Innovation in Water Challenge Partnership Brokerage Session 2

Recorded on 18th January 2021

# Speakers

Ben Tam, Isle Utilities
Ben Gross, TellJO
Lars Wallden, Laiwa
Alireza Abbasi Monjezi, Waterwhelm
Carolyn Hogg, Aqua Gratis
James Whinney, SuperVAWT
Paul Wilkinson, ClearWater Sensors
Alex Newman, Propelair

# Transcript

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Ben Tam, Isle Utilities 00:04

Great, well, it seems a since we have numbers now, so certainly around 50, guys, and I can see lots of people have joined. So I'm gonna kick off. Just to go, Hey, so my name is Ben Tam, welcome to this first the second brokerage event. And also, it's on the opening day of the competition. So really excited that we finally reached up to this point, and were able to get going properly with some of the proposals and guidance on that side. So thanks, everyone for joining thanks, enthusiasm and being in touch up till this point. Today's session has been all around getting companies who don't have so much of a footprint in the water sector in the UK, the opportunity to have a way to pitch in to the sector. So we have a good blend of SMEs, water. And so on board companies here to help answer some questions. The format's gonna be really simple. And it's designed to be short, because we want people to follow up outside of this as well. So the format is going to be four minutes of presentation with two minutes of follow up questions and an opportunity at the very end of this today to also have some some actual follow up questions. By the way, if you hear anything on here, you want to follow up, hopefully, they'll be the way to contact each other. There's lots of information now on the new launch website. But also through through ourselves at IR RF and Nesta just a little bit of housekeeping. If everybody because we're using just the zoom webinar, zoom meeting platform, if you keep your videos off and on mute, during the presentations are separate from the presenter. And it's going to be recorded. And so it will be up or hosted later on today or tomorrow, with full transcripts on site. They'll also be a poll at the very end in that quick bit of feedback is really helpful just to help keep staring us in the right way. So please just take them the minutes, it takes two or less to just to fill that in at the very end. And we're going to be using slider for questions. So there'll be a setup in the moment there. But if you go to slider and IWC as the hashtag, then you will be able to answer ask your questions. It's just the best way for us to keep track of them, do upvote other people's questions on there. And we can also respond to things outside of here because we'll have a full record for them. So with that, I'm gonna just give her a couple of slides. And I know that we've got some presenters on the line as well. So we have one master slide deck. So in a crisp, witty side, it's gonna be very much when Next slide, please. But it because so many present presenters in one go, it's always gonna be the best way. So please bear with us as we go through some of that, and are to restrict on timing just to keep it fair across the board. So it'll be a strict four minutes, I try my best to give you a 37 32nd wave. But after that, we'll try and try and close as close as possible, please. So I'll just get my next slide, please. And Sasha. So we have eight presentations today. And we'll dig into those the moment of beer and cheese them the clarification questions. If you get to slide out access code, IWC, you'll find everything on there. Next slide, please. There we go. That's the format for everyone. Just joining on now is there the four minutes of present presentation and the two minutes for clarification. And we'll try and get any extra further questions at the end. Next slide. Just to make it really clear, as well for anybody joining this later, or viewing this later on, this is there for the innovation and water challenges a brokerage session. We're launching today. And coming up very soon the main competition will be launching in springtime. But the aim of today is to try and help companies and potential partners enter the enter into the water sector and has an immediate feedback from water companies in the UK. So we're open today. The entry period then closes on the 26th of February. So about six weeks, get everything in the judging panel then get to work after some evaluation. And winners will be informed by very early April so the money can be dispersed. And just be ultra clear. The lead applicant on those proposals has to be one of the ward companies in England, Wales or 17 of those, one of the new entrants in England and Wales and they will partner up with solution providers, technology companies, and other ways of working to try and put strong applications in strong entries in great With that we're heading up to our our first presentation.We've got TellJO and Ben Gross is going to present here we got Ben there either then

Ben Gross, TellJO 05:18

I'm here I can't stop my own video though, if you want to see my face alongside this, but it's okay to have your video on. I

