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NUMBER 02, 2019

**BLUETECH
FORUM
2019**

**BRIGHTWORK:
GROWING
BY SHARING**

**PURE
ENTREPRENEURSHIP!**

**'NOBODY WANTS
TO BE A GUINEA PIG'**

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STRAIGHTFORWARD



EXPO 2020 DUBAI
THE 35TH EDITION OF THE WORLD EXPO



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THE FUN FACTOR IN WATER MANAGEMENT



BRIGHTWORK
GROWING BY SHARING



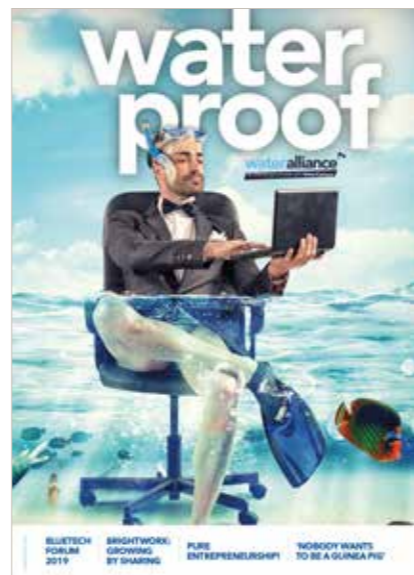
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COLOFON

WaterProof is the magazine of the Water Alliance, a partnership between government, research institutions and industry in the field of innovative and sustainable water technology. From its base, the WaterCampus in Leeuwarden, the Water Alliance builds on the 'water technology innovation chain'; a process whereby new ideas from universities, laboratories and test sites are converted into worldwide marketable products. WaterProof provides regional, national and global information on developments, results and background in the field of water technology.



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'SLOWING DOWN' by Hein Molenkamp

Ten to twenty years ago, the Dutch word 'onthasten', which roughly translates as 'to slow down', was extremely popular in the media and society. It was as if we were all fed up with busy schedules, rushing to busy meetings on busy roads. I think it was a good thing, even if only because it reminds us to stop and think about the truly important things in life.

An entirely different word with a similar meaning is 'vertragen', which means 'slowing down' or 'to be delayed'. For someone ploughing on non-stop like a headless chicken, stopping is almost impossible and slowing down is sometimes the only option.

However, 'vertragen' has a very negative connotation in the world of business development. Most entrepreneurs, including those in the water technology industry, are passionate about their trade and have a good idea of where they want to go. Anything that delays the route from A to B is annoying; it costs time, money and energy. At Water Alliance, we get that. We understand the importance of maintaining the tempo in processes, the importance of staying in a flow. Delay is uninspiring; it takes the momentum out of your process and postponement can even lead to cancellation. That is why we make it our core business to help companies accelerate their businesses.

This issue of WaterProof is all about that. It is filled with topics which relate to shortening the time to market. The stories are inspiring and often educational. They may even raise new questions, such as: what can WaterCampus Leeuwarden and the Water Alliance do for your company when it comes to your international ambitions? The answer is simple: in many cases, a lot! As European Water Technology Hub, we are heavily involved in numerous European projects and we have a lot of contact with other water clusters both in and outside of Europe. There are a lot of opportunities for companies there. And for anyone looking to expand their business outside of Europe: through our participation in a variety of symposiums and the international 'Global Water Tech Hub Alliance', we are active pretty much all over the world. In short: if things are moving slowly and you are not yet ready to slow down, just give us a call.

Hein Molenkamp
Managing Director, Water Alliance

'Anything that delays the route from A to B is annoying; it costs time, money and energy.'



High voltage laboratory opens at WaterCampus

On 18 April, Cees Buisman of the Board of Directors and Erica Schaper, chair of the board of NHL Stenden opened a high voltage laboratory in the Water Application Centre (WAC) on the WaterCampus. Both organizations are currently working on research involving high voltage and water. To create synergy, they decided to open a special laboratory together.

The lab will be used by Wetsus (PhD's, researchers and master students), NHL Stenden (bachelor students, applied research) and senior researchers from both organizations. The laboratory enables them to study electrohydrodynamics, which translates to: the study of the movement of electrically charged fluids. One example is electrospray, in which water is passed through a small, electrically charged atomizer to create an aerosol. This process is already used in industrial applications, but it can now be studied further in the laboratory. They will also research how lightning discharges work under water.

Rendez-vous with the Maritime Alliance

The WaterCampus was brought a visit by Michel B. Jones - president of The Maritime Alliance - in early June. The Maritime Alliance is the cluster organizer for the San Diego maritime technology community and fosters maritime business and technology innovation around an international environment. Water Alliance and the Maritime Alliance have built a good relationship over the years.

