Innovation in Water Challenge Partnership Brokerage Session 4

Recorded on 28 January 2021

# Transcript

00:03

Afternoon, everybody, and welcome to the session today. Thank you very much for joining us. This is the third of the brokerage sessions. My name is Caroline Wadsworth. And I am from Isle utilities. I'm here today representing the delivery Partnership, which is made up of Nestor, Arab, Isle and of course, our partner Ofwat. And just before we get going, just like to remind everybody that this session is being recorded, and we will be making the recording available on both websites. And we will be distributing it to the water companies and the NAVs within England and Wales. So before I go into any more detail at this point, I'd like to hand over to my colleague Seemab up and offer up for short introduction. Over to Seemab. Thank you.

Thank you, Caroline. And thank you everyone for joining us today, we are very excited to have opened up our first competition, the Innovation in Water Challenge. So it's open for entries, it opened on the 18th of January. And it's good to see this sector active actively explore new partnerships. I'd like to say a big thank you to everyone for attending. And you know, for preparing all your presentations, it's been great to see the level of interest. And I really hope you enjoyed the session today. And conscious it's a quite a packed agenda. So I'm going to pass over to and Caroline from Isle, who has helped organize these sessions, and will be chairing the rest of the session today. Thank you.

01:26

So that's, that's great. Thank you Seemab. And so as Seemab says, We have got a really packed agenda, and I'll come to that in a second. But just as a reminder, we are sticking very strictly to the four minutes that's been allocated to everybody. And if you can all keep your cameras and mics off during the session until you're asked to turn them on in order for you to speak. At the 30 second point, so when you've got 30 seconds left of your time, I will turn my camera back on as an indication that you need to start to wrap up. And if we can just move to the next slide, please.

02:04

So hopefully you've all seen this is an overview of the program and the running order. And we will go through it obviously, as it shows unless one of the presenters isn't online.

02:17

But yeah, it should be very exciting session, I think there's lots of really interesting solutions to be put forward. Next slide, please.

02:26

So just to give you some background for those of you that may have missed some of the other more informative sessions, giving the information. And as I've already mentioned, we are sticking very strictly to the four minute presentation slots. And I will give you that notice of turning my camera back on. And we are having some clarification questions which will be the same for everybody in this case, because as you're all aware, we don't have a live audience today. But hopefully those and the content of your presentation will provide enough information to encourage the world's companies to make contact and to explore those partnership opportunities. Next slide, please.

03:09

So as Seemab says, we're really excited that offer has launched two innovation competitions, which is all together made up a 200 million pound Innovation Fund, the first of which is the innovation in water challenge, which I was launched on the 18th of January. The second is a larger fund, which more details will be released on this and spring 2020. That is the main competition. The funding we're dealing with today has a pot of around 2 million.

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And the aim of it is to help grow the capacity to innovate within the sector and to enable the sector as a whole to better meet the evolving needs of the customers society and the environment. Next slide, please.

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So just some details and information on the process itself. As we've said the first round of this process has opened, it isn't the only ‘bite at the cherry’. A second round will be opening later this year and around November. But for this particular round, there's a six week entry process and the entry period closes on the 26th of February at 12 noon. We will then be convening a judging panel towards the end of March and all winners will be informed by early April. So it's a short turnaround timeline to enable people to get going as quickly as possible. Next slide, please.

04:39

So the key rule that's really pertinent for everybody on the line today is to make sure that you understand that the lead applicant entering into this process must be one of the water companies or NAVs the new entrant from within England and Wales, with either yourself or yourself and others as partners

05:00

In that mix. At this point, the partner themselves can't and single handedly. Next slide, please.

05:11

So I think that's enough from my side. And I would really, really pleased to have everybody here. So at this point, I'll ask

05:22

Joao, apologies if I've said your name incorrectly, and hand the stage over to yourself, and you have four minutes to give us a quick run through and just please ask the next slide when you're ready for the size to move on. Thank you.

Thank you, Caroline, it is in fact, Joao. So you said it. Well. Thank you. Hi, everyone. My name is Joao from Wakaru and I am very thankful for this opportunity to get your attention and careful consideration the Water Wise System to help reduce leakage in England and Wales. This is just a part of Water Wise Can we go to the next slide please?

06:05

Well supported in artificial intelligence transforms data into knowledge generating events and identifying the abnormal ones giving the water company an integrated vision of the urban water cycle from abstraction up to distribution and down to the treated water wasted usage either reuse or delivering it to the environment. Next slide please.

06:30

with water why system, water companies will successfully overcome to a five off what challenges. One responding and adapting to climate change including out to meet the sector's ambition of net zero emissions by monitoring energy consumptions and equipment best operation, monitoring the whole urban water cycle, that Sorry, can we go to the previous one?

06:56

Okay, and understanding long term operational resilience and infrastructure risks to customers in the environment, finding solutions to mitigate these in sustainable and efficient ways. And how? Well by monitoring the whole water urban cycle, identifying abnormal events with predictive models and reduce leakage non revenue, water and extending assets lifetime. We could go to the next one now, please.

07:25

But it's not a single solution as most of the competition of competitors, but the complete offering gives water companys 360 degrees view of the wall urban water cycle. It has probably the broader scope of most innovative solutions for water networks management's addressing the water energy Nexus, potable water, wastewater, rainwater, flow, pressure, water quality, energy consumption, renewable energies, event driven artificial intelligence,

08:00

hybrid implementation, real time inferences and predictions better than our words wizard. Let's go to the next one.

08:10

Well, the impact evaluation of water wise system is monitoring continuously reducing wastage reducing leakage and non revenue water. Next slide please.

08:24

Nothing like some images better than 1000 words. These are some screenshots from the waterway system. So, you can get monitoring by a general analytical information on leakage bursts. Whatever the key performance indicator, you have chosen to do it, you also get some operational analogies from the wall urban water cycle to the water supply system to the DMA. And you can compare different DMAs you get also the event analysis. This is the most government you can find the describe of solutions either it is an abnormal consumption events,

09:08

abnormal energy consumption events, water quality events burst event, leakage event, whatever. you get to water balance and with the water balance also, the KPI performance indicators. So this is very important when we are talking as we've heard this morning by Anglian water with Polly regulate the sector as it is in England and Wales. And of course, as we were saying, different differentiation. Very important for this digital solution, the energy consumption so the water energy Nexus, next slide, please.

09:44

Well, we are TRL seven, but we already got some recognitions from the water global practice of World Bank from the Portuguese innovation agency and from the Portuguese Energy Agency, and we go to the last one to say thank you so much for your attention

10:00

and your careful consideration, we hope to partnership with well, water companies in the US innovation in water challenge in order to rapidly complete the roadmap we plan. Thank you so much.

10:15

That was fantastic. Thank you very much. And thank you for keeping to the four minutes. And oh, it's always hard to be the first one to go as well. And just as a quick follow up question from there. Can you explain a little bit about what you would like from a partnership with a water company or one of the NAVs and how this would benefit the development of the solution that you've proposed this morning?

