carly Perry, Managing Director of Spring Innovation. I've been in the water sector for 15 years now, working across strategy, regulation, innovation, really passionate about collaboration, and Spring brings collaboration and innovation together. Lovely to see you all here, lovely to see you all here, lovely to see So, many people eager in hearing about our innovation opportunity areas in the sector, and really refreshing to see So, many new names in the attendee list as well. Ben, I'll hand over to you.

BH: Thank you, Carly. My name's Ben Hatfield-Wright. I'm the Programme Manager at Spring. My background is 18 years in the water industry, formerly working for Anglian Water. I worked in many different areas across the industry, from customer service into various different projects, and central operations in the OMC, and then predominantly in water recycling. Also, like Carly, I'm very passionate about innovation. I absolutely love working in this sector. I want to see it succeed and push forward, and like Carly,

I'm very excited to see you all today, and thanks for joining. And I'll hand over to Shaunna.

SB: Hi, everyone. Shaunna Bernsen from Anglian Water. So, I am the Chief Innovation Officer for Anglian. I also, worked alongside Carly in helping to establish Spring for the benefit of the UK water sector, and I'm really looking forward to hearing some of your questions, and I'm also, really looking forward to seeing what comes out of the Water Discovery Challenge for the benefit of our society, environment and customers. Thank you.

KB: So, I'm Kieran Brocklebank from the Innovation Team here at United Utilities. We're the northwest of England water and wastewater company serving 7 million customers. My career background is, I'm a lifer in the water sector, so working in supply chain and commercial roles, in sustainability, corporate responsibility roles, and for the last few years, working in the innovation team here at United Utilities. Like all the water companies in the UK water sector, we've been helping over the years to create and to tap into the Ofwat Innovation Fund and the competitions, and really, really excited, like all my fellow colleagues on this call, and all of the water companies, we're really excited to see what comes from these opportunities that we're creating. We're hoping that we get brilliant ideas that we can say yes to, more than we've ever done before. Thank you.

CH: Great. So, thanks to all the speakers. We'll definitely hear more from all of those later on today. So, before we do get properly started, there's just a little bit of housekeeping to cover, so if you're joining for the first time, don't forget that all of the webinars in the series are recorded and they're available on the website for you to watch at a later stage, so if you missed the first few ones, you can follow the link that's been popped into the chat, and you can watch the first ones to catch up. If you've got any issues during the webinar, feel free to use the chat. The team there is ready to help you, and they'll also, be sharing lots of links and materials throughout the presentation. At the end of the webinar, we'll have plenty of time for a live Q&A, so we're using Slido for the Q&A. So, the platform is already live and you can use the QR code on the screen or you can use the link that's been popped into the chat to access the Slido and pop in any question that you might have. You can add questions throughout the presentation or during the Q&A as well, and we'll address them in a first come first basis, and we do hope to get through all of them, but if you do have any unanswered questions at the end of the webinar, please feel free to email us directly and we'll address them that way. If your question is for a particular speaker, you can add that when you ask your question, but otherwise we'll open it up to the full panel. So, without taking up any more time, I'm going to hand over to Carly from Spring to get us kicked off for the day.

BH: I'll go through what we're going to cover today, so hopefully Carly will come back and she will do an introduction to Spring. Carly will also, take you through a high-level view of the Water 2050 Strategy, which is also, available on our website. I will take you through some innovation opportunities, and then at the end of the session we'll be able to go through some questions. And I just want to check whether Carly's back with us.

CP: I'm back. Is it any better?

BH: It sounds it.

CH: Yes, it's perfect now. Thanks, Carly.

CP: Yes, wonderful, the old log out, log back in trick always works *[laughs]*. Alright, so apologies for that, everyone, and thanks, Ben, for stepping in. Okay, so just to speed through and move straight into the content, then, what I wanted to do was start by giving you an introduction to Spring. So, if we can walk through into the next slide, please, so Spring is the innovation centre of excellence for the water sector across the UK and Ireland, and we're here to accelerate innovation and enable collaboration, both within the sector but beyond the water sector, and really importantly for this water discovery challenge, it's about bringing in new entrants, helping them understand the sector, and pointing them towards the innovation areas that we want you to be solving. Spring was created through work that was delivered in 2020 and 2021 to help enable innovation in the sector. It was created through really extensive engagement with the water sector, so water companies, supply chain, regulators. And we've designed a service offering that helps prioritise the innovation areas for innovators to focus on. We create and connect existing processes that allow innovators to submit ideas into the sector. We build collaborations to solve ideas in an efficient way, and we share knowledge from innovators to help accelerate learning across the sector.