This visit was focused on possibilities of further cooperation between the parties. Water Alliance's Managing Director Hein Molenkamp and International Business Developer Harro Brons also invited several Dutch companies (Foru Solutions, Berghof Membranes and Van Heck) to pitch their technologies to Jones.

"Sessions like these lead to growing business and cooperation in both networks", Molenkamp says. "I'm very satisfied with the follow-up we planned during WEFTEC (Chicago) and BlueTech week (San Diego)."

WAFILIN SYSTEMS: COLLABORATION WITH SUEZ

Last March, Wafilin Systems announced that it has entered into a Channel Partner agreement with SUEZ's Water Technologies & Solutions. This will enable strategic collaboration for the development and commercialization of filtration & separation systems for their joint customers.



Andries van der Vegt (left) and Henk Schonewille

The closure of this agreement is the following up of years of intensive cooperation between the companies. SUEZ is fully engaged in the resource revolution by focusing on efficient and sustainable resource management throughout the world. The company supports its customers (local authorities and industries), channel partners and other stakeholders in achieving this by implementing innovative solutions that improve economic and environmental performance.

"Wafilin Systems offers significant added value to our joint customers", says Andries van der Vegt, Global Service Director at SUEZ's Water Technologies & Solutions Netherlands. "Wafilin has proven itself over the past years by connecting a number of new

customers to us. We see a lot of potential in the Dutch market and notice that our proposition in this region is working well. With Wafilin Systems, we have found a good partner to unlock this growth market for us."

Henk Schonewille, CEO at Wafilin Systems: "We are delighted to be able to add SUEZ to our high-quality offer-range. The products and services fit well with our existing portfolio and complete our circular offer so that we can deliver an even better, tailor-made solution to our customers, especially in the Food and Dairy market. This collaboration is an important next step in achieving our vision of ground-breaking and smart membrane filtration solutions for the world of tomorrow."

ViviMag wins Business Challenge

Great news for ViviMag. In March this year, the company, represented by Wokke Wijdeveld, was named the winner of the 10th WaterCampus Business Challenge (WCBC). ViviMag develops an innovative magnetic separation technology to recover the iron-phosphate mineral vivianite from digested sewage sludge. The WCBC unites entrepreneurs, coaches, investors and innovative

corporations to turn new developed technologies into commercial successes. During this 5-day training course, talented entrepreneurs learn how to turn good, innovative technologies and services into a successful international business. On the last day, the participants traditionally present their business plan to a jury of water technology experts and investors, who select a winner.

Experience a unique night in Stockholm

AFMITECH FRIESLAND HELPS TREAT WASTEWATER ON STOCKHOLM SHIP

As of May this year, the waters of Stockholm are home to the GetAway Machine, a sustainable Qrooz type B&B boat on which guests can experience a unique night. The ship, which was developed by GetAway Projects in Amsterdam and can be booked as of this spring, uses a solution by Afmitech Friesland for sustainable, decentralized wastewater treatment.



Pictured are two of the three owners: Pieter Porte (left) and Arno Schuurs (right)

GetAway Projects by designers Paulien van Noort, Arno Schuurs and Pieter Porte developed the GetAway Machine which, according to the company, is an all-in-one ship: mobile office, charter ship, luxury yacht and comfortable apartment. In short: ultimate freedom.

On the ship, a Bever Combi Compact Inbouw (an IBA Class 2 wastewater treatment system) provides sustainable water purification. Afmitech Friesland is seeing increasing demand for these systems. For several years now, the company has been supplying a range of decentralized wastewater treatment systems for industry, farms, holiday parks, and now marine objects.

For more information, see: afmitech.nl and getawaydeluxe.se



California: opportunities for food, energy and water



Consul General Gerbert Kunst

In early February, Consul General Gerbert Kunst visited WaterCampus. Kunst represents the Netherlands in the 13 western states of the USA. Hein Molenkamp, Director of Water Alliance, gave a presentation to a group of various officials. This was followed by a discussion on opportunities and possibilities in California with regard to purifying (drinking water and wastewater) and reusing water. The west coast of the United States is awash with opportunity for Dutch water technology companies.

The opportunities lie primarily in the fields of water, food and energy. In his presentation, Molenkamp provided several examples of successful Dutch companies which are already active there. DMT Environmental Technology, Paques, Wafilin Systems and, more recently, LG Sonic are among those currently building a good reputation in that region. The fact that the Water Alliance has good contact with water clusters such as The Maritime Alliance in San Diego and WaterStart in Las Vegas also offers great potential.