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Well, thank you for the questions. As I said, we are already in the TRL 7 phase. And being with a water company in the UK would be very important because I see that the maturity level of most of the water companies we've been

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trying to contact these last weeks is very high. So we can in fact deliver most of all the potential that we have in the Water Wise system, not only of what is already done, and ready to deliver, but also to help us to be more quickly on answering to the world roadmap. Okay, so

11:21

more than funding to do things. We want to work with the water company. We want to do this on a real time on the real field, where the problems are and where we believe we got the solutions.

11:36

That was great. A very good explanation. Thank you very much.

Thank you, Caroline.

Okay, we'll we'll pass on to the next presenter, who is Chris from Kikapay

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Chris.

11:59

unmute.

12:02

There we go. Lovely. I'll hand over to you.

12:12

Thank you very much for inviting Kikapay to present today's event. Yeah, my name is Chris Moore, and I'm the CEO and founder of Kikapay. Kikapay is a new company focused on providing products and services that are based on open banking. Open banking is designed to benefit companies, such as utilities like water companies, and particularly their customers. Kika is our payment product. It is faster, more convenient, and more secure for collecting payments than a card payment. It is also generally 70% cheaper to for the utility company. Kika enables utility companies to request payments from their customers by virtually any mechanism such as a QR code on a statement, a link in a text message or email

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or a payment option on a checkout page or a website or mobile app. We're currently implementing this for a water company and other clients outside of utilities as well.

13:21

As well as being innovative, and probably the simplest way to make a payment. A Kika payment flow for the customer provides an opportunity for the utility company to engage in a dialogue with the customer. Even as something as simple as showing some water saving tips or a link to information about how to save water.

13:44

It is this aspect that made us realize that kicker could be used by a customer to request help with that bill.

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Moreover, using other aspects of open banking, ie share the sharing of a customer's financial information. There's an opportunity for utility companies to identify early and help vulnerable customers pay their bills.

14:10

Could we move to the next slide?

14:16

So what is how to pay an idea for a grant application? The genesis of helped to pay is the realization that open banking can give a utility company access to new data source, ie the customer's banking and transaction data, combining this with other sources and using algorithms and

14:39

we can determine what is affordable for the customer and the best schedule of payments to pay that bill that best fits that customer's earning profile. On this page, I set out the basic concepts of the product. We visited your customer will ask to initiate a dialogue. Which were they asked for

15:00

Help, we could offer to work out what they can afford, and what support they could get by analyzing their banking transactions, water usage information, and potentially other data sources. We need to get explicit consent from the customer to do this.

15:18

By applying different algorithms and machine learning to improve the accuracy over time, we can offer a tailored support package to the customer. There are so many things that we could do with this data, and our solution. And that's why we're looking for help from water companies, regulators, consumer organizations, and relevant charities to help determine the shape of help to pay. We will be seeking a Ofwat innovation grant to help fund the product development, we are already working with Manchester University, on the machine learning aspects of help to pay.

15:55

Help to pay is in line with the innovation grant theme of making use of open data. And with Ofwat’s PR determination to identify and help more vulnerable customers. We're inviting all interested parties to take part in an open online workshop on Monday the first of March at 4pm. We already have several confirmed participants. So please contact me or my colleague, Tim.

16:22

Soon, if you would like to take part or find out more about help to pay.

16:27

Can you just go to the final slide for contact details. Thank you very much.

16:33

I was great. Thank you very much, Chris, very another very interesting presentation. And you did cover this

16:39

partially in your presentation there already. But can you just expand on a little bit what you would like from a partnership with a water company or NAV and how that would benefit you and the development of this solution?

16:53

Yes, I think that, that we will we know that many water companies have already explored some elements of how to help vulnerable customers in terms of the help not only to pay their bill, but also help in terms of reducing their bills. So we want to find out how open banking and open data can help facilitate that process. We also want to make sure that we are addressing a big challenge that both the utility, the water company and their customers face that we can solve with open banking and open banking data.

17:36

We also want to make sure that we don't build something that's you know, already been resolved.

17:42

That’s super, thank you very much very clear explanation.

17:46

Okay, we will move on to the next presenter, who is Bruno from Scubic.

17:59

Hi, everyone.

18:01

Hi, everyone. All right. Thank you.

18:04

Thank you, Caroline. So good afternoon to everyone. My name is Brundo. I'm the co founder and CEO of Scubic. And first of all, thanks for this opportunity to present our work to the UK water utilities. As everybody in one knows most water utilities on UK in many countries in Europe has already installed some level of IoT or sensors to manage their water networks, however, as the number of devices increase, creating valuable insights and optimizing the network operation has proven to be a very complex problem to solve. Therefore, we need a solution that can use the IoT data and automatically deliverable powerful insights without the need for any human interactions. And this is why we create Scubic. Next slide please.

18:56

Scubic develops detailed smart digital twins or how I call it a virtual operator, which uses a wide range of data sets both from the network and from external sources, such as weather demographics and economics data. Then the machine learning algorithms use this data to predict the in real time the water and energy demands across different parts of the network. The software also uses information on energy supplies and electricity price, and some level of the operator knowledge to optimize the energy costs of pumps and valves all of these on real times. Either the pumps can be automatically controlled by our solution, or the cost based software can provide information to the network operators enable them to control the system more efficiently. With these solutions, we are helping the water utilities on the long term operational resilience and reduce the network risk as has been described on the

20:00

innovation team number three. Next slide.

20:05

So Scubic helps water utilities to achieve their zero carbon goals, reduce the water and energy wastage, and helps reducing the loss of knowledge due to some aging workforce that is helping, that is helping all over water utilities in Europe. With Scubic, we will increase the water quality and network security. And since we lower the energy costs and emissions, our platform has the very fast return on investment. Next slide, please.

20:38

So, we have applied Scubic on small municipalities, but we are reaching reductions up to 18% on their energy costs, which was is really amazing. But I have one thing that I have to stress out. Scubic, it's not an IoT or a network management system. Scubic augments these systems and manually processes that can be replaced it with the fully autonomous modules. For the near future, we will scale up Scubic solution for larger water, for larger water networks, and to demonstrate the autonomous modules working. Therefore, we are looking for water companies that can give us access to the data and apply this unique system at the large scale networks. Final slide please. So thank you very much for your attention. And I hope to optimize your network operation very, very soon. Thank you.

21:42

I was super, thank you very much, and kept the time perfectly as well. And, again, you touched on this in your slides already. But just for the purposes of clarity, could you just describe or explain what you would like from a partnership with a water company or a NAV in the UK or in England and Wales? And how this would benefit the solution development?

Okay, well we are mostly a data analytics company with knowledge on hydraulics and on energy efficiency. So we only need access to some network data. And of course, talk with the operators to get part of their knowledge in our systems. That's what we really need from the water utilities. After that, we need some water network or part of the water network where we can test our solution on our cloud based platform. But what we really want is the fully autonomous systems working. We will replace part of the work that the operators have on a daily basis, and some

22:52

manual steps that they have to do to manage their water networks. This is what we really need from water utilities.