So, all of that means we are removing duplication of efforts that are currently happening in the sector. So, there are some brilliant innovation programmes happening regionally, there's fantastic work happening, but we all acknowledge that there are efficiencies that could be made by running some of that as a sector-wide initiative. So, some trials are relevant for multiple companies, and we can run those through Spring to make them relevant for multiple companies. We've got a few tools that we are using to help achieve our goals, and there's two main service offerings that we currently have. One is the Spring Accelerator. That is an end-to-end service offering that goes from ideation through to adoption. So, we will put calls for innovation out, relating to the water innovation strategy, that I'll walk you through shortly, and then what we'll do is build collaborative projects with the water companies So, that they can then mobilise and adopt those innovations. The second of our service offerings is Knowledge Transfer, so what we do is take existing innovation projects and share the insights of those across the sector So, that we can create an accelerated learning environment. So, on the Spring platform, there is a knowledge library that has use cases that are open to all, so everybody can learn from those and see what's happening in the sector, and we're gradually building on that.

We also, have showcases that we run, so those are two-hour deep dives into innovation projects to share the insights. So, if you follow us on LinkedIn or sign up to our distribution lists, then you'll always find out more about those. But let's get into the real crux of what we want to talk about today, and that's the water innovation strategy and the priority innovation areas for you, the innovators, to be solving. So, if we can click through to the next slide, please? Wonderful, and if you'd go one more for me, please. Thank you very much. So, the Water Innovation Strategy 2050 is a document that was created in 2020, and it was a piece of work lead by Arup and a large group of stakeholders. So, each water company across the UK and Ireland was involved in creating this document. You had innovation experts, you had subject matter experts, the supply chain were also, involved in creating it as well. So, there's been a huge effort that has gone into this, the ambitions that you see in this document. We're all really aware that the water sector is an essential ingredient to the environment, and what we want is to be able to solve ambitions across the whole water cycle, and I'll come on to that in a bit. But the first step in change is about understanding your challenges and

creating an ambition for the future.

So, what we've got in the Water Innovation Strategy is seven themes. So, those seven themes are providing the services society needs and expects; providing clean water for all; protecting and enhancing natural systems; delivering resilient infrastructure systems; achieving net zero carbon; taking a whole-life approach to responsible consumption and production, and then enabling diverse future-ready people and partnership working. Now, the document that sits behind this has much more detail in it, and it's hosted on the Spring website, and I would recommend to any innovator that if you want to know the innovation areas that the water sector wants you to be solving, please go and look at this document. Each of these themes has an ambition for 2050 underneath it, so it has a high-level vision of what the whole sector wants to be achieving. Underneath those ambitions are short-, medium- and long-term objectives that we want to be able to hit. So, I'm going to give you just a couple of those to try and bring it to life, but I would recommend going and having a look at the document yourself. So, if we take theme one, providing the services society needs, expects and values as an example, the ambition for 2050 is that customers have trust and confidence in the service that the water sector provides.

Water services are accessible, affordable for all, protect vulnerable customers, and lead to zero customers in water poverty by 2030. Service provision is transparent, and customers and communities work with water companies to improve service and decision making. So, that's the high-level vision for 2050, but how do we take that and put it into more practical terms for people to target innovation at? So, as I said, there's short-, medium- and long-term ambitions underneath each, so again, on that theme if we take that as an example, there's a short-term ambition that our communications reflect the needs of our customers and are efficient and effective. There's a medium-term ambition that all customers have excellent and consistent customer experience on top of delivering our regulatory service requirements. There's a long-term ambition that customers are part of the journey. Co-creating with customers is a routine part of all work that happens across the sector. I'll just give one more as an example before we move on. If we look at theme three which is protecting and enhancing natural systems, the 205 ambition is that wastewater services are environmentally sustainable, we work with customers to halve freshwater extractions, leaving more water in the environment.

Water companies work in collaboration with customers and communities to have zero uncontrolled discharges from sewers, emerging contaminants and lead are dealt with effectively, causing zero harm for people and the environment. We have developed, protected and enhanced our natural environment. We have used natural solutions to improve our resilience to current and future challenges. So, that's the long-term ambition for 2050 but then that can be broken down again. There's the short-term ambition that wastewater treatment across the sector effectively balance headroom, cost and risk, with environmental outcomes. There's a medium-term ambition that wastewater treatment is effective and cost efficient across the network, and a long-term ambition that there is no deterioration in water bodies, and net positive natural and social capital is achieved each year. So, as you can see, there's a lot of detail underneath each of these. There are hundreds of ambitions in this document, and we would really recommend taking a look at it. And it's going to actually give you a view of some prioritised opportunity areas that we would like to see submissions come into the Water Discovery Challenge, solving some of the opportunity areas that we're going to share with you.