For the record, the cities which are likely to be promising are:

- San Diego: Blue Energy/BlueTech
- Los Angeles/San Francisco: smart cities & water technology
- Sacramento: water quality & distribution



LOOKING BACK ON BLUETECH FORUM 2019

Water Alliance is looking back on two productive days at the BlueTech Forum 2019 in the Royal Botanic Gardens in Kew, United Kingdom. We are also happy to announce that the MPC-Buoy was named a winner during this event; LG Sonic received the 'BlueTech Forum 2019 Best Technology Innovation Award' for their innovation on combining online water quality monitoring, web-based software and ultrasound technology to provide state-of-the-art treatment against algae and cyanobacteria in lakes, dams and water reservoirs.

Brave Blue World

Nearly 200 delegates gathered to enjoy the BlueTech Forum 2019 evening reception in the fabulous setting the Temperate House at Kew Gardens on June 5th. This was also the evening where the Brave Blue World documentary trailer was officially launched. Brave Blue World is the first global water industry documentary to show that technological innovation offers hope in an age of water scarcity.

Thought leadership

Managing Director Hein Molenkamp of the Water Alliance was happy to join the Thought Leadership Roundtables on 'Impact of Regulations and Policy on Driving Water Technology Adoption' hosted by Sally Gutierrez (Director of U.S. Environmental Protection Agency's Environmental Technology Innovation Cluster Development and Support Program) and

'Not all innovations are created equally', hosted by Paul O'Callaghan (CEO and Founder of O2 Environmental and BlueTech Research).

Bring in the Dutch

Besides LG Sonic winning the important innovation award, other Dutch companies also made a very strong impression on the attendees of the Forum's Innovation Showcase. This year's Innovation Showcase featured more companies than ever before. The 15 water technology companies that took part were selected from across the world and boast highly innovative technologies addressing some of the water industry's biggest challenges. "It was very good to see that four out of the ten pitches at the BlueTech Innovation Showcase were from the Dutch companies DeSah, LG Sonic, Eliquo and Nijhuis Industries", Molenkamp adds.

(Incoming Post)



SUCCESS STORIES AND LESSONS LEARNED DURING INNOVATIESTRAAT (INNOVATION STREET)

There was no shortage of public for the Aqua Nederland exhibition held in Gorinchem on 19, 20 and 21 March, as demonstrated by the overcrowded parking lots. But how did the members of the Water Alliance feel about the event? Many of those members had their own stands on the Innovatiestraat: an initiative with which the Water Alliance wanted to draw extra attention to interesting innovations. We made a short tour along the fields.

Yme Flapper, product developer at Cellvation, is positive. The company could not be absent from this exhibition, he says, if only because the company was founded here exactly one year ago by KNN Cellulose and CirTec. Cellvation has received considerable publicity in the past year, which is sorely needed, according to the product developer. "We recover toilet paper [cellulose, Ed.] from sewage water, reprocess it and market it as a high-quality raw material. The high-quality raw material [Recell, Ed.] is already widely in use in a variety of products. This includes the asphalt industry, construction, and the chemical industry. Visibility and brand recognition are extremely important, and that is our main goal at this exhibition. There was plenty of interest at our stand, and we feel good about it."

Brightwork Products (BW Products) by Hans Wouters is also content with the results. During the exhibition, the company announced a close cooperation with Nordic Water Benelux. The latter company will be including BW Products' Sand-Cycle in its portfolio in the Benelux. With Sand-Cycle, continuous sand filters can be optimally monitored and treatment processes can be optimized. BW Products will be conducting research at the RWZI Leeuwarden into one of Nordic Water's new technologies: fabric filtration.

Hydraloop, winner of the 2018 WIS Award and manufacturer of clever office and home water recycling systems has the wind in its sails. The company is doing well internationally and is winning one award after the other. Data analyst Yann Valkieser (son of founder Arthur) manned the stand for a day and noticed that the interest at a technical exhibition is much more focused than at a consumer trade show. "We were also at the Eigen Huis expo.

There are a lot of consumers there, and they are the end user for us. At a public exhibition, you notice that people in the Netherlands want to be more sustainable with water and that it is no longer taken for granted. At this exhibition, the interest is much more commercial and focused. For instance, several Dutch water recycling companies have shown serious interest in the implementation of water recycling in a number of new construction projects." All parties stand to benefit from decentralized water recycling, according to Valkieser. "The consumer can carry on showering, while still saving water and energy, and the water company can achieve a better balance between supply and demand, especially in dry periods. The follow-up meetings with these parties will follow soon."