23:01

That's great. Thank you very much. Thank you for the explanation.

23:07

Okay, so Next on the agenda, we have John from

23:15

Sorry, I have a muted apologies for that. John, was handing over to that to them, and just saying how you're already ready. Good to go. So I'll hand over to you at this point. Thank you.

23:28

And good afternoon to everyone from Denver, Colorado. If we can go to the next slide, please.

23:35

Very quickly, Pluto shift has been in business since early 2018. Really focused on bringing practical artificial intelligence to what we consider the industrial world. Our founder and CEO Prateek is one of the leaders in the world on the topic of artificial intelligence and machine learning. We have offices here in the States, Palo Alto, Denver, Louisville, Kentucky, a presence in Latin America in the UK. And we're really committed to bringing sustained results and benefits to our clients and customers with hard ROIs and real benefits to their organizations. Next slide please.

24:21

Relative to our grounded AI methodology and platform…for us, it's really about bringing and empowering, within

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a utility, the frontline and remote worker. How do we bring the insights in an actionable way where they can really bring value to their infrastructure? So our approach is very practical, it's driven by data, we enhance and empower the organization and really lock in on the key pain points to improve how our facility functions and operates. Next slide, please.

25:02

Relative to how we can make contributions, it's really in the areas of better data analysis, optimized resources, optimized systems. And with our platform and approach, we bring immediate day to day value to an organization. We don't try to boil the ocean per se, and really understand the functional aspects of what it takes to operate differently. Within that we really feel we help drive positive behavior change within an operation, to make sure that it actually progresses and achieves its goals. Next slide, please.

25:45

When we look at what we do, it's really about the opportunities that are put forward through this organization, and really how we can help the water utilities make more out of what they do across the various assets and processes. Next slide, please.

26:06

We do have demonstrated results, where everything we do is backed by a defined ROI. And within these sample case studies, you know, where we're driving impacts, that would be a great benefit to a water utility. Next slide, please.

26:28

Also, I think we're getting a lot of visibility to our thought leadership on the topic of grounded AI and how to implement it. Next slide, please.

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A little bit more about our market recognition. And then last slide, please.

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Really, you know, what we're seeking from a partner is, you know how to holistically assess its business processes, you know, we could really help analyze and optimize existing data investments, improve performance and regulatory compliance, achieve cost and resource efficiencies, and then enhance performance of frontline and remote workers within what we need is access to a water utility from the perspective of gaining their data. And then through gaining their data, we're able to come back and provide exact areas that our platform can be of value to them. That's the end of my presentation. Thank you very much for the time.

27:30

That was great, John, thank you very much. And perfect timing. Again, there, so everybody's doing extremely well. And you have already answered the first half of the question that I've asked the participants today, I think the area that you could perhaps add a little bit more detail to is if you are able to gain a successful partnership with one of the English or Welsh awards, companies or NAVs, how would this benefit the development of this solution? In particular, will it help you accelerate the development accelerate the market entry? What are the specific things that you're hoping to achieve?

28:08

I think there are two, obviously, there's a market presence and establishing more of a foothold in that market area. Also, I think, as we are working across the globe, gaining access to data within a different environment, coming off a different set of processes and systems will only make our platform and our algorithms richer.

28:35

That's great. Lovely, thank you very much. And I will now hand over to Glyn Owen from Systems Coaching. Are you there, Glyn?

28:54

Hello, Caroline. Can you hear me? Hi, Glen, we can hear you. We can't see you at the moment. But we can hear you. Okay. Let me just see.

29:05

Perfect. You're on camera. That's perfect. Okay, yes, yes. So the floor is yours. I'll turn my camera off, and I'll turn it back on it. 30 seconds to go.

29:15

That's lovely. Well, thank you, Caroline. Well, thank you for the opportunity to present. My name is Glen Allen and I am the creator of Systems Soaching. Systems Coaching is an innovative approach that originated within the water sector during amplitude and has subsequently been developed and prototyped over 20 years. The approach speaks to the transformation of matrix organizations typically found in utilities engineering, project and program asset management and supply chains. The purpose of systems coaching is to enable these organizations and whole systems to better innovate and perform during times of change and uncertainty. So what is systems coaching and how might it be applied? Next slide, please.

30:00

Name suggests systems coaching is underpinned by systems thinking and is concerned with the organization dynamics between projects, programs and portfolios, treating the system as one single entity. So in the world of business coaching has gained traction over the past two decades. Presently at the emerging edge is a category called whole systems coaching. Systems coaching can be designed into an organization as a function to enhance performance. In a similar manner. If a card requires more power or speed, a turbocharged system can be can be installed. Additionally, systems coaching can be configured in to enhance a variety of organizational aspects related to change, development and strategic value. As a function it can be positioned in the PMO, Center of Excellence enterprise departments or even as a whole system network. Next slide please.

30:56

So systems coaching developed over four stages, each lasting about five years, notably in stage two and early prototype achieve finalists in the UK National Business Awards in 2004. It operated within the top 10 contractor within with AMP 3 and 4 and four strategic programs with many water companies. Stage Three is outside the sector focused on whole system transformation. Stage four was concerned with a National Water Company in the Middle East, undergoing rapid transformation, and also an award winning regional integration pilot in the UK public sector. Finally, a book has just been published in December, capturing the blueprint of the approach. So here's the thing. Matrix organizations are typically designed in best performing a stable, predictable delivery environment, such as the AMP period for five years. However, they typically struggle with changing innovation. And when the environment becomes unstable, the organizational risk intensified considerably. Next slide please.

31:59

So now in a post COVID environment, as some agencies such as the World Economic Forum, urgently calling for a great economic and social reset, the volatility uncertainty, complexity and ambiguity of the strategic operating environment is about to intensify rapid strategic and systemic pivoting may be the new normal. As an example, perhaps even questioning the viability and priorities of the AMP planning and delivery five year program periods. These sort of issues fall into an Enterprise's strategic risk management category, that are by nature often difficult to spot and treat. This is because of the people process organization and cultural attributes relating to how we perceive and engage with problems and solutions. Coaching, and in particular systems coaching, speaks to the dynamics and essence of these types of risks. Last slide, please.

32:56

So in summary, Systems Coaching may be considered as an upgrade for matrix organizations, organizations that set the very foundation, or core for water or engineering based company, together with the supply chains. My aspiration is to share knowledge, solutions and insights as quick as wide. And with as much impact as possible, I'd be delighted to collaborate with a water company or group of companies interested in leading a scale with impact strategy on behalf of the sector. So thank you for your attention. And if you'd like any

33:29

further information, you can contact me through my website.

33:34

I was great. Thank you very much. Glen acquires a different solution that's been put forward. So it's very interesting to see. And I enjoyed the reference to the post COVID environments. I think we're all looking forward to reaching that point. And as with the other partners pitching today, I just like to ask you at what you would like from the partnership, whether there was company or not, and England and Wales, and how this would benefit the solution development from your perspective.