Ben Tam, Isle Utilities 05:24

think he's being a presenter. I think it's a live one screen. And but yeah,

Ben Gross, TellJO 05:29

so if you're ready to go then glad glad I scrub the dressing gown this morning then. Okay. Thank you very much. Hi everyone. My name is Ben groves and we are telco. If you could move the first slide along please. We are here to find a water partner that not only wants to improve their own customers well being reduced levels of arrays and fulfill pr 19 obligations. We are searching for a partner who is as driven as excited as we are by the idea of building a revolutionary service that's adopted by multiple industries to improve the lives of millions of people. Despite the enthusiasm shown by all parts of the water industry to work on improving affordability and vulnerability, without too rapid innovation, and adoption efforts will fall short. Next slide please. The gap is vast, no company met all of their PII 19 obligations by the end of 2020. CCW says that most customers do not know about priority services. And there are five times as many people on Universal Credit alone and on a social tariff scheme. Next slide. Please. Tell Joe is built in the only digital discovery engagements and support service that enables a water company to proactively understand their customers understands their customers characteristics, situations and circumstances. Next slide please. Simply when a trigger event occurs, such as a missed payment, failure to answer the door for a pre arranged visit or some other procedural instance. And invites to a wellbeing assessment is sent to the customer's phone. It takes less than seven minutes to complete. They provide explicit consent, and most importantly, they know you care. Next slide please. Our work to date has been with housing associations and councils conducting pilots of the service to prove that it works. And it does 15 times more people disclose vulnerability and affordability information. Almost 40% choose to provide extra information over and above what we asked for one in three, enter into proactive support systems and drive better outcomes. So why do we want to take part in the challenge? Next slide please. We know and we can evidence that we bring dramatic improvement to your business in terms of customer satisfaction, profit and compliance, to name a few. What we haven't yet done and want to prove within the challenge is how to adapt, work alongside or on top of an existing priority register. We believe the benefits that will accrue through automation and digitalization of an existing service will far exceed our work to date. Ultimately, through this work, we will create a new modern active vulnerability and affordability register that is able to automatically engage and track people's changing risk and crisis. This means the partnership will create best practice for the whole of the water industry can use and benefit from indeed, our end goal would be for this active register to become a central tool. This is adopted across industries and agencies. final slide please. I just want to say this to finish. There are 16 million people in the UK who suffer from diminished well being as a result of fungibility and affordability issues. telco believes that we can reach 3 million of them. If you weren't with us, we could make a difference to 16 million. Thank you for the time. Please let me know your contact details if you want a live demonstration of the service more than happy to run through the back office full of people. Thank you

Ben Tam, Isle Utilities 10:05

very much, Ben. That was TellJO is pretty much bang on time. There's appreciate the quick and speedy delivery. I've been monitoring sliders, no direct question just a moment. But I imagine there will be as we go through. So if you stay around towards the end, make sure that people have that opportunity. From this morning, I just pulled into someone just in case and we did have a question if they want to put on slideshow. Or if there's one question people could come off mute now. That is not we will just wait until the end. Bro would say that that pause is uh, we'll move on to the next one. But thanks very much, Ben, thanks for being there. Thanks for kicking things off for us. Next up, we have liwa. And we have a really quick presentation by Lars Walden. Get Lars to come off mute and turn the video on.

Lars Wallden, Laiwa 11:10

Yes, hello. Can you hear me now? Perfect. Yeah,

Ben Tam, Isle Utilities 11:13

thanks very much Lars

Lars Wallden, Laiwa 11:16

think. Thank you very much. Oh, hello, everybody. And thank you for your interest in this presentation regarding the digitalization of existing metering infrastructure. My name is Lars Walden and I'm the managing director of Livewire communication. Our company is based in London developing technology for the silicon submittal industry, as supported by innovate UK and the sustainable Innovation Fund. This year, we are launching our patent pending optical Meter Reader for utility meters. Next slide please. digitalization of water meter reading. Most meter readings are today done manually, but long time between actual readings of customer meters. Sometimes meters only read once or twice a year. In many cases the bills are generated with estimated values resulting in great inaccuracy of the billing and literally information of the actual status of the consumption. government regulation and customer demands tries to tie me to reading so much your feelings are real time monitoring of the consumption the status of the meters improve the network and minimize losses, installing EMI advanced metering infrastructure and smart metering systems in more high investment the scrapping of the existing metering infrastructure. This is not only very costly, but also takes a lot of time and involves often complicated installations of the new digitalization and the socialization of the meter data and real time improves system operations and customer management of the company three the technology enables cost effective meter digitalization. Next slide.