AkaNova, founded by entrepreneur Ton Koekkoek (from Sneek, just like Brightwork) noticed that exhibitions consist of hard work and waiting patiently. The company, a well-known supplier of decentralized wastewater treatment systems, presented a new innovation at its stand: a miniature radar which not only measures water levels, but also collects a wide range of other data. It attracted a lot of attention. "We're happy with that, because it's exactly what we wanted. But if I'm honest, we would have liked it to be a bit busier. At an exhibition like this, you spend a lot of time waiting to see if you can catch anything in passing." Fellow Sneek resident and exhibition neighbour Hans Wouters of BW Products agrees with the waiting bit. He feels that the seminars drew a lot of attention away from the exhibition. "There is nothing wrong with seminars and knowledge sharing, but it would be better if there wasn't such a clear overlap. I would be in favour of that next time. That would result in a larger audience at the exhibition."



Yme Flapper



Yann Valkieser



Ton Koekkoek



Radjes Nidhansing (left) and Joep Verbunt

Straightforward

RN Solutions is a unique player in the membrane distillation sector. The company from Sint Oedenrode (below Den Bosch) is the only one in the world making rectangular units for desalinating seawater and producing process and drinking water. The invention is ready; it's time to scale up production to a commercial level.



It is immediately noticeable when you talk to director Radjes Nidhansing: you are speaking to a passionate entrepreneur. Radjes wants to help reduce the global shortage of clean drinking water. His rectangular units could make a big difference. "As a child, the news reports about drought in Ethiopia made a deep impression on me", he says. He never forgot the images. "The global population is constantly increasing, and with it, the demand for clean drinking water. I want to increase the percentage of fresh water in the world from 4% to 5%."

Increased capacity

Radjes is aided on his mission by his partner Frederike and father-in-law Joep Verbunt, who spent 35 years developing mass-produced items for Philips. The company has thirteen other employees worldwide, all of them unpaid. So far, everything has been internally financed. But why does Radjes want rectangular units? "Rectangular units allow the

production and concentration of a lot more water per hour. Until 2012, I worked for another great company, but they chose round filters. Rectangular is the right shape for me."

Simple

Radjes chose his own path. For seven years he worked on his rectangular units. "When I filed for a patent for them in 2016, people were impressed. I already had a fully developed plan. People usually only had an idea." Joep was an important advisor in the step to patent protection. "At Philips, I was involved in the commercialization of products. The importance of this step should not be underestimated. Technicians often forget it. They strive for perfection, but then you'll never be finished." RN Solutions' strength lies in keeping everything as simple as possible, according to Joep. "We only worked with existing base materials; things our suppliers already had in stock", he says. "I love the challenge of developing something

that seems impossible", says Radjes. "Of course there may be setbacks, but if you know what you're looking for, it will turn out okay."

Easier installation

Radjes perfected the unit in the past two years. It is suitable for a wide range of markets, from drinking water companies and industrial water to the maritime industry. And there is good news: the first potential customers recently showed up. "We have been approached by parties from the Middle East and India, among others," says Radjes. "They found us online. We stand out because we are the only ones making rectangular units. In addition to scaling advantages, rectangular units have the advantage of being easier than round ones to install in large applications, and they can be easily connected, offering even more scale benefit. The unit also uses residual heat. This helps us achieve energy savings and reduce CO2 emissions." "And create more jobs", adds Radjes. "For the production, we would like to involve people with a distance to the labour market, such as senior citizens with lots of experience and social workplaces. This makes our unit a great example of circular economy."

rnsolutionsbv.com

Name: **Radjes Nidhansing**

Date of birth: **1 October 1969**

Place of birth: **Paramaribo District, Suriname**

Place of residence: **Sint-Oedenrode**

Previous positions: **Project Manager at Aquastill,**

Project Coordinator at Heijmans, foreman at

Keppel Seghers

Hobbies: **Youth football trainer, drawing and DIY**

Life motto: **Wish it, dream it, do it!**

Name: **Joep Verbunt**

Date of birth: **22 August 1943**

Place of birth: **Berkel-Enschot**

Place of residence: **Sint-Oedenrode**

Previous positions: **Director of Logistics, Project**

Engineer, Production Manager at Philips

Hobbies: **Tennis, archery, wine making**

Life motto: **Stay focused and never give up**

The Netherlands will not be exhibiting with a building at EXPO 2020 Dubai, as is customary, but with a veritable biotope. The biotope—a pyramid in which visitors can experience the connection between water, energy and food—could prove to be a real eyecatcher. There is money to be made for the business sector, learned the nearly 70 attendees at the Roadshow Water, Energy and Food (WEF) held at the WaterCampus Leeuwarden on 11 April this year.

Guys, what's going on here?