34:03

Okay, so thank you, Caroline. I'm just noting that the slide is actually a bit

34:09

distorted because of the

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probably the presentation settings. So

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I wrote.

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It's sort of the lack of clarity. So I just like to draw that, as well. My aspiration is basically to share the knowledge inside solutions, and continue to continue to develop the approach also to create new blueprint solutions. And this is what I'm actually good at. In a commercial environment, such as a management consultancy, this approach would probably be productized and serviced and protected for a competitive advantage.

34:49

Through a non-profit Center of Excellence-type solution, knowledge can be shared and leveraged across the sector at speed and scale. So what I'm looking for

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is a partnership basically to help me connect with the community and communicate and,

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leverage the solution and the opportunities and benefits actually out as wide as possible.

35:19

Super. That's great. Thank you very much for that additional explanation. And I think we will now move on to we have Shawn Lo Fracta next. Thank you very much, Glyn.

35:40

Hello. Hi, Shawn, we can hear you, but we can't see you at the moment.

I tried to open my video, but okay. Oh, there we go. Thank you.

35:52

Thank you very much.

35:57

So thank you. And thank you for the opportunity. So Hello, I'm Shawn Lo from Fracta. And Fracta is an AI startup that applies latest machine learning techniques to provide the most advanced data insight available for water network. Today, I'm going to introduce Fracta and share a proposal with you.

36:15

First, Next, please.

36:19

Fracta provides specific recommendation on how the network can be more resilient and more optimized, such as maximize the lifespan of assets. As you can see on the right side of the slide Fracta analyze every single pipe session are virtualized the risk level. Now we have released our platform in the US, Japan, with more than 90 utilities. To name a few San Francisco Water, Suez North America, Japan’s Toyota city, which is the hometown of Toyota motors. And also we have analyzed more than 300,000 kilometers pipeline, and hundreds of 1000s of burst. Next please.

37:02

Furthermore, our sophisticated data science team knows how to leverage AI across industry, such as wastewater, city gas, and railway. Next please.

37:14

So here is the main part of my pitch today. The concept of our proposal is like Fracts current platform, you can see in the middle of the slide, focus on the coming half year to five years. We notice that climate change becomes the important issue for long term asset management. So we came up with a proposal one to push our prediction to longer term like 10 year plus with climate change element on the right side.

37:41

On the left side, you can see the proposal two. Leakage is an important issue in the UK. Fracta wants to find a partner to shorten the prediction to monthly, weekly or even hourly to make the prediction more efficient. Both proposal need your valuable knowledge and data to polish the idea and make the country together.

38:02

Next please. So let's share some details. For the first proposal focus on climate change and resilience by analyzing and delivering insights from the data, which we believe including strategic innovation themes, number one, three, and five. So please check the right offers index on this side. So this proposal plans to include IPCC climate change model to predict first, how the weather change will influence the useful life and risk factor for your pipe asset. Second, how to constantly input the impacts of climate change on your capital investment plan.

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So this proposal will benefit your long term capital investment planning, and make you more productive on climate change. Next, please.

38:51

On the other hand, we know the most common way to find a leakage in the UK is monitoring DMA, inflow and outflow, and then send to the acoustic solution team to find the exact location. So it usually takes time. The second proposal and to deliver a better granularity of information as to how many barriers are expected to occurred, and potentially a better estimate of which area section we experienced more bursts by adding data like seasonality or life greatest. So we hope much such information will help benefit plan operators will help plan operations for upcoming weeks and season with benefits such as better crew management and factor responsible time. So this is just two examples of our many proposal. So reach out for more options and details. Next please

39:47

So, come partner with Fracta. Thank you very much.

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That was great. Thank you very much, Sean again, another fantastic performance, keeping time perfectly.

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As I did as again asked the question of what you would like from a partnership, again, you did touch on this. But if you could expand on that, and how this would benefit the solution development from your perspective, please.

Thank you. So, so current platform are fully commercialized globally. So we are aiming to partner with UTP to create new challenging proposal, which is related to private infrastructure. So I think we need like mainly three step. The first will be we have many, many ideas for drinking water pipe asset, but we don't know exact needs and topic which could benefit UK water market most to create the right proposal. So we are looking forward to discussing with UK water utility to understand the specific needs and topics. And the second step, we need the UK utilities knowledge and additional data to polish our a proposal to become a more UK social issue oriented proposal to apply for the fund together.

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And finally, we would like to work with utility to perform such an experiment at a service area, for example, use our

41:06

output to check the exact leak location, and to make the model much better. So that's the first step. We welcome any feedback on today's pitch. And please send your specific technical question directly to my email. And we will reply to you shortly. Thank you very much. Thank you. Thank you for your time.

Super, thank you very much, Shawn. And we will now move on to chuck Hansen from electro scan. I can see Chuck has moved up the screen. So, hand over to you.

41:52

That's great. We can see you and hear you if you're ready to go.

Okay, good. We're all set. Hey, thanks. And good afternoon from California. I'm Chuck Hansen. I'm the owner of electric scan. And I'm delighted to be with you here today. And really, really talk about the worst kept secret in the trenchless technology industry. Next slide.

42:20

and that is unfortunately cured in place pipe. One of the major trenchless pipes that have been used for almost 50 years in the UK, leak. Here's an example of a British liner. And you see that purple dye

42:38

going directly through the liner.

42:42

Unfortunately, next slide. There's been no technology ever available to measure a full length liner. And the information actually gets worse. Not only are we finding pipes that are being aligned with cured in place pipe leaking, we actually may leak more after rehabilitation because of how we're reconnecting services. Next slide.

43:13

The examples are all over and lining contractors really have known this for a long time. But we've given them a very easy technology bar. We've only used CCTV inspection. Here's a pipe that you can actually see

43:31

that if I put this through the example as well, I would have full leaks through it. CCTV won't find it. Next slide. Acoustics won't hear it. And even helium tracers won't find it as well. Here's an example of a UV cured CAPP having cracks that a TV camera or an AI routine looking frame by frame would never see the permeability. Next slide.

44:03

The other problem is not only has this been used in the sewer business, we are now finding examples in the UK water market where CIPP is being used to line water pipes. And not only do they look bad, but we're finding massive leakage. Next slide.

44:22

It's the perfect storm. Because when we assume that we fix the pipe, we assume we're going to not have the infiltration, not have the backups, not have the flooding in homes in recently lined areas in the UK. Next slide.

44:40

So what are we proposing at the £250,000 mark, we're proposing to examine 25 kilometers of CIPP. Actually having that information organized by supplier by curing method, comparing it to the original CCTV

45:00

That approved this pipe before, we want to also look at the flood risk, where we're lining pipes, assuming that we had 100% reduction in pipe. And we want to help come up with new acceptance standards. Next slide.

45:16

Some of you may know we recently won the November water dragons event, you see some of the water utilities that were judges. Next slide. Earlier this month, we also were selected as the leak detection solution of the year. Again, not acoustic, not video, and not tracing that. Next slide.

45:42

So again, helping agencies know good CAPP versus bad, we brought a new technology. Next slide.