So, if we could skip through to the next slide, please, I'm just going to give you a little bit move context around the Water Innovation Strategy. So, when it was created it had vision and principles within it. It is also, – just checking that you can still hear me?

BH: Yes, Carly.

CP: Yes, okay. I think I can't see the slides anymore. I'm not sure –

CH: They are just coming back now, the slides.

CP: Wonderful. Brilliant, thank you. So, the Water Innovation Strategy, as I said, it was built with all of the UK and Ireland water companies, so a lot of context and input has gone into it. There are visions to be more collaborative when working with innovation. There's a vision to be more open around innovation, and Caecilie, if you could flick straight through to the next slide for me, that would be wonderful, thank you. Brilliant. I hope that's coming back for everyone, so thank you Caecilie, for fixing that. So, the principles that are laid out within there make sure that we're looking at data driven innovation, open innovation, collaborative innovation, and they make sure that we're looking at environmentally led social and economic purpose as well. So, really just to give you a little bit more context around those principles, and I've been through the innovation areas already. If we could flick through to the next slide, please? Thank you. Now, if anybody was at the webinar that happened on Tuesday, you would've heard Bart from Arup talk through the water cycle, and what we've done with the Water Innovation Strategy, what the sector has done, is built these themes against that water cycle. So, what you can actually see is that the innovation themes within the strategy map across.

So, they map across to catchment, management, to water treatment and networks, to domestic and industrial work, to wastewater networks. So, each of those innovation themes are part of the cycle, and the link to that webinar on Tuesday is in the chat if anybody else wants to go back and refresh themselves from that. If we can flick through to the next slide, please? Thank you. So, just the final bit from me before I hand over to Ben. What I wanted to do was really start relating this to the Water Discovery Challenge, and the innovation opportunity areas that we would like to share with you today. So, each of the seven Water Innovation Strategy themes all relate to the four themes that are promoted from the Water Discovery Challenge, so each of them filters down. So, we've got four themes that we're going to look at: responding and adapting to climate change, including achieving the sector ambitions of net zero carbon, zero waste and zero leakage. Protecting and enhancing the environment and natural systems to protect current and future customers from the impacts of extreme weather and pollution. Then we've got delivering long term operational resilience and understanding infrastructure risks to customers and the environment, finding solutions to mitigate these in sustainable and efficient ways.

And then we've got testing new ways of conducting core activities to deliver the services customers and society need, expect and value both now and in the future. So, those are the four themes that we're now going to walk you through some priority innovation opportunity areas that relate to those themes. So, I'm going to hand over to Ben this point.

BH: Hello again, everyone. My name's Ben, from Spring. I'm going to take you through the

four innovation opportunity areas that Carly was talking to you about, and So, if I could have the next slide, please? So, this slide is about responding and adapting to climate change. So, the water industry provides an essential service to our customers, and customers expect to turn the tap on and receive clean, safe drinking water, and also, have their used water taken away. But this takes an enormous amount of energy to be able to pump water from extraction all the way through to having it cleaned and put back into the environment. At the moment, the water industry is heavily dependent on grid power. It does have some backup supplies at some key sites, but you've also, seen in society, as everyone's moving to that net zero challenge, that a lot of people are moving away from dual fuel to single fuel supplies in their home and in their cars, so there's more pressure being put onto the national grid to be able to provide the energy, and we as an industry are reliant on that grid to be able to provide the services to our customers. The nirvana for most companies would be the ability to work in a planned way, having reliable equipment that needs less energy to operate, and lead to less environmental impact, but due to the economics, that's a difficult task.

Due to the age and the pressure of the network, you'll find that there's a large reactive nature to water companies, and they do have large teams that work reactively to restore service, predominantly relying on fossil fuelled vehicles. So, we're looking for solutions in this area. For example, on the slide you can see reduced current carbon emissions or help avoid carbon intensive solutions. So, taking what I've just said in the round, it's looking at the future of the water industry, and how can we operate this Goliath power-hungry industry in the future on reduced energy coming from more renewable sources. Encourage water conservation and grey water use, so this is influencing new housebuilders and current properties to trap grey water to be used in, say, washing processes to reduce the pull on fresh, potable water. Improve access to low-cost methods for monitoring, modelling and treating water, and helping water companies make effective, data-driven investment decisions So, they can basically hone their investment decisions and make sure that they're backing the right waters. So, next slide, please? So, the next slide is about protecting and enhancing the environment, and this is where we need a balanced approach. For instance, water saving is a great idea, but the sewers are designed to self-cleanse and we need to receive a certain amount of flow to keep them clean.

Reducing the flow can lead to silt build up within the sewers, and that can lead to blockages, flooding and pollution. So, there's always a double-edged sword, something to look at when we're looking at innovations is, what's the downstream effect of that innovation. We need some joined-up thinking. The water companies are not custodians of all the water, and certainly are not responsible for 100% of the river pollutions we see every year. Other parties need to help us, for example, directed discharge from industry, agriculture and highways. We certainly need to step up to the plate in this area, but we also need to shine a light and get others to do the right thing to protect the environment. Another third party we need to think about is mother nature, as climate changes. So, I know it's not an excuse, but sometimes mother nature drops rain in the wrong place and at the wrong intensity, which our networks can't handle. So, with modifications to the river catchments over the years, rainfall is reaching rivers and streams much quicker than it did before, so we need to work with partners along river catchments to try and slow that egress of the water down to the rivers and streams. What we're looking at in this area is improved engagement with customers around the role that they can play in helping deliver environmental outcomes within their community and their area.

Improve access to low-cost methods for monitoring, modelling and treating waste, and then assisting in implementing a multi-capital holistic approach to decision making. So, that might be wider than the actual water company, and it will bring in other stakeholders such as local councils and landowners, and riparian owners. Next slide, please? This slide is about long-term operational resilience. As mentioned in the first slides, we have an aging network and aging assets heavily dependent on the grid to energise our equipment, and this is something we need to think about. We need to make sure that we can provide our services in the worst of circumstances, and we need to be aiming for that level of resilience. I would say for most customers receive the service that they pay for, but sadly the failures are the things that the customers remember, not the fact that the majority of the time they are receiving a good service. So, looking at the solutions, and the examples we've got on this slide, we're looking for: improve the effectiveness and efficiency of incident management, the maintenance and infrastructure investment, help further development with partnership approaches to catchment management, and help water companies make effective data driven operational decisions. Next slide, please?

This final slide is looking at the new ways of conducting core activities customers and society need, expect and value. So, this is a really tough one for the water industry. They have to be both invisible and visible at the same time. So, prior to 2020, Ofwat introduced a measurement called SIM, which stood for the Service Incentive Mechanism, and this was a competition between water companies to provide the best possible service. SIM was based upon jobs raised from reactive issues, and since 2020, Ofwat have introduced CMEX, which is Customer Measurement of Experience. This aims to measure customer satisfaction from the reactive work that we receive, but also, it's measuring the reputation of the company within the community. So, it's a difficult one, to provide a silent service that has no negative impact on your customers, and promote your brand. It's a tough one to think about because customers expect water. To them it's a basic right, and so, the aim here is to reducing negative impact the industries have in our local communities, and heavily engage with the communities about positive actions. There will also, be a drive to provide better value for our customers, driven by economic influences. We could do this by reducing operational expenditure, by slowly making the process more efficient and reducing the reactive nature of our network.

We can use this work positively to engage the community and use innovative opportunities to enhance the company's reputation. Some of the solutions that we're looking for her is helping with the development and understanding of the true value or water amongst our customers, help create national benchmarks for data sharing and collaboration, and improve customer engagement processes So, they feel truly part of the water cycle, and enable cross utility partnerships. The key to success here is, through innovation, we can bring the community and the water industry closer together, working in partnership to enhance their local environment, and bring prosperity to all. Thank you for listening, and I'll hand back to Carly.

CP: Wonderful. Thank you, Ben, for walking us through those opportunity areas. So, I just wanted to wrap up with a little bit of some final thinking about Spring before we introduce our panel members. So, a reminder, Spring is the water sector innovation centre of excellence across the UK and Ireland and we're here to facilitate collaboration. So, we're doing that in a few support ways. So, we're communicating the sector's priority innovation areas like you've seen today. We're facilitating collaborative innovation projects and we're helping to share and scale effective solutions. In terms of

our support with the Water Discovery Challenge, we're here to support in any way that we can, help to facilitate, connect, build collaborations. Our service offerings like knowledge transfer and single trials will be available to people coming through the process. So, we're really looking forward to seeing the ideas come in, and how they can help to solve the ambitions that we have been sharing with you. So, at this point, I think it would be great if we could bring in the panel members. Just a final thought from me before we open up for questions, is that we've got a panel here of innovation managers and innovation leads and Spring colleagues. If there are any technical questions about the opportunity areas that you've seen today, we will take those offline, take them to technical experts, and we'll get back to you.

So, if there's anything that we're unable to answer, we will loop back around to you. So, with that in mind, Caecilie, I'll hand back over to you to facilitate the panel, please.