The pavilion that will be erected in Dubai is the highlight of the multi-year Dutch campaign in the Gulf region, in which the Dutch knowledge and expertise in water-energy-food is key, as Dominique Groenendijk explains it. She is involved in the World Expo 2020 Dubai as Senior Communications Manager on behalf of the Ministry of Foreign Affairs. Jules Gerzon, International Finance & Enterprise Manager at the same ministry, emphasized the opportunities for businesses and knowledge institutions during the event. Even if only because the EXPO is considered a prestigious event in the UAE; that translates to large investments. "The opportunities are not limited to companies who can be involved in the construction of the EXPO; there is also a lot of opportunity in terms of exposure

during the event", says Gerzon. "Over 170 countries are participating, and the number of international visitors is estimated at 20-25 million. That means ample opportunity to promote your company. The theme Water-Energy-Food seems tailor-made for the Netherlands, so we are calling on everyone to submit ideas."

Peter van der Linde, Director of Holland Water, confirms the positive narrative. His company has been investing in building a network in Dubai, and it is now starting to pay off. He remembers the beginning: "When I first set foot in Dubai three years ago, my first impression was 'Guys, what's going on here?'. It is a completely different world, and the scale of the projects there is beyond anything we have ever seen. Throughout the years, I have learned to appreciate their approach. Things

are very well organized, and we are starting to benefit from the contacts we have made here." The entrepreneur explained the importance of realising where your added value lies before taking the step to go international. "We are a relatively small company, but we knew we had something of specific interest to the Gulf region. We supply solutions for drinking water, cooling water and process water. We are at our best when the project is complex and the temperatures are running high, because those environments increase the odds of biofilm or Legionella formation [Holland Water offers a water treatment system which uses copper and silver ionisation to prevent the formation of biofilm, Legionella and other bacteria, Ed.].



Expo 2020 Dubai, the 35th edition of the World Expo, will be held from 10 October 2020 to 10 April 2021. There will be 170 countries participating and the number of international visitors is estimated at 20-25 million. dutchdubai.com

OPPORTUNITY

SUSTAINABLE



The fun factor in water management

HIGH-TECH SPONGE INSPECTS PIPELINES

The Water Alliance organized a seminar at the national exhibition Aqua Nederland in Gorinchem in March this year, during which various companies showed off their smart innovations. Whatever the subject, reducing the costs and the footprint of water management was the main priority. Take pipelines, for example. Anyone who realizes that the demand for replacement in the large Dutch networks alone could amount to €12.5 billion in the coming years will understand the importance of a smart approach. Rudy Dijkstra from Acquaint explained what his company has to offer.

Criteria

Despite the aging infrastructure, drinking water companies aim to limit the number of leaks. To these companies, it is utterly important to know how and when they are due to replace the pipelines.

"Leaks are obviously a problem", Dijkstra explained. "We want to prevent them. In order to do that, we have to know how, when and according to what criteria we need to replace pipes. Getting the timing

you can avoid a staggering amount of unnecessary digging. That means fewer people and fewer machines. That can result in a CO2 reduction of up to 98 per cent, and a cost saving of 81 per cent over the entire life cycle of your network."

Fun factor

Acquaint introduces a high tech sponge or wad into the pipeline network. The system detects weak points, but also collects a lot of additional information on its journey through the pipelines. That mountain of data is used to produce models which can be used by water managers to predict where preventive action can be taken. Through trial and error, Dijkstra has learned that is more effective to facilitate water managers in the use of the Acquaint equipment than to do everything yourself. "We've noticed that this is very much appreciated. Water managers need to retain young people with expertise. Working with systems

like ours increases the fun factor of the job. That is yet another benefit for our customers."

Three continents

When asked about the development of his revolutionary innovation, Dijkstra was clear: everything in and around the WaterCampus was a huge help. First and foremost: the knowledge and facilities at Wetsus. "Our collaboration with them and the participating water companies gives us a head start on the competition. The Water Alliance's international network is also really helpful. It enables us to reach almost anyone we want. That is not only commercially interesting, by the way. That network and the accessibility of people is really also a gigantic knowledge library. It helps us accelerate the achievement of our ambition. Where would we like to be in three years? At the very least, we would like to have customers in three continents."



Rudy Dijkstra

right is very important for replacement. You can base it on a given service life, but that is not necessarily always enough. Acquaint's measurements help to determine both where to dig and to predict what these companies can expect when it comes to pipe replacement.

"You have to realize that 98% of the pipelines are still in good condition, with the exception of the bottlenecks", said Dijkstra. "If you can find the bottlenecks,

The Water Technology Innovation Chain

The WaterCampus brings together a complete chain of innovation for water technology, from first idea, research, specialized laboratories, various demo sites, launching customers to commercial international applications by commercial companies. Indeed from knowledge to business. It is driven by the idea that technological development and innovation is needed to develop new markets and create new business opportunities.