Lars Wallden, Laiwa 13:00

Mine was optical metering, I easily mounted on top of existing meters and monitors the meter using multi sensor technology providing real time high resolution data transmitted to the cloud through existing data infrastructure provides real time status of the meters including consumption, environment faults and leakage detection. cost effective system for solving existing infrastructure investment on both mobile radio connectivity and local area networking arenas can work in many configurations as well as connected to the existing sets to smart metering networks. So to carry this provide a utility company and they use this with real time data to give a true and reliable insight on the status of the mesh and date of the meters. Next slide please. The optical readers are easy to install securely on existing meters and provide a non intrusive installation. The meter uses computer vision with machine learning technologies to read the meter register with high accuracy high resolution. The device has multi sensor design providing measurement of a number of parameters, leakages detection of micro flows, flood detection for external both present and ambient temperature for example, it also have tampering proven steps detection providing secure functionality with up and pending multi sensor technology. These devices are not lost connectivity with mobile radio for NB IoT and local network and use a CB Bluetooth a friend so close to an operator can connect to Mr locally and check your status and set. The low power design provides long battery life is always shows a 10 year lifespan sign using machine learning technology ensures high resolution data and high accuracy for this big data. Next slide. We're currently supported by inwhich. UK with a grant for sustainability Innovation forms. We're planning for pilot installations during spring 2021. And you're welcome to contact us for more information. Next slide, please. Thank you very much for listening to my presentation. If you're interested to speak more with us, you're welcome to contact me at any point. Thank you.

Ben Tam, Isle Utilities 15:19

Thanks, last exactly four minutes. When thank you for that and for for countering through so logically through through your technology that we do have a question outside. So I'll just dive straight into that. And do customers have access to their meter reading, as the device seems to block or visual reading when you put these disciplines on topics?

Lars Wallden, Laiwa 15:40

Yes, you can new when you want, just ask for picture of the image of the meter. So you can get it on your mobile or or just ask it. So it would sound it will take a snapshot with cameras.

Ben Tam, Isle Utilities 15:57

And it gets direct to the customer. So the customer has a

Lars Wallden, Laiwa 16:00

lot depends on how you configure the system and what access the customer has to all the data we make available. So you can integrate it with existing apps or other customers systems that are and then of course it's about it's non intrusive. So it's very easy to remove them put on again without problem if someone absolutely wants to read them. Or this is acceptable for for the standards a thought that says the meet the register needs to be read the possible to read.

Ben Tam, Isle Utilities 16:32

Brilliant. Thanks. Now the question probably up on slide Oh for me. So thank you very much for presentation Lars. Again, if you stick around to the end, there'll be another opportunity for further questions. I can see some of the things coming through Patel j now. Again, Lars thanks for participation. But Next up, we have Waterwhelm presenting, but just get Dr. Alireza Abbasi Monjezi to to unmute and to put their video on and I apologize for doing that for butchering the name.

17:17

I thank you very much Ben. So I'll start with video. And

Ben Tam, Isle Utilities 17:24

welcome. I'll give you the floor is yours. Thank you very much.

17:27

Thank you, Ben. So good afternoon everybody. My name is Ali and I am the founder of Waterwhelm I'm delighted to be presenting our proposition today as part of this water Innovation Challenge. Next slide please. So, this is an overview of our innovation resulting from years of academic and Industrial Research. We have developed a forward dismisses technology driven by waste heat. So, instead of using high pressure pumps in reverse osmosis, we use an intermediary solution known as the draw solution to be able to treat desalinate or the water the feet. This process is powered by waste heat instead of an inch TriCity because we have removed the need for running at high pressures. To applications of this technology highly relevant to wastewater treatment works are one using waste heat from biogas engines at wastewater treatment works to treat final effluent and supplied process water. For example, boiler feed water or water for mixing with chemicals or simply industries that may be next door with a need for water. The second application at wastewater treatment works is to D water either sludge or digestate, in order to reduce the consumption of flocculants as one of the very few oil and gas derivatives widely used across the sector. So both of these applications would have a significant impact in reaching the sector's netzero ambitions and adapting to climate change. Next slide please. The solution offered here will take to waste streams and deliver financial and environmental value to wastewater treatment works. It is 35% lower in terms of capital costs, and 80% lower in operating costs compared to what's already available in the market. So by recycling water and wastewater treatment works, we'll be able to not only reduce costs, but also the demand on the already stretched portable water supply. Reducing the consumption of chemicals and using waste heat will most certainly contribute to the environmental crisis. formance of wastewater treatment works. And the technology will also provide a platform for a sustainable transition to water reuse, which is becoming a necessity in certain parts of the UK. Next slide, please. So where are we in terms of technology development. In March this year, we will start testing our first plant treating 10 cubic meters of final effluent per day to deliver potable water. This patent pending technology will also be tested for sludge and digested dewatering and also desalination. Now, what do we need from water companies, it would be a great opportunity for us to try out the technology at wastewater treatment works. And through that generate data on the financial and environmental savings that can be achieved using the technology. And we would also engage with a partner in company to establish the flaws of water energy chemicals at a specific site, or several sites to develop a full business case for industrial scale up. Next slide, please. So thank you very much. And I would be delighted to hear from you if any of this is of interest. Thanks, Ben.