45:53

And we've been tested by the leading CAPP experts to come up with that. Next slide.

46:01

So this is the ability to hear, we don't use that, we don't use pressure. Next slide. What we do instead, with our innovative technology for the first time ever next slide is we're able to measure the size of holes in pipes. Next slide.

46:21

And the innovative thing is within five to 10 minutes, get that data delivered to the utility so they know exactly where the leak is position to one centimeter accuracy. Final slide.

46:40

So I look forward to talking with you and answer any questions you might have.

46:46

Thank you very much Chuck. Another very interesting presentation and a few familiar faces on some of those slides, including my own so

46:53

nice to see

46:56

as with the others, just to ask the clarification question of what you would like from a partnership with a company or a NAV in England or Wales, and how this would benefit the solution development from your perspective.

Yeah, you know. Look, this is an industry where we're spending a billion dollars a year in rehabbing our pipes. And I'm sure all of the folks are off water assuming once we repair a pipe, it doesn't leak anymore. That's simply not the case. And what we've been holding really contractors to an older technologies like CCTV, and even AI that can't identify permeability and leaks in pipes. And so we really want to make sure that British water companies are getting value for money, and really have the first major CIPP evaluation for a leading British water company. So that's what we like to offer we sure like to select a good partner for that.

47:54

Super. Thank you very much. Okay, um, next up is Steve Thorp from collaboration between Atkins, British Geological Survey, and Morgan Sindall.

48:11

Hello,

48:13

Can you see and hear me okay?

Yeah, we can see and hear you fine. So over to you. Great.

Thanks very much. So my name is Steve Thorp, I work for the British Geological Survey. And today I'm also representing our partners in Atkins and Morgan Sindall. And this is our solution entitled Dig To Share. Next slide, please.

48:34

And unforeseen ground conditions are quoted as a cause for one in every two projects that overrun in time or costs. Naturally, geology is an unknown, but there are plenty of ways that we can bring geology to life to provide better predictions of what's beneath our feet. The BGS has a national repository of borehole data, which is often used to provide that geological understanding. But we estimate that around 80% of boreholes drilled in the UK are not sent to the BGS for storage. They sit in various organizations archives as either paper copies or as digital for digital files, and therefore are regarded as single use. BGS are strong strategic alliance to the government open data approach, and believes that sharing data can help to reduce the risks and produce a more targeted ground investigation.

49:23

Next slide, please.

49:26

And this is where Dig To Share hopes to help unlock all that data to make geology better understood and get the information to the people that need it. Dig To Share aims to help create a fully digital workflow from data creation, storage and retrieval. Dig To Share understands many barriers to sharing your data and aims to identify what those are in the water sector and find solutions to those barriers. And BGS would like data to be donated as open data and in industry standard formats as well, that’s AGS format. This allows retrieval of data to be much easier

50:00

Through things like web viewers, industry software like whole base, or groundhole desktop, or in fact through any GIS system. As I've already mentioned, this will help to reduce risks and costs and help to design a more targeted ground investigation. Next slide, please.

50:18

And the Dig To Share project can help by identifying any blockers and providing solutions for you. We can help look at your current data management processes and see if there's any improvements to your data gathering routines, and how you manage that data. The biggest benefit is that we can help you understand the value of grant investigation and the value of sharing data openly and how that benefits the UK economy as a whole. We would hope to establish a data sharing agreement at the bare minimum. These exist for many publicly funded infrastructure organizations already, such as the Environment Agency highways, England Network Rail, and recently the Welsh Government. Next slide, please.

50:59

So this slide just shows some of the achievement achievements that we've had so far. Initially, the Dig To Share project was set up in 2018 is a one year project to release 10,000 boreholes, which we smashed. And we have set up a super user community to spread news of our efforts and empower people to encourage data sharing within their own organizations. And we've also been nominated for several awards and have in fact, one of you. And we take part in conferences and look forward to doing that again, actually, once we're once we're all set free. And the latest project is a citizen science initiative called the Big Borehole Dig. And this is led by the Dig To Share team aiming to get the legacy PDF records held by BGS digitized into AGS format. So that yet more data is available openly to everyone.

51:48

Next slide, please.

51:50

So our proposal includes getting more data shared, giving the water sector access to the datasets to produce faster desk studies, to understand the geology around the assets in order that priorities can be set from planning for maintenance can be better forecast. By submitting your data to BGS you are creating a richer data layer for UK PLC, which can only improve if everyone plays their part and contributes to the national repository. And final slide, please. So thank you very much for the opportunity to present our ideas. I've been Steve Thorpe, and this is the way forward. This is Dig To Share.

52:25

That's really super, thank you very much, Steve. Another very interesting presentation. And as with the others, I just like to ask the clarification question of what you would like from the partnership or a partnership with a water company or NAV and England and Wales, and how this would benefit you and the solution development.

Sure so this is all about data and kind of understanding the ground. And so essentially, we would like to learn more about the data held by water companies and their kind of data management process. So we would look to be having kind of open and frank conversations about what data might be available inside. And either one water company or a series of water companies, and how we might kind of work together and make sure that more data enters the sort of national repository and is shared more widely. And

53:16

we would also like to investigate digitization of legacy data. And so with that, we can release all that data to the, to the rest of the world. And

53:28

and yeah, the bigger pool of data that goes in the bigger pool of data that is available to the next generation of infrastructure projects.

53:37

And that was really good. Thank you very much for the additional explanation there. Thank you. So we will now move on to Eddie from Nijhuis.

53:47

Hope I've pronounced that correctly.

53:51

Yes, yes. Eddie from Nijhuis indeed.

53:57

It’s perfect.

53:59

I will hand over to you then thank you very much.

Okay, thank you. I see this slide is a little bit different than I mean, but I'm going to talk a bit about the removal of pharmaceuticals from the wastewater to improve the ecology. I think it's a widely known topic. There's a negative impacts from antibiotics, but also from all kinds of medicines and pharmaceuticals into wastewater. So you can go to the next slide, please.

54:27

So what we see in general in the Netherlands, for example, is that the more strict the regulations get, the more innovation is required. The higher ambitions are on water companies. It requires more and more technology, more innovations. And at some point, it's fairly impossible to retain all that knowledge within the water company itself. So obviously, is a more close collaboration between the

54:54

technology providers and the water companies, where we actually strive towards innovative

55:00

Partnerships and looking at a few cycles not only to play the system there, and to see what works well, but to share the data and to think about it, to innovate, use R&D, new technologies and keep on having an up to date installation and technology.

55:19

And of course, Operation maintenance and monitoring is a very important part of it. And next slide, please.