Brightwork: growing by sharing

A little under a year ago, Hans Wouters from Brightwork decided that he wanted his company's marketing strategy to be different. As an independent consultant and a powerhouse in custom water treatment solutions, the company has numerous projects underway. Those projects regularly result in validated products which can be of great added value to parties in the market. To get those products onto the market faster and better, Brightwork started looking for partnerships. And they found them.

Sand-Cycle

For example, a partnership with Nordic Water was established at the Aqua Nederland exhibition in Gorinchem in late March. A partnership in product development as well as for marketing existing products. Nordic Water will be actively promoting the product Sand-Cycle. "For Brightwork, it means we are getting a very mature partner with a huge network", says Brightwork founder Hans Wouters. "Both parties can assist each other in the conception and development of solutions. We can grow by sharing knowledge and networks." The first results have already been achieved in the Netherlands, Germany and Sweden.

Drug residues

One such solution is the removal of drug residues from water, according to Wouters. "That is a current problem. The existing knowledge with 'connected continuous filtration systems' can be optimally implemented in the upcoming research projects in this field." The Sneek-based company is currently testing one such technology at the sewage treatment plant (STP) in Leeuwarden, in combination with advanced oxidation through UV-C radiation and ultrasound. To that end, Brightwork is working closely with the Frisian companies Water Waves and Lamp-ion by entrepreneurs Mateo Mayer and Martijn Wagterveld, respectively. The project is receiving financial support from the VIA 2018 Plus scheme. The parties have now applied for a joint patent on the developed solution, based on the positive results. The goal of the research is to provide a validated business case which can help STPs in the Netherlands and abroad in the near future.

Manufacturing industry

Another agreement was concluded with a partner from the manufacturing industry at the previously mentioned Aqua Nederland exhibition. Brightwork and Fabiton announced the joint development of the innovative EcoBlue filter. The filter is comprised entirely of prefab components which can be quickly assembled into a working system on site. The filter has a high throughput of up to 500 m³/h. "The advantages of the concept are the substantially lower construction costs, short construction time and the optimal filter performance", says Wouters. "These systems are relatively simple to dismantle

and move, so the concept fits well in a sustainable construction method. The partnership combines Brightwork's process knowledge with Fabiton's expertise in prefab concrete construction. It is an excellent match."

'We are getting a very mature partner with a huge network'



Fabiton and Brightwork



Brightwork and Nordic Water

To anyone not very well acquainted with the subject, it may seem as if everything that comes from the EU is slow and viscous. Nevertheless, there is sufficient evidence to support the proposition that European cooperation and support from Brussels' individual member states and their entrepreneurs actually aids acceleration. One such example is the recently established Water Test Network (WTN). Fourteen unique test sites at an operational scale in various countries in Northwestern Europe. Joined in cooperation and open to the business sector with a single goal in mind: get companies' smart ideas to market faster.

Water Test Network: accessible and ready to use

GET TO MARKET FASTER



'The network is a unique opportunity'

Jordi Moreno
project manager at CEW



'The great thing about this network is its diversity'

Stefan Bergsma
international project coordinator
at Water Alliance

"The network is a unique opportunity", says WTN coordinator Jordi Moreno from the Centre of Expertise Water Technology. "It's not always easy for companies to put good ideas to the test, but that is an essential step to developing a mature product ready for market. Testing requires all kinds of facilities, including laboratories and large test setups which can be the size of a large shipping container. It's time-consuming, expensive, and sometimes not even available. These cooperating test locations offer a huge selection in terms of facilities. They are ready to receive the business community with open arms."

Diversity

"The great thing about this network is its diversity", adds Stefan Bergsma. Stefan manages the matchmaking and promotion of the project on behalf of the Water Alliance. "That diversity means we can service a wide range of sectors. We can test almost anything,

from drug residue removal to the use of sensors, from industrial processes to innovations for municipal water treatment."

Simple

It goes without saying that companies that successfully complete test projects are well on their way to a commercially successful market launch. That is not only good for a more sustainable world, but also provides an economic impulse to the participating locations and the countries in which they are active. It is therefore in the WTN's interest to make the currently available unique possibilities clear to the business community. "This project makes it easy for companies", says Bergsma. "Not only do we offer companies a test facility which meets their needs, we can also offer support in the testing process." To that end, the WTN project group has created so-called innovation support vouchers with values of up to €50,000. These vouchers entitle the bearer to

support that includes market research, access to a testing facility and help with validation and verification."