Ben Tam, Isle Utilities 21:25

Thanks, Ali. Yeah, thanks that presentation of a clear clear out the sector, pretty clear on WhatsApp without him with one would like to do. I've got one question here, just in the top here, go for what's the final quality of final effluent required for reuse.

Alireza Abbasi Monjezi, Waterwhelm 21:44

So this technology is basically offers a step change in terms of technology, there is a lot of tweaking that will be done and hence the need for being able to partner with a water company to assess and analyze the final effluent water quality. But because this is aimed at, you know, really, really dirty water and lots of TDs. So for example, we'll be able to test this for desalination. Most final effluent qualities in the UK will be compatible with this technology.

Ben Tam, Isle Utilities 22:18

Okay, that sounds pretty clear. And what are you considering a state of the art for capex or OPEX comparisons?

Alireza Abbasi Monjezi, Waterwhelm 22:27

reverse osmosis. So the reason why this is a lot cheaper in terms of both capital and operating costs compared to reverse osmosis is that we have removed the need for pumping the feed water really high pressures. And that's why we don't need high pressure pumps. We don't need high pressure piping or vessels and energy recovery devices because of that draw solution and the processes that we have designed in this technology.

Ben Tam, Isle Utilities 22:58

Well thanks for that. There's a few more questions here. We'll try and get to them maybe in the follow up after this. But I think the last one I came up with, will the pilot test the three types of water types you mentioned.

23:11

Yes, absolutely. So the pilot has been designed in a way that is capable of taking all those three feet.

Ben Tam, Isle Utilities 23:21

Brill. Thanks for that rapid fire. Answering of questions there. I'll leave it at that. I think there might be a couple more which should come through a slider bar. Make sure there's a sense chat and we'll pose them right at the end. But yeah, thank you very much for that presentation.

Ben Tam, Isle Utilities 23:35

Thank you, Ben.

Ben Tam, Isle Utilities 23:38

Just move on to our next presenter Aqua Gratis and Carolyn Hogg. Carolyn Hogg is going to present a few come off mute.

Carolyn Hogg, Aqua Gratis 23:51

off mute and oh, I still there. Yep. Gone strange. Hang on. Yeah, got a different screen came up there. Right. Okay.

Ben Tam, Isle Utilities 24:06

Yeah, go for it.