CH: Great. Thank you very much. Thanks, Ben and Carly, I think that was super interesting and a really good overview of the 2050 strategy and how it links into the innovation themes from the fund. So, I think we'll open up the panel with a question, Shaunna, for you and for Kieran. Maybe Shaunna, if you want to jump in first, but there's a question that popped in around what your advice is to innovators who are at the beginning of their journey, and is looking either to solve a problem, or looking for a problem to solve or validate?

SB: Yes, happy to take this one and then kick it to Kieran because I'm sure he has different experience. As Carly alluded to earlier, really making sure that the opportunity that the innovator is providing links to a real-life solution that a water company has, and being quite explicit about that link. Often, I think innovators, because they want the opportunity to work with utilities, try and solve too much, and actually a discrete problem that we can work with is often the best route into a utility. In the interest of avoiding duplication, going through organisations such as Spring will also, help the sector become more joined up, so that's a really great approach. And yes, linking it to the strategy that the utilities worked So, hard in creating is always a good route. Kieran, I'm sure you have some more.

KB: Thank you, Shaunna, that was excellent, thank you. I don't have any conflicting matters. Please may I build on what you've said? So, it's very true, isn't it? We've all got limited resources of funding, of time, people, appetite, capability, so we must focus efforts around really the hot topics, the big things that are really going to make a difference. And that's why we're, the sector, is becoming very opportunity-led, setting these opportunities, making them more public, and allowing you to inspire us, whether that's to tell us exactly what we thought we were waiting for, we just didn't know you existed, or whether it's to give us some absolute new inspiration, fresh eyes. The reason that we really love the opportunity-led method is, otherwise you're sending ideas in to us. It's an idea looking for a problem, and that can mean that we hunt and hunt and hunt and hunt trying to find a way to help your idea. With the limited funding and with the limited resources, clearly we are looking for those things that we can take faster action with. So, with that in mind, why don't we share where you might find those opportunities, and where would you want to connect? So, clearly, of course, we've got the Ofwat innovation competitions, brilliant website, describes all the different competitions, how the funding is allocated, how to make entries, what the criteria are, who you need to partner with. That's a great starting point.

Of course, Carly, Ben, the Spring team, they've already announced a number of opportunities in the past and will continue to do. So, on behalf of the UK water companies all pooling our resources and allowing Spring to facilitate one opportunity challenge process that all of us can take part in. Clearly, of course, there's the UKWIR big questions, brilliant descriptions about what we're looking for, setting out route maps, roadmaps about what types of solutions we are testing and trialling already and which ones we're looking to test and trial with shared funding later, and then of course, jump on social media, things like the Water Action Platform is often good, representing the whole sector, not just the UK, but globally. And the if I build on that even more, so I was staying there at the sector level; well, why don't we now jump to individual water companies? And there's some brilliant ones that you could start with. I personally really like Welsh Water, Severn Trent and Anglian as some really good websites that are describing their specific things that they're looking for, and they provide routes for you to make contact with those companies. Northumbrian Water have their annual festival, of course. It's always good fun, it's always a good way of learning and seeing face to face what are the real problems, how do we get under the skin of them?

And of course, if I selfishly talk about United Utilities, we've got a website that shows our specific opportunities, and we want to hear more ideas and that's why we have our innovation lab programme. We're just about to kickstart our fifth innovation lab programme. So, sector advice, individual water company advice, that would be the best way to start, I think. Thank you.

CH: Great. I think that set the bar high for how to answer the questions in this Q&A. Thanks, Shaunna and Kieran. So, we've got the next one. Carly, I will throw the ball over to you for this one. So, there's a question that popped in around where have you seen the biggest push in innovation since the 2050 strategy was developed?

CP: Yes, great question. So, the strategy was developed and launched in the September of 2020, so reasonable new in terms of an initiative of this size. We have done a bit of work on where the most projects and initiatives and innovation calls are happening, and that probably unsurprisingly is on resilient infrastructure themes, so that's where asset management leakage, all of that stuff, fits within that theme, so I don't think there's any surprises around that. It's probably worth pointing out where the least amount is happening as well, and that's around enabling diverse future ready people and partnerships, so that's where we're seeing the least activity, so there's gaps there. It's worth also, noting that we are starting to have conversations about how we measure what is happening against this Water Innovation Strategy, so that's a bit of a 'watch this space', where Spring, the water companies, other stakeholders, will be looking at how we keep this document alive, refreshed, and monitoring progress against it.

CH: Great. Thank you very much, Carly. We've got the next question coming in, staying a little bit on the 2050 ambition, so I'll throw this one to you first, Kieran, and then we can open it up for the panel afterwards as well. So, there's a question that popped in around what the connection is between the 2050 ambition and the discovery challenge themes? Obviously, the Discovery Challenge themes are the overall themes from the Innovation Fund. They're not specific to this challenge alone, but maybe I'll throw that one to you first, and then the rest of the panel can jump in.

KB: Thank you. I think I'm going to stay an answer at quite a high level, really, for this one. clearly, there's no point setting opportunity – facilitating these opportunities for

intellectual curiosity of just stimulation. We need routes to adoption, usually by the water companies, so we're really pleased we can see a golden thread from the Ofwat themes to the Water 2050 strategy all the way through to how the competitions encourage and stimulate fresh ideas. And So, there is a direct link between them all, and of course there's links to other opportunities like the strategic development goals, of course. But what I would say is, there's definite link. I think the audience really should take some time away from this webinar and read the strategy. It was developed with lots and lots of support from lots of different places and people, a diverse range of people, and it really is a high-quality document that will expand on all of that, and it's complementary to the Ofwat themes, and of course, the Discovery or the other competitions are perfect in stimulating and nurturing those new ideas.

CH: Yes, I can support everything that you've just said there, Kieran, as well, and I think that, like mentioned in the Discovery Challenge directly, the themes are the overall themes for the whole Innovation Fund, they're not just for Discovery Challenge. So, any challenge that's being run through the Innovation Fund projects all have to align with that and they all align with the strategy as well. And also, I guess worth mentioning, I think Carly was mentioning that the strategy was developed in collaboration with all of the water companies and led by Arup, and Arup is also, a big part of our delivery team who delivers the Innovation Fund, and Discovery is led with massive support from the water companies as well, who are supporting the selection process, and there's a sector-led mentoring programme as well. So, I think they're all interlinked to the innovation themes. They all tie very nicely together. I'll happily open it up to the panel if there's any additional comments of input on that one.

SB: Yes, just a quick follow up on that, and to build on one of the other questions that've been asked in the audience, there are a list of projects that have already been given funding by Ofwat, so that's a really great starting point to see how the themes work in conjunction with the sector strategy themes as well. And it gives an opportunity to give a good idea of what a successful bid looks like, and the updates on that project as well.

CH: Yes, I think that links very nicely into the next questions. Someone's asked if there's any examples of knowledge transfer that has worked, and I guess we can open that one up to also, any examples of projects that have been successful within the innovation themes. Shall I ping that ball over to you, Carly, first, and then we can open it up for Shaunna and Kieran as well?

CP: Brilliant, thank you. Yes, I think here from Spring's perspective, we've got some specific examples that we can give. So, from the showcases that we've been running, we've been tracking the knowledge and what's happening with it through its journey. So, one of the first showcases we did was with SES Water, showcasing some leakage innovation that they had. What we noticed through social media is, Severn Trent's leakage manager was at that showcase and was talking about how being at that showcase is going to accelerate innovation within Severn Trent. So, we will follow that journey to see how that knowledge is implemented. We've also had an example of SES and Affinity Water now collaborating on innovation after a knowledge transfer event. So, these are these really practical examples that we can follow and see how the insights being shared actually helps to accelerate others. And that obviously also, applies for any of the Ofwat funded projects as well, so we'll be doing the same with those. But I'll hand over to Shaunna and Kieran. Kieran, I can see that you've got your hand up.

KB: I just wanted to build on that, really, and just to be realistic, I suppose. It's not realistic that we hear about a water company who, for many, many years has been entrenched in working in a particular way, using a particular technology or a particular business process. The knowledge sharing doesn't usually result in us downing tools on what we're doing and immediately switch to a brand-new idea. Sometimes these ideas just need to fester a little. We need to reflect. We need to work out how on earth would we change from what we're doing today to the new idea. And of course, from United Utilities' perspective, and I know this is true for other water companies, we're hearing about ideas through the knowledge transfers, through Spring, or just the fact that we're talking more and more collaboratively across the sector, we're hearing about those things, and it's actually going to help us with our future business planning. So, it might not be an immediate change next week, but it starts to change how we hardwire these new ideas into our future ways of working, and that is really around our five-year funding cycle. That's the best time for us to capitalise on those things. Thank you.

CH: And I think just to build a little bit on that question potentially, there's a little add-on to that one as well around the recent successful innovation projects that we have seen across the sector. Is there any insights to share as to why they have been successful, insights into why something might be successful and why something fails? Like, we all know that in innovation, there's just as many things that are tried and tested, and maybe not pushed forward, as there are successful one, so it'd be good to maybe get some insights into why the ones that worked have worked. I'll open it up to the panel and see who jumps on that one. Carly?