Using the Water Test Network

For more information on the various test facilities and the registration process for the vouchers, entrepreneurs can visit: www.nweurope.eu/water-test-network.

You can also remain up-to-date on the project via Twitter @WaterNetwork_EU and LinkedIn WaterTestNetwork.

These channels will also provide a stream of communication regarding the test sites and the companies running tests there. As a result, companies testing their innovation will also receive a bit of extra publicity, if they are so inclined.

You can contact Stefan Bergsma at s.bergsma@wateralliance.nl

LG Sonic creates international excitement

THE ULTRA SONIC WEAPON AGAINST ALGAE

Algal bloom and the associated toxins are a growing problem worldwide. Algae makes it very difficult for water companies to sufficiently purify water, and in recent cases, entire cities' water supplies have been paralyzed for several days (see box). For decades, people have used chemicals to control algae. However, the use of chemicals can lead to the overall deterioration of the water quality. There is another way, explains Yousef Yousef from LG Sonic (Water Alliance member) during the Aqua Nederland trade show. Part of the solution: starve the algae.

LG Sonic has developed a buoy to counter algae in large bodies of water. It does so without using chemicals and without affecting other organisms in the lake, including plants, zooplankton and fish. "There should be no illusion that there is one single solution to a problem as complex as this", says the Syrian-born entrepreneur who grew up in the Netherlands. "But our solution, MPC-Buoy, will get you far. Our buoy uses real-time water quality monitoring and ultrasonic technology to combat algal blooms effectively."

Starving Algae

The technology basically involves starving the algae, Yousef explains. "Algae continuously migrate through the water, from the bottom to the surface and back again. At the surface, they get

sunlight; at the bottom, they eat things such as the phosphate that has increased in the water due to human activity. The MPC-Buoy uses sound waves to disrupt the migratory movements of the algae, resulting in starvation and, in turn, death. The ultrasonic technology can reduce algae populations by up to ninety per cent, according to the entrepreneur. Satellite measurements conducted at the sites where LG Sonic has worked substantiate his claims. Lakes and ponds have become considerably cleaner in those areas.

The entrepreneur is ambitious and focused, and has had an impressive journey since taking over the company in 2011. "Today, our environmentally-friendly solutions are used by customers in more than fifty countries, from South Africa, Canada and the

Czech Republic to Dubai, Ecuador, Malaysia and Australia", says Yousef.

Great Potential

The technology has great potential in other areas too. It can be used to remove algae from ships' hulls in the maritime industry. LG Sonic has already achieved positive results in this field. For water areas threatened by algae, Yousef is considering the use of remote controlled buoys in combination with drones and aerators. It is clear that LG Sonic's journey is far from over.



LG Sonic's Yousef Yousef

Cyanobacteria: The Plague of 2014

Cyanobacteria is an insidious enemy that can strike unexpectedly, as demonstrated in 2014, when the city of Toledo was struck by disaster. On 2 August, the city's residents received the first warning that there was a problem with the tap water. Measurements revealed traces of microcystins. The detected concentrations were high enough

to pose a health risk. Edward Moore, from the city of Toledo, recounted the dark memories at a conference in the nearby city of Akron (Ohio) a few years later: "What we did not adequately predict was the effect on health care", said Moore. "The dialysis units in the hospitals urgently needed water, and we were stuck with the impossible task of getting it there." The National Guard was flown in, and water was brought to the affected city

in tank trucks from many surrounding cities and states. According to Moore, the direct damage incurred by Toledo may have only totalled \$100,000, but the indirect damage was probably in the millions. The collective loss of confidence also affected many people, said Moore. "The disaster had a deep impact on our lives."

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With the metamorphosis of the sewage treatment plant (STP) in Amersfoort, Eliquo Water & Energy reflects on a highlight in its early existence. The million-euro project was completed in 2018, but not without a few setbacks. Eliquo and the client, Water Board Vallei en Veluwe had several contractual conflicts during the project. Eliquo and the water board organized a mini symposium on Thursday, 25 April, to share the lessons learned with others.

A dozen water boards, including one from Germany, attended the event at the water treatment plant in Amersfoort along with several engineering firms. "In addition to technical performance, the symposium also touched on the softer side of large projects like the STP Amersfoort, and how to improve cooperation", explains Rick Langereis, Director of Eliquo Water & Energy. "After all, a water board, with its strongly political and administrative structure, is vastly different to a market party such as Eliquo. Things like getting to know each other better and properly understanding each other's interests before a project can be important in such a case."