Alireza Abbasi Monjezi, Waterwhelm 24:08

By the chair water accounted for 35% of household water use. Aqua Gratis short retention. Micro domestically water reuse system is carbon negative outclassing. its competitors. It captures bath and shower water. We use it to flush the toilets, making a 30% saving on domestic water consumption. The Smart Meter enhances the savings to 45% of water companies are obliged to reach domestic water consumption from 140 litres per person per day to 100. I'm Carolyn Hawk, Managing Director of cascade water products. My award winning team wants to make the world a better place by saving water in the home. Processing water and sorry Next slide please. Processing water and sewage is responsible for 17% of local greenhouse gas emissions. It's shocking. Water is an energy consuming sector. New Energy efficient solutions need to be implemented urgently. The contribution water makes to climate change is not discussed publicly. Transparency is required. kuratas ticks so many boxes. It's griffes great sustainability impact provided little cost and there's almost market ready. sustainable water is one of the biggest challenges facing water companies. Next slide, please. Domestic say why do we continue to use drinking water to flush our toilets. Domestically water reuse is not new. Maybe there has been a reluctance to wholeheartedly engage with it because earlier clean water reuse systems are perceived to be expensive to install, maintain, and also not built with the circular economy in mind. But he wrote micro domestically water reuse system to spark the interest of the water companies and developers apparatus designed to be carbon negative in orbit single households. It is energy efficient, with gravity fed self cleaning stainless steel filters. Africa has been built to surpass the British Standard eight five to five. So another feature is a gravity fed toilet that's having a toilet always working in a power cut. Next slide please. The government, the Department of the Environment and regulatory bodies are put into water companies under pressure and under unprecedented legislative and fiscal pressure to meet the water challenge. The water companies have a section in their website, encouraging the customer to change their behavior and be more water efficient by taking shorter showers, turning off taps. When brushing teeth and washing dishes. These actions give a 5% water saving apparatus gives at least a 30% saving in one hit. Next slide please. Water companies can't achieve this change in behavior on their own and depend on the cooperation of new home developers to work in partnership to achieve these targets. In the UK public interest in greywater recycling on an individual host basis is growing waterwise recently published research on green water reuse and rainwater harvesting. It's available on their website. This is a significant breakthrough. But more work to be done to increase the widespread awareness on the benefits of adopting domestically water reuse. It's a win win situation for customer utility and the environment. We are targeting to build the build to rent and social housing market. We want to create a pilot collaboration with water companies, house builders, housing associations, and the Duchy of Cornwall helps save our planet for future generations by supporting apparatus protecting the blue planet one flesh at a time. Thank you.

Ben Tam, Isle Utilities 28:16

Thank you, I suppose on as well. This is a is easier than make my job as Chair particularly easy. So thank you so much like that shop presentation. Got a few questions. Oh, question how excited for you. If the system is run through gravity, are you relying on the toilet being lower than the shower straight bath waste?

Carolyn Hogg, Aqua Gratis 28:35

Yes. And we have designed the system so that with with a two story house in mind, so that the bath and shower is above the system and it's fed down to the downstairs toilet. If we are in the situation we are in the it's on a same level, then yes, a pump will be needed to to to pump the water to the system. It is something we thought about.

Ben Tam, Isle Utilities 29:04

Thank you. I guess I'm just one clarification question would be what is the exact you would want from from a potential water company to evolve in terms of a project or a trial here?

Carolyn Hogg, Aqua Gratis 29:18

Well, I would like them to help us get access to open doors so that we can get into our our target market. Have the child's with them. Start off with a small test house and then move into a bigger pilot.

Ben Tam, Isle Utilities 29:38

Thank you. As one further question here, we head off how much energy is used per liter by the unit to clean the water from the showers.

Alireza Abbasi Monjezi, Waterwhelm 29:51

How much energy I haven't done an energy calculation but as I said it's done by gravity. So there's no no elec Electricity, the only electricity that is used is to pump the water to the upstairs toilet.

Ben Tam, Isle Utilities 30:04

Okay. And so one more here has gone from my screen. Oh, here we go. So size up voted it, who would pay for the kids and install and who would maintain this kit,

Carolyn Hogg, Aqua Gratis 30:25

the housing association or the developer would be the person that would pay for the system, then what we would expect, though, is that the water companies would be giving the developer a discount on their water connection charges, so then it brings the cost down, we also have the Green Deal that is being launched as part of the build back better. So we have got energy efficient doors and windows being encouraged to be installed. And I do know, I've seen that waterways have written a letter to get water considered for the Green Deal as well. So there could be discounts available for that through a Green Deal package. But in the maintenance, we do an annual maintenance. And we expect that to run like a boiler service. Now to start with, we would be running the maintenance program. But it does give the water companies if they wish to engage with us that they could run the maintenance program.

Ben Tam, Isle Utilities 31:28

Thanks for that clarity there. Yes, potential use there in terms of that near I guess is what this kind of fund is here to do is help smooth over these early stages and try and understand what business was in my webinars is funded.

31:41

Thank you, Carolyn.

Ben Tam, Isle Utilities 31:45

I'll move on to our next presentation. Our next presenter presentations for Clearwater sensors, Paul Wilkinson, if you're there,

Paul Wilkinson, ClearWater Sensors 31:57

and then coming through okay.

Ben Tam, Isle Utilities 32:00

Fantastic. I'll hand the floor to you and give you a few minutes.