55:27

So if you look up some technology specifically for pharmaceutical removal, there's much more I can talk about for hours about this. But ozone is one of the most widely applied technologies here because it has a very large, wide variation of pharmaceutical removal can remove up to 80%-85% of the load, you can adjust the dosing control in order to optimize operational costs and don't add chemicals in this case, and also leaves more opportunities for reuse of water for example, irrigation and options to increase the quality. For example, recreation watering, additional disinfection by UV or peroxide or to prevent specific compounds to emerge in the water like as high bromide concentrations bromate can be formed

56:19

or in combination with new or already existing filtration to add combined nutrients removal, for example, ozone leaves, oxygen in the water, which already provides oxygen for nitrification. In sand filtration. Going to much higher qualities, nanofiltration is widely used already in the industrial sector. But in the municipal sector is more a demonstration stage more and more plants and plants are being done in the Netherlands currently. And its aim to look for higher quality of reuse such as process water. Or in the end, we end up with a higher quality of effluent that enables more reuse opportunities. And if you only apply ozone you already see. And that's the ecotoxicity toxicity is already reduced by 15%. On the short term. Next slide please.

57:14

Well, to support all this, and also one of the things we can contribute to the water companies is that we have extensive knowledge. We have already five years of active knowledge from pilots

57:26

in the Netherlands, but also countries around it, together with a lot of companies and water companies in the Netherlands. So there's a huge amount of data sets on very large variety of pharmaceutical compounds, and different process setups, we already have pilots available. And it's something we know how this process has been performed in the Netherlands. And although UK is different, of course, that doesn't mean you have to reinvent the wheel every aspect. So this is what we can provide. And also the across the knowledge across different sectors like pharmaceuticals or hospitals. Next slide, please. And come down towards the end. It is all resolved in the in the first full scale ozone plans on municipal wastewater treatments. So we built the end of this year, as far as 85,000 pe. And we also look for more improvements. So this is already ozone is a concept that is already applied in Switzerland and Germany for a decade ago, but mostly based on the knowledge from drinking water applications. And in the decades, innovations have evolved. So we are talking about the more newer generation, with more online real time dosing,

58:40

for example, and more modular builds, please Next slide.

58:46

That's the final one. And if we look at modular builds, it has also a lot of benefits for one you can build in the factory. So it's produce a lot of people on site.

58:57

Temporary facilities on site, building time, reducing costs, of course, for example, in this case, as a pharmaceutical company, we only build this whole installation in six months. Because the civil works and mechanical works almost good starts simultaneously.

59:15

Yeah, I think that that's about the time I have.

59:19

It says yes, thank you very much.

59:23

Another really good presentation. Thank you very much. And as with everybody else, could you just explain a little bit please, on what you would like from a partnership with a water company in England or Wales or with a NAV? And how this would benefit the development of the solution you've proposed today?

59:41

Yeah, especially in the Netherlands, this this development has been running for some time. In the UK, you have more specific demands or different infrastructure always nuances. So yeah, what we could do is we have a large variety of technology and knowledge to look together with the water company

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And their situation because it's not a one size fits all in this market

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to look at the best solutions, and we can support it with the money available pilot and yeah, build on that.

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Super.

1:00:17

That's great. Thank you very much, Eddie.

All right, my pleasure.

1:00:22

Okay, now Next, we will move to Jose from BuntPlanet. Again, I hope I've pronounced your name correctly that apologies if not.

1:00:41

Are you there, Jose?

1:00:50

Yes, can you hear me now?

1:00:53

We can. It's very quiet, but we can just hear you.

1:00:57

Can you hear me? No? Yes. No? Yes. Okay.

1:01:02

Yeah, we can hear you just about it's quiet. So if you could speak up, that would be great. And I'll hand over to you.

1:01:11

So I'm

1:01:12

Jose Teixeira, the account manager at BuntPlanet. I'm going to speak about hydraulic modeling and artificial intelligence in the Smart Water Network for water losses. Next slide.

1:01:26

So we are an innovative water sector since 2007. And liberated Smart Water projects worldwide. We are working now in 12 countries. And the key goal here is the operational resilience and infrastructure risks. So we think we have this BuntBrain platform that is able to detect and predicate leaks in the water supply pipes. Next slide please. So what we do is we combine different technologies, that's where the real magic happens. So if you use the different technologies separated, yes, you can strike some value from them, but if you mix them, that's where you can really extract values. So, we use hydraulic model in the first place, and to build this digital twin and we use all the information about all the sensors that you

1:02:29

go to visit artificial intelligence to manage all that data, those data and all that information comes to the single bathroom cause BuntBrain that will manage all that information to give us results. Okay, next slide please.

1:02:45

So, the big challenge here in the leak detection is the time so we have the first time the awareness we have to reduce the awareness time. So we be able to act in real time and then to locate the leak in the network and then to do this repair. So if we reduce this time, we will automatically reduce the cost associated in those leak events. Next slide please.

1:03:15

So this is we have a problem when the DMA is big, okay. If the DMA is small DMA, you can go to there and you have a leak event and you can find it with the traditional ways. But the real problem comes when the DMA is big, for example, as you see in the picture three Next slide please.

1:03:41

So here's how we do it, when we have big DMAs like the 2 we use this hydraulic model in the first place there has to be calibrated dynamic calibrated, and then we use that information a with the information of the sensors, as you can see in the in DMA 2 we have five Flow Meters installed in this big area. So with this, this, this makes with the hydraulic modeling, artificial intelligence, machine learning that we use in the first place to learn how the leaks will work how the sensor will affect about leaks. So we are able to generate this this beautiful DMA then to find this leaks in with accuracy with from radio from 300 meters for example. Next slide please.

1:04:37

So when you have a leak and the DMA as you can see, the older technology there are nowadays will tell you the leak detection in the DMA area. But we can do it more more in a more efficient way. As you can see in the in the next individual DMA approach. What we can do is we're going to go into

1:05:00

The pipe level. So we're going to tell you exactly which part you have to find to go find the leaks. Next slide, please.

1:05:08

So first place, we use artificial intelligence. And then they mix with hydraulic simulation in the present day, just to show you next slide, please. This is how we can see the leak event. For example, in the platform, this is using flow meters, okay, we use flow meters for this. Next slide please.

1:05:29

So this is a case study a real case study in Germany. So this is how we're going to show you where you have to find the leak. Okay, first, you have to go to the read. And then to the next slide, please.

1:05:43

So just to finish here, for this competition, we think that we have a lot of knowledge in this field with the boom blend implementation that we have in more than 12 countries. But we don't want you to come here with flow meters, and to do something that we already have been doing for some for some for a lot of years. So we want to do it with pressure sensors. So that's a reason for that, we have a very drastic reduction of costs when you're comparing pressure sensors with flow meters. And we are already doing some projects ongoing in two countries that we are doing this with pressure sensors, when we support for the clients the data preparation, because what we need is the data, data, data and data. And then I try like model calibration that we can do together with the client. And then this additional sensors that has to be installed in the network, in order to generate to these leek events in the platform.

1:06:56

Thank you very much for your attention. I really, I really

1:07:02

hope this is very good for all the TVs in UK and around the globe. And I want to tell you that we want to do this collaboration with some utilities in the UK

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are open to hear something from them.

1:07:21

That's super, thank you very much Jose. And again, just ask you if you could expand a little bit on what you would exactly like from a partnership with a word company, and England or Wales and how that would benefit the development of the solution. Thank you. We are we since 2007, we are working with clients on our innovation projects always have declines on the center.