Cooperation

The project in Amersfoort started in 2013. Amersfoort's existing STP was converted to an energy and fertilizer production plant. Several things did not go according to plan during the conversion, and the contract became an obstacle for both parties. "At the end of the day, we are very proud



of the final result", says Langereis. "Everyone worked hard and both parties made significant investments. The plant is completed and works as intended. The disagreements are a pity. Eliquo strives to be innovative in key techniques and distinctive technology, but we also want to innovate in the human side of cooperation with clients and chain partners."

Innovative concepts

Eliquo Water & Energy in Barneveld (part of the Eliquo Water Group) started devising and implementing innovative concepts for energy-neutral wastewater treatment in 2012. Energy is generated and nutrients are recovered from sewage sludge. This technology turns sewage treatment plants into factories that produce energy and raw materials. The STP

in Amersfoort—which is fully self-sufficient and produces around 300 tonnes of high quality fertilizer per year—was not the only great project of its kind. Eliquo also worked on the STPs in Amsterdam West, Ede, Drachten and Walcheren, as well as international projects. Langereis, who for years travelled the world for engineering firm DHV, is one of the founders. Together with business

partner Dave Bakker, he predicts strong growth for Eliquo, focusing purely on the public water and sewage treatment market. "Water boards want to invest more in the treatment of sewage sludge and the recovery of energy and sustainable raw materials. In recent years, Eliquo has made it to the top ten of Dutch companies in the sector, alongside players who have been active for

much longer. Our ambition is to make it to the top five in the coming years."

Dodewaard

This year, Eliquo signed a new contract for the expansion of the STP in Dodewaard. Water Board Rivierenland wants to increase capacity and make its treatment process more efficient and sustainable. The electricity consumption of the new plant must be fully compensated. Eliquo won the tender and found the ideal solution in Nerada® technology. "The new water treatment plant along the A15 is planned for completion by 2021", says Langereis. "We will start construction after the summer holiday; we will be building a solar farm to provide the required energy." Which lesson from the symposium is Langereis applying to this new challenge? "We organized a project start-up with the client beforehand, during which all parties involved got better acquainted. We discussed each other's goals and interests, but also got to know each other better on a personal level. It turns out that—along with time, money and other limitations—the human component in cooperation is extremely important to a project's success."

ELIQUO | WATER GROUP

Name: Rick Langereis
 Date of birth: 13 April 1971
 Place of birth: Koog aan de Zaan
 Place of residence: Wapenveld
 Previous positions:
 Water Manager at Hegeman Beton & Industriebouw (2010-2012),
 Director of Contract Management at DHV (2006-2010), Business Development & Sales Manager at DHV (2003-2006)
 Hobbies: Horse riding, managing his wife's veterinary practice

NORWEGIAN START-UP OISANN ENGINEERING BENEFITS FROM WATERCAMPUS



Revolutionary
 "Nobody wants to be a guinea pig", says Tor Stolpestad, CEO of Norwegian startup Oisann Engineering openly. "It can be tempting to stick to tried and true techniques, even if they are more expensive or worse for the environment", states Stolpestad indifferently. Nevertheless, he is working tirelessly to get the Waterfountain on the market. The Waterfountain is an innovation by Oisann which sustainably filters salt from seawater. The invention has the potential to be a

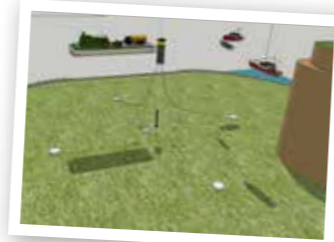
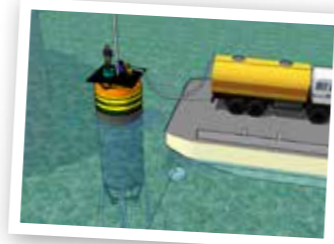
revolutionary solution to the increasing global shortage of fresh water.

'IT CAN BE TEMPTING TO STICK TO TRIED AND TRUE TECHNIQUES'

Patience
 Tests and trial rigs have proven successful; the time has come to find launching customers, according to Stolpestad. That takes patience and endurance; the ex-

commando is no stranger to either of these. He is, by now, also well acquainted with the WaterCampus Leeuwarden, where Oisann Engineering opened an office in the summer of 2018. "It is a wonderful environment", according to Stolpestad. "The Water Alliance's knowledge and international network have already helped us considerably. We wouldn't have made it this far without it."

waterfountain.no



LG SONIC IS MAKING WAVES IN THE U.S.



Step-by-Step
 LG Sonic, one of the original Water Alliance members [see also page 20 in this issue, Ed.] is capturing the US market step-by-step. Two of their new MPC-Buoy projects have recently been initiated to improve the water quality in California and Georgia in the United States. These MPC-Buoys will monitor and control algal blooms in a