Paul Wilkinson, ClearWater Sensors 32:03

Thanks. Fantastic. So good afternoon, everyone on Clearwater sensors. We provide autonomous water chemistry monitoring instrumentation, we can lower the costs of accessing high quality data in really remote high difficulty access or environments waiting to monitor long term Cloud Next slide please. So a little bit about our capabilities in terms of the sensor instrumentation itself. We are based on wet chemistry assays, rather than an electrode Opto type systems. And those we provide parameters that we can want to say different so nitrate, phosphate silicate, and iron with onboard reagents. Onboard reagents are all self contained, we can deploy into the environment for a very long period of time. With the system as presented in the picture, we can monitor for three months, check in hourly readings. longer periods is dependent on user defined sampling profile. So if you want to monitor every half day or day, we can set up your data much longer longest period you've had is your long type deployments. The cartridge itself is hot swappable, so you can hot swap in and out the new reagents and start measuring again fairly quickly, limiting the amount of downtime you have for your monitoring case. And probably one of the key aspects is that we can hook into several data solutions and have you several data solutions in the past to provide the data in close to real time through web portals or telemetry, we use things like 3g networks like low power one. And if if you have a particular route, and particularly deep pockets or region, we also log data on board as well. More could hook into any existing infrastructure through standard protocols, or reagents installed on board. So we don't expel anything to the environment. Just an example of our user profile data profiles that we can produce at the bottom there. So that's a two month long description of your profile in Greenland's with some discrete something just a benchmark and truth and make sure that our data is is comparable to what you'd get for the manual in the lab sampling. Next slide, please. how it all works, and we as a company that's ourselves. So we're a very young company, we spun out University of Southampton, the UK National oceanography Centre in 2020. However, the technology itself has been done for 10 plus years based on microfluidic platform for iron standard lab basic wet chemistry analysis. With those deployments, we had 200 plus in various environments, marine and freshwater They're going to give a guest the example of nitrate nitrate sensor on the bottom left there. So yeah, 200 Global deployments, this includes deep ocean. So we can drop down to 6000 meters depth, we have done deployments such as that,

Ben Tam, Isle Utilities 35:16

Ten seconds Paul,

Paul Wilkinson, ClearWater Sensors 35:18

children. So just closing out. And as I mentioned, we're coming based on a common sense of platform. So although with those are the parameters that we do have available magic first place like a design and pH, we can integrate any kind of standard colorimetric essay onto our common platform itself. And we are working towards some of those promises you see in the bottom left manganese, ammonia and integrated conductivity, temperature, dissolved oxygen. We're a new company coming from Marine deployment backgrounds. So we're really interested in understanding the key parameters and key technical features that are required to the wastewater water industry. are in agreement.

Ben Tam, Isle Utilities 36:07

Thanks very much, Paul. I'm just looking for questions which have come up, nothing's been around. So checking the zoom site as well. I guess just one really quick one for me on that slide you had previously? Is it what is that a sensor on a chip that you've got there, which is in the hand in the glove?

Paul Wilkinson, ClearWater Sensors 36:24

Yes. So that's our integrated CT do maitrise electrode for monitoring CTD. So that's kind of the next integration, it's integration of that chip and those parameters on to a nutrient sensor platform. So the next iteration, over the next six months, we'll be offering one of those key parameters, as well as integrated CT do it all on the same platform, which has just

Ben Tam, Isle Utilities 36:50

come in. So thanks for answering that. And when do you expect to be able to measure ammonium?

Paul Wilkinson, ClearWater Sensors 36:56

So ammonium, obviously, particularly one of interest in this require some quite interesting technical development in gas exchange on microfluidic platform? Would you have a development program based in national Shoku center and innovate program within the company itself? Difficult to be exact on it, but within a year or so? Pretty?

Ben Tam, Isle Utilities 37:19

Thank you. Just the same last question before that, what would you want from a water company as a partner in this,

Paul Wilkinson, ClearWater Sensors 37:28

we are very much looking for guidance and steer on some of the key technical features that are needed for deployment in those specific environments. And then she would come from a marine deployment background with many successful dips in the ocean. But as with there will be very nuanced technical features that are required for the water industry that we begin to understand and actually integrate into our development program. So anyone that can help us understand that as well as anyone who can offer actual real life deployments in those environments of interest will be will be fantastic.

Ben Tam, Isle Utilities 38:05

Thanks for Thanks for answering those questions. If any more come up, I will post them at the end. But we'll move on to our next one. This is a presentation on floating wind turbines super. struggle is super, super boring. There we go.