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We like, we love, to work with clients and to build projects together. And this is a good opportunity for that we have a platform that it's as his recognition in different countries.

1:08:07

And in and we want to do this, as I told before, with flow meters, flow meters and pressure sensors. So in this is a very innovative project. Because as we have a lot of knowledge in the water sector, and we have a lot of information and with different projects that we already made, we can use all this information together with this knowledge from the client to really build a very, very good platform that can help the planet

1:08:46

stay more sustainable.

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safer. I mean, you can't get a better cause than that can you, to help the planet be more sustainable? Thank you very much. Another really good presentation. So we will now move on to TelLab with Eoin presenting. Are you there? Eoin?

1:09:08

I’m hoping I’ve said your name correctly. Yeah, very good. Perfect. I had to look it up first.

1:09:14

So you can see my screen. I'm on video and everything here is fine.

Yep. Yep, we can see and hear you perfectly. So I'll hand over to you. Thank you.

Thanks very much, Caroline. Yes. So this talk introduces

1:09:27

a new portable and deployable nitrate and nitrite analyzer for onsite and in situ analysis of various water matrices, environmental and industrial waters called Aquamonitrix. Next slide.

1:09:46

So, as I said, it's an analyzer designed for on site or in situ analysis, and it's designed to deliver real time pollution information, specifically for nitrite and nitrate.

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And it provides the customer with an opportunity to reduce fines relating to pollution incidents. And in addition, it's a very simple unit, it's

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easy, easy to install, easy to easy to deploy. And also servicing is, is very straightforward as well. So it's designed to be requiring non skills deployment and servicing. It's also it also has a low cost of ownership. And again,

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that was the kind of the, one of the design features easy to easy to mass manufacture, easy to manufacture, and also low cost of ownership was a key element of the design. Next slide.

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In terms of how the analyzer works, it's based on a on a rapid ion chromatography technique in combination with a new 235 nanometer deep, deep UV LED basically. And that allows for selective detection of nitrite and nitrate. So we have patented

1:11:03

technology around this around this detector. And, but basically, it allows for rapid selective detection of nitrite and nitrate, and in the image, here, you can see typical chromatograms generated by the analyzer within three minutes. And from these chromatograms, then concentration information is sent to the user, basically. So next slide.

1:11:28

So here's an image of the of the commercial analyzer itself, which is commercially available from this month.

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And if you go to the next slide

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is just a couple of the couple of the images of we've tested prototypes of the version and prototypes of the analyzer in Spain, Finland, Ireland, US, and we have some systems in New Zealand as well. So a whole range of different water matrices from

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waste and various

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wastewater, industrial waters, environmental freshwaters, and so on. So a whole wide variety of different water matrices. Next slide.

1:12:09

So just to give you an idea of the analytical performance of the instruments, so we were finalists in a US competition, an international competition, which was organized by the US EPA, and it was basically the challenge was to develop a cost effective analyzer for real time monitoring of septic tank waters. And here you can see the results. So the concentrations the nitrate concentrations generated by our analyzer, versus accredited lab based and instrumentation, the results were generated by the US EPA. And so our results are in blue, and the grab samples are in red. So the left figure there is for nitrate. And similarly, the left figure is for nitrate. And as you can see in terms of accuracy, and over the over the one month at an hourly frequency, the analyzer achieved 95% accuracy for nitrates

1:13:03

and 104% for nitrite, similar for precision high levels of precision associated with the with the analysis. Next slide

1:13:10

is just an example of the user interface for the for the IoT. So you can access the download the analyzers remotely, and you can see the concentrations in in real time depending on the sample frequency, which you which you set. Next slide.

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So the project, which we're looking for, collaboration and

1:13:35

partners in basically is in the area of nitrite shunt. So

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through the use of an analyzer such as this, there's this potential to allow for effective nitrite shunt. And various studies carried out by water New Zealand, have demonstrated that by employing effective nitrite shant 25% a 25% reduction in energy consumption within aeration systems is, is possible. And the objective is to minimize nitrate production by stopping the nitrification process of nitrite. And that's where an in situ real time analyzers such as this could add could add value. So that's, that's one of the projects which we're looking for partners and

1:14:25

interested in, in applying the analyzer in this area. So that's next slide.

1:14:34

So that's it. Thanks. Thanks very much for your attention. And if there's any questions, or if you'd like more information on the analyzer, anything at all, feel free to get in contact.

1:14:45

So thank you very much, Eoin. And as with the others, I'd like to ask you the question around what you would like from a partnership with a water company or a NAV in England or Wales and how that would benefit the.

1:15:00

solution moving forwards?

Yes. So

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a lot of the areas of our expertise is in the area of analytical instrumentation. And so we would really

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be grateful for partnerships in the area of

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anyone with expertise in nitrite shunt aeration systems in general. And in addition, the analyzer has applications in a wide range of different areas. But that's one of the one of the areas which we think is

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it has, it could provide a lot of value in terms of the potential energy savings within those aeration systems. But again, our area of expertise is in the instrumentation side, and any partners that would have expertise that would be beneficial, we'd be very interested in in them working with them and collaborating going forward.

1:16:00

That's great. Thank you very much. Thank you. Okay. All right. We'll move on to our final presentation. Last, but certainly not least, and so I'd like to hand over the floor to Carol and Jane, who are both from Living Water Ecosystems.

1:16:22

Hello

1:16:24

can you

1:16:26

I can, I can see and hear you. Yes.

1:16:29

I will hand over to you, and let you have the floor. Thank you.

So I'm Carole from Living Water Ecosystems. And I'm here with Jane Shields our director to talk to you about our proposal to prevent and treat combined sewage overflows. So Living Water is a pioneering design company, you apply ecological principles to solve water and waste problems. The next slide please.

1:16:57

And so we're looking at the city of the five innovation themes Ofwat have talked about. So that's responding to climate change and reducing emissions to zero, to restore an approved ecological status of our water environment, and protect current and future customers from extreme weather pollution, and understanding long term operational resilience and infrastructure risks to customers and the environment and finding solutions to mitigate those.

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The next slide, please.

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And so I'd approach look at three different things. And it's, it's an integrated approach, looking across the whole water team, and not just a little eight year old, trying to sort of fix one piece at a time, but look at the whole thing as a systems approach. So initially, we want to reduce as much surface water as they can from entering the surface drain. And we'll talk a bit more of that in detail. And if we can reduce the surface water going in there, it reduces the load on the wastewater treatment plants and which would increase its capacity and hopefully help to reduce drain block. And another suggestion we have for reducing rain block is that new developments at new developments, be that industrial, commercial or residential streets incorporate an on site ecological treatment system to attenuate and treat surface water. And so that's not going into the wastewater treatment and works and perhaps in exchange for in capacity at the wastewater treatment works. And last strand of our strategy is actually protect the wastewater treatment plant from excessive volumes. It's not designed to cope with and we'll talk through that in more detail as well. But the next slide please.

1:18:47 s4

So how do we stop all this surface water from reaching the health sewer and so we're looking at two types of water one is just like in excess flood water, rain water, and what Living Water do is we look to find where are the sources of this. We look at the water catchment, and identify sources of excess water. And rather than go to the drains, we want to capture them at source and turn what is you know, a very precious resource into something useful and productive, rather than it becoming a problem in the combined drains. And we’ve got a number of ways in which we would do that, which will all involve creating a natural ecosystem and it could be through swales or ponds, redesigning streets and waterways and SUDS in main water gardens. And what we do is really look at the specific location and we target a specific solution for that and in terms of contaminated water

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we need to tackle that as well. And the more we can reduce that going into the combined drains the better for the wastewater treatment works and we have a lot of experience in treating road and agricultural runoff, industrial effluents like leachate whole variety of

1:20:00

And of effluents, and if we treat these at source using ecological means, and that's less water going into the combined drains

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So our system’s novel because there's a whole system's approach. And

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our systems are self sustaining, because we have a very diverse range of plants in our systems they're totally integrated into the local surroundings and that attracts the wildlife in there and also microbiology. And it's the microbiology that eats all the contaminants and also eats the detritus that comes from the plants. And so

1:20:37

the systems are self sustaining, there's zero waste and no sludge, and they're very low maintenance. And you know, where there's a lot of high tech solutions are dependent on electricity, our solutions aren't. They’re carbon negative, and they're also completely robust in the event of a power outage. The next slide.

1:20:56

So the benefits are you eliminate your CSOs because you've reduced the water going into your treatment package, and you've captured any excess and put it through the treatment plant. So you’ve eliminated the CSOs, you've improved the quality the water, reduce your emissions, adjust your financial penalties and customer complaints and your liability because you're not having

1:21:19

them and pollution going out into the environment. Your costs are significantly lower because our systems are carbon negative. You’ve increase biodiversity, and where you put in an ecological treatment systems, these are natural, beautiful places and immunities for the public, which can only improve the reputation of the water companies that put them in. Next slide.

1:21:39

We do need to wrap up if possible, please.

Yep. So product readiness. We've demonstrated we've done this before. We’ve got 32 years of experience

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And now we want to work at a bigger scale. So the next slide is hopefully the last one. Yeah. So what are we looking for? Living Water are passionate about tackling

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pollution and making the world of cleaner place. And we want to work with our water company who’s also passionate, and are committed to tackling CSOs, and we want to work with them together to develop an integrated strategy across the entire region, to manage water catchment and CSOs. And for this particular project, a demonstration is actually applying all of this to at least one of their sites with over the worst case of CSOs and nicely demonstrate that this technology works,

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and the last slide.

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So thank you very much for your patience, and for inviting us here to talk. And please come back to us with any questions.

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I was great. Thank you, Carol. And I think you've actually answered the question, but just to make sure that I've noted down correctly, in terms of what you would like from a water company, or a NAV in England or Wales or from that partnership, I noted down that you would like the opportunity to create that integrated strategy, and to conduct a demonstration, in really a worst case scenario to demonstrate that this solution does work effectively. Have I captured that correctly,

1:23:02

Perfectly, yes. Thank you.

No problem at all. Thank you very much, Carol. So next up is Simon from Kobus. Over to thank you very much, Simon, the floor is yours.

1:23:17

Hello, everybody. My name is Simon McDonald. And I'm going to be talking to you about the Kobus Pipe Puller in the context of the innovation agenda. And very briefly, next, I'd first of all like to talk about how it actually works. Essentially, it's a trenchless pipe pulling technique. If you look at the first picture, there, you can see, two pits either side of the road. So there's no need for any road closure or whatever. And we insert our pulling pipe through the old pulling cable on through the old pipe and then attach it to the spool at the other end. We assemble the pool in the excavation pit on the other side and simply pull it, it pulls the old pipe safely out of the ground and pulls the new one through. Simple as that, one swift action. And the actual action of the pipe pulling is probably only five or 10 minutes, it'll pull all pipe types, and it will pull anything up to 25 meters. Thank you. Next.

1:24:20

In terms of his impact against the well-known stated goals of Ofwatt, you can see that it's got some significant benefits. First of all in terms of cost per replacement. Typically it can be 70% less than open cut trenching. In terms of customer disruption, you've already seen it negates the need for road closures, etc. But it also minimizes any downtime for the customer. In terms of on-site emissions, clearly the lack of machinery required versus open cut means there's significantly less on site emission. I'd also add on the environmental side, we've probably removed many, many millions of kilos from the ground of lead, which is also obviously great for the environment, safety issues and strikes far less likely, in the case of trenchless pipe pulling versus let's say moling. Of course, we significantly reduced underground congestion, because we're actually removing the old pipe leakage rates clearly are significantly reduced new pipe in the ground. And then of course the whole wider issue of public disruption, road closures etc. are extremely well taken care of when it comes to Kobus. Next please.

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So what is the current status and way forward? Well, first of all, our machines are made in the UK and this stopped in the UK. So we have inventories are easy to call off. We're ready to deploy and demo or trial for any water company partners. And I think we've developed a great way of partnering with water companies to foster internal adoption, which we see as one of the key issues in terms of getting take up of innovation in the industry. And our objective, I think is pretty simple. If you are conducting a pipe replacement program, then Kobus should at least be in the toolkit, if not perhaps the go to tool in the toolkit. So that's our clear objective. And don't just take it from me in the next chart you'll see that we have significant customers. Next please Natasha.

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you'll see that we have significant partners who have already using the equipment and to great effect if you will taking Sanexen which is a very large player in

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In Canada, in fact, and their line I'd like to draw your attention to is, “It's clear that this technology is a game changer in our industry”. So they're using five every single day in in North America. Next please. And you'll also see that here in the UK, we have a great partner in Wessex. And Eddie Rant who many of you may know, speaks very highly of the Pipe Puller in the sense of its speed and the fact that is much less disruptive than other methods. So that's it. Thank you. Next, please. That's it. That is the COVID. Pipe polar. And if you have any questions, I'd be glad to take them.

1:27:30

Perfect. Thank you very much, Simon, another great presentation. I'm perfectly cut to time. So thank you very much. And as with the others, we'd just like to ask you a couple of follow up clarification questions. And they are, what would you like from a partnership with a water company or a NAV? And how would this partnership benefit the solution development moving forwards?

I think the key thing that we like to see with a partnership is to is to work very closely and hand in glove with that water company partner to instill the take up of the innovation within the organization. Because it won't work every single time. There's no doubt about that. But if we have the right partnership and the right,

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working, working relationship with that with that water company, we can make sure that it is adopted right the way through to the front line, which obviously is it is absolutely fundamental, and it is where we've got to with major water companies like Wessex.

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That's great. Thank you very much, Simon.

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Great. Well, that brings us to the end of the brokerage event today and leaves me just left to say a really huge thank you to all of you for the time it's taken you to prepare and plan for this at what was really very short notice. We are very grateful and we hope that this is an effective method.