CP: Sorry, Kieran. Just one quick thought from me on that. There's a theme coming out from the use cases that are coming on the Spring platform and the showcases that we're doing, and it links into what Kieran was saying about this is a long game as well, because to actually get to the adoption of an innovation, that's quite a journey from the idea through to the adoption. But what we're hearing a lot of around success is, it's how that change management is managed when it comes to adoption. So, it's about how it's rolled out within the business, it's about how people are trained, it's about new processes, systems that are put into place around the adoption side of things. And it's great to do the trial upfront, it's great to get good results from that, but the investment, time, resources, is still needed when it comes to that adoption piece. So, we're really trying to pull out lessons around that when we're sharing knowledge. But I can see Kieran's got his hand up, and I'm sure that Shaunna probably has views on this as well.

KB: Sure. I just wanted to, in response to the question, what are the characteristics of why this is working? Why is this openness and sharing and collaboration, why is this more successful? I mean, so far, the competitions that've been run so far, there's a significant investment been awarded, £60 odd million, almost 40 projects, and this is from a standing start just two years ago, where the people who are today collaborating on these projects were never in these marriages before, and we are learning about each other as much as we are about new ideas. And trusting each other, knowing another partner, liking them enough to work with them, and then ultimately to trust them, is – this is about people, not process or funding. And that is a bit of a classic struggle, really, in that we have to put lots of effort into that, and that is going to take a little bit of time. Fortunately, we're on a fast and steep learning curve, so the more and more that the water companies invite new partners to help – I mean, from United Utilities perspectives, the projects that we're attached to, almost three quarters of the people that we're working with, we've never worked with them ever before in any formal

capacity. So, this is exciting, first of all. We're all excited, we're all kind of nervous, and why is it that this maybe is going to help us be a bit more successful?

Because we're doing it under the guise of Ofwat steering us. they're allowing us some flexibility to try new things, and maybe to fail fast and to learn fast, and to succeed fast. And I think that's really helpful. They've stimulated all these new projects, and the Discovery Challenge is another way that we could get even more going, and I think we should grasp this opportunity, and I hope all the audience do, too.

CH: I like that, so fail fast, learn fast, succeed fast. I think that's a good quote from today's webinar. Quickly, quickly jumping onto the next one, so Ben, I'm going to throw this one over to you. In terms of low-cost monitoring, what kind of parameters are you mainly interested in?

BH: Okay, I can give you a practical, real-world example. So, one of the major projects that I worked on at my former employer was a project called *[s.l. Flusher 00:51:15]* Treatment. So, where this came from was, at the beginning of this AMP period, which is a five-year financial period that Ofwat give us, we had a challenge to reduce pollutions and internal/external flooding. The problem is, when you've got a network that's 70,000 kilometres long, you've got 6,000 pumping stations and you've got 6.5 million people using your service every single day, it's very hard to keep your eyes on the whole network because you haven't got eyes on the whole network, so how do you find where your problems are? So, we started out the process by mapping where our previous issues had been in the previous five years, to give us a bit of a heatmap of where the risks would lie across the network, and then we started targeting those areas. And that helped us decide where we were going to invest and start to clean. So, Flusher Treatment was all about cleaning the sewerage system and restoring the capacity of the sewer network. So, we went down in Essex and we selected an area which was about 50 kilometres long. We cleaned the area. We pulled out 460 tons of waste out of the sewerage system, so the capacity had been massively reduced.

We serviced – we did 26 repairs, serviced the network, serviced the pumping station and the rising main up towards the treatment works. After that, what we wanted to do was then look at how the system degraded afterwards. So, the kinds of sensors and the parameters we were looking at putting in there were temperature, flow and level in the sewers. So, basically by temperature, if there's a drop in temperature, we could detect water ingress coming in through cracks in the sewer. If there was level detection, we could detect if a blockage had formed, and also, with the flow rate as well, we could see if the flow rate had sped up or slowed down. So, we basically put a grid of sensors across the area, so that we could monitor, the effort that we'd put in, into that system, was then monitored going forward So, that we could detect if a problem was going to happen before it had an effect on the customer or the environment. So, the one thing we didn't want to do was to have repeat internal or external floodings, and we certainly want to protect the environment from overflows from the network. Since we did Flusher Treatment in this one particular area, this area was really bad with hydraulic overload, and since we went in and cleaned it and put the sensors in, we haven't had a single internal, external or pollution from this area.

So, the sensors are really an integral part of a whole package of works that you can do on a sewerage system. On the water side, I know that they've been looking at pressure monitoring. Because you're dealing with a pressurised system, they're looking for

fluctuations in pressure especially on the fresh water supply, to detect where possible bursts might occur. So, I hope that gives you a flavour of some of the parameters that we'll be looking at across our network, which dovetail into other projects that we've been running to try and protect the environment.

CH: Great, thanks So, much, Ben. I think we might keep it with you for a little bit now here. So, there's another question that comes in, what's the current status of the availability to monitor water quality in the UK rivers, canals, waterways? So, I'll throw that ball to you first.

BH: Sorry, was that back to me?

CH: That was back to you, yes.

BH: So, we have regulatory sensors that we have on all of our treatment works for our effluent leaving the works, so we have to measure what the water quality is, going back into the environment. I think things that we need to think about for the future, and there are some really good ideas that I saw in Germany this year, was putting in more river sensors So, that you could detect where the pollutant was coming from. So, rather than just singling out the water industry, you could look up and down water systems to see whether that was coming from a highway surface water gulley, or whether that was coming from agriculture, or whether it was coming from an industry that was pumping straight into the river. So, there is an appetite to do that. And certainly, sitting on the committee for the Environment Bill last year and the year before, there was a big driver from Government that we increase the amount of sensors across our river networks, so that we could clearly define where these pollutants were coming from and then resolve the issue. So, I see in the future, also, backed by government and the environment, we'd like to see a growth in this area.

CH: Great, thank you So, much. So, very conscious of time. There are still quite a few questions for us to get through, so just a reminder, obviously, that if there are any questions at the end of this Q&A that you don't have answers to, do reach out via email and we can address them directly there because they are coming in fast and furious. So, next one, innovations being developed in other competitions, are they being shared to avoid duplication or to encourage complementarity? I can start that one and then probably also, quickly ping it across to you, Carly. Any challenges or competitions that we run in terms of the Ofwat Innovation Fund and Challenge Works, we've got all of the winning projects from past challenges and competitions publicly posted on the website, where you can see the projects. Also, Ofwat is regularly publicising information on the progress of these projects, and I also, know that obviously with Carly and the knowledge share that is taking place throughout Spring, that's also, a big part of what Spring can support with. In terms of the Discovery Challenge, we're not specifically saying that if you are submitting an entry, that it's something that other people are currently trying as well, that that makes you ineligible.

It's not really about only one project doing one thing and everybody else doing something else. We can all kind of be doing very similar projects, or all rowing in the same direction, and then there can be partnerships developing, or there can be learnings from one project to another. So, it is definitely, knowledge is out there for you to look at, for you to get up to date with what has happened across the last few years, before you look at your entry for Discovery. And I think, Carly, I'll let you have the last

word on that question as well.

CP Brilliant, thank you. So, just a very quick thought from me. Any innovations coming through the Spring model will be transparent and open about what's being trialled with us. We're just mobilising our first three trials, so in the next couple of months, expect more information about what those actually look like. They will automatically go through a knowledge transfer path as well, so we will share more details as they mature.

CH: Great. I know that we've got one minute left, and I'm going to skip a little bit down the questions because I think there is a question that's actually quite relevant just to cover before we close off. A question has come in saying if you are eligible to enter the Ofwat competition, if you are in contact with Spring? Yes, of course you're eligible. You are eligible to enter the Water Discovery Challenge if you are incorporated in the UK and if you hold a UK business bank account, if you are collaborating or getting knowledge through Spring or working with Spring, you're absolutely still eligible. The only ones who are not eligible is the official list of regional water, and water and wastewater companies across England and wales. So, you can see that, if you go on the website, you can see the full link, that unfortunately you can't be in partnership with a water company for the Discovery Challenge because, again, the water companies are heavily involved in the support of the challenge, and the selection process, and also, in the mentoring programme. So, they are not eligible, but innovators outside the sector, very, very welcome. If you are working with Spring, all the better, it means you're getting lots of knowledge of the sector ready ahead of your entry, so I just thought that was a good one to cover before we close off this webinar.

Great, it is one o' clock, so we have come to an end for today. Any questions that haven't been answered, feel free to email them through. There's also, a big Frequently Asked Questions on the website that you can go and check out if you've got any of your questions, might be able to be answered there. Carly, Ben, Kieran, Shaunna, thank you So, much for joining us today. If you just want to unmute, and you can say your last words to the audience.

CP: Just a big thank you for listening and asking questions, from me, and we look forward to seeing entries come in.

BH: Thank you for your contributions today, from your questions, and we look forward to answering those for you.

SB: Thanks, everyone, again, to echo, I'm really looking forward to seeing what comes out of all of these challenges and competitions, and working with fellow water colleagues like Kieran.

KB: I agree. Thank you.

CH: Great, thank you so much. We shall see all the audience hopefully next week for our next webinar.