Ben Tam, Isle Utilities 38:27

Thanks, Jay. Thanks for Thanks for coming. on that one. I will hand over the 40 year you have your camera and you're muted.

James Whinney, SuperVAWT 38:39

Thanks's BenIs the video working? I

Ben Tam, Isle Utilities 38:44

can't I can't see you but your your your audio is working fine. So that that's fine.

James Whinney, SuperVAWT 38:50

Okay, I've started the video. And we're good afternoon, everyone. Thanks very much for the opportunity to introduce you to superhot My name is James Winnie. And I'm the CEO and founder of the company.Next slide please.m So that Shannon show off what changes map zero. Next slide, please. So what what is floating window it's got to deal with the wood industry. And well floating wind, according to the Committee on climate change in their August 2020 report says floating wind is a strategic technology for the UK to reach net zero by 2050. And the government is going to support one gigawatt of floating wind power in the UK with increased financial support in order to accelerate the technologies commercialization. And that the target therefore is for that one gigawatt to be in to be built or in the process of being built by the government is The government is also supporting investment in offshore wind, because the build out of offshore wind is so large that it's looking for new investors into the offshore wind sector. And there will be an increasing need for floating wind technology from 2013 to 2050. As the better sites are built out for fixed foundations, and global forecasts, expect to see 250 gigawatts of floating wind turbines by 2050. So it's around the world. That's my next slide. So what is superhot? And well, it's it's a vertical axis wind turbine, which have been around until for millennia, and the first wind turbines will most likely and vertical axis wind turbine. And the technology is primarily started out being a wind turbine technology. And it's new and not obvious. And it's been patented. We're just in the UK but in other countries as well. Independent assessors from innovate UK have rated the technology as game changing and disruptive for flipping London particular. And floating, superhot will be productive, efficient, and low impact. Expected substitutes expect superhot turbines to substantially reduce the cost of electricity for floating wind firms. So what is the context for the water sector? Well, superhot is looking for funding and test site for a proof of efficiency turbine about 250 kilowatts in size on land and then possibly on water. And also looking to see if there's any interest in the commercial business development of floating wind farms in the future. That could be ppas flat power purchase agreements from floating wind farms, or investing in the commercial development of the farm wind farms themselves. Next slide please. Little bit ofLatin sea Ventus in alveus call bears Neil direct, which I think means if you have windy water, you want your want for nothing. Thank you very much for letting me bring this opportunity to your attention if you're interested in leading or being a participant, and please do get in touch with me. And there's my email address and telephone number. Thank you.

Ben Tam, Isle Utilities 42:35

Thanks, James. And he has a really interesting presentation. I'm sure this will get in front of different ag teams across the sector. There's a deeper cap on this. I can't say there is a question here. Why the water industry? It's like a question.

James Whinney, SuperVAWT 42:54

And that's a good question. Yeah. I think probably because you've got solar on reservoirs. And obviously, you know that solar is now going offshore. And you see a number of projects that are being developed with solar out at sea offshore. And so it's you might be a nursery for technology, I think the water industry, you can look at things with fresh eyes maybe. And obviously, reservoirs would be a cheaper place to test this technology than going offshore straightaway. It's very expensive to do is obviously a safer, easier place to trial, a new technology, like a floating wind turbine. So pretty ideal really for that.

Ben Tam, Isle Utilities 43:41

Sounds Sounds intriguing. There could definitely be something there. I know we had to build up around floating solar, there's no direct questions here. You've got a very clear ask for the sector. So I won't ask any more clarification, clarification questions unless maybe send something through. Now, resume nothing there. Be a thank you very much your presentation James. Like I said, I'm sure go in front of different energy teams. If you stick around. If there's any other clarification questions, I'll try and answer them. Ask them at the end thing. So final presentation is by propelled Alex Newman will be presenting if you're there.

Alex Newman, Propelair 44:32

I am under

Ben Tam, Isle Utilities 44:36

4 minutes,

Alex Newman, Propelair 44:38

pretty much. So good afternoon, everybody. My name is Steven and I'm the director of innovation here at Bellaire and today I would like to introduce you to and talk to you about our proposal for the Innovation Challenge. If you move to the next slide, please. So here at propel eo radio I'm a manufacturer, what we believe is the world's lowest order flushing toilet, we use a combination of air and water. And through that we are able to reduce water use to just one and a half liters per flush. Now, I think you'll know the average person uses 141 liters of water today, but I, which that's that's increased from 85 liters since the 1960s. And 24% of that is used for flushing toilets. So that's 12,350 liters of potable water flushed per person per day down the drain. And you will know, I think it was mentioned earlier in the presentation that the industry set very strict targets to reduce personal water use to between 70 to 100 liters per person per day, I think I've seen by about 2065 as soon as possible. Another thing you may also know is that toilets are responsible for leaking toilets responsible for wasting up to 400 million litres of water every year. Next slide, please. So our current product has been developed for the commercial market. And it provides our customers with water savings of up to 84%. And we also address the leaky loop issue. We do that because we don't use a conventional drop for health. And we reduce germs by up to 95% through our unique lid which has got to be closed to start the flush. So we've recently completed a horizon 2020 project, which is assess the impact of reduced water on drains. Glad to say that that project was very successful. Working with ex university we show that a reduced water actually doesn't affect rainstorm. And the project also focused on identifying a route to enable entry into the residential market and the residential market much larger than the commercial market. In the UK, some 14 million toilets installed in residential properties. So a great opportunity to reduce water usage in residential planes. So our short term focus has been on the commercial proposition. We do redeveloping our product fixing an autoclave mid to improve hygiene. And we're also looking at IoT based upgrades, which we think could have applications to advise of potential drainage issues and other benefits including monitoring flush counts and identifying service needs. Next slide please. So our innovation and water challenge is to develop our existing product further to refine it and develop it so it's fit for the residential market reasons and horizon 2020 project has enabled us to identify specific needs in the residential sector. So lower cost, comparable size to current when it's available, and ease of installation of minimal maintenance needs. So currently, we focus at the the commercial market, where you know, installation and maintenance is is pretty much the norm in the residential market, we need more refinement to be able to enter that market. So we're seeking funding to support the next exciting stage of our development we think is exciting, which will enable the benefits of LSW unique water saving technology to be refined to suit the residential market and enable water companies and your customers to be able to gain the reductions in water product can provide. And we'd love the opportunity to discuss proposals with any interested parties. Pretty much.

Ben Tam, Isle Utilities 48:44

Thanks very much, Alex. Rounding our presentation. Thanks all presenters are sticky really close to time and keeping this a fast pace event. Do you have a question here to just come up. He also provide disabled toilets using the same technology.

48:59

So our current product can be fitted in to disabled washrooms. We provide guidance on how they can be achieved, and certainly with some of the new features that we plan on launching are also open close lid that'll make it even more applicable for for that kind of environment.

Ben Tam, Isle Utilities 49:21

Thanks for that. Another one here. I've seen similar toilets in service stations, what's the difference between these and your product?

49:30

So the ones you'll have seen in service stations will actually be our current product. The product in service stations was first generation and you'll start to see new generations coming through that we're working on at the moment. But the idea is that is very much those products designed for the commercial market. And what we're looking to do through this challenge is make it more suited for the residential market. And there are some differences that we need to look at dress. Thank you.

Ben Tam, Isle Utilities 50:03

And a final question here, how often is maintenance required most the cost difference compared to conventional toilets,

50:10

on average? So, maintenance we we test us with all plumbing products that are required to withstand the 200,000 cycle lifetime tests, which, which we have done or tested and approved to. So we were comparable maintenance to two standard toilets. Yes, we do have a few more components, that we believe that they're robust enough in the market. We're looking to improve upon that for the residential way to be now.

Ben Tam, Isle Utilities 50:44

You seem to have got a whole raft of questions here. So good. I've got a couple more. So do you standard plumbing fittings? Yes, we do. There's an easy one. Different is installation kind of standard Palmer install it.

51:00

So installation, we fit straight to conventional drains. So yes, a standard plumber can install. The one thing that we do need is an electrical point, which usually does require smokey coming in and just filling in a few square.

Ben Tam, Isle Utilities 51:18

And the last question I'll try and think I get the sense of it. Is it propellers for propeller for homes is starting with housing associations are similar or going straight to any households?

51:30

I think we are open for discussion. I think our initial thought probably is to get the awareness and raise the awareness of the product in the residential market and housing associations would make a lot of sense. So yes, that's, that's that's probably a very good way to start. I think it's about raising awareness to really get into that market place and gain the benefits from everybody.

Ben Tam, Isle Utilities 51:58

And thanks, Alex. Thanks for that the rapid fire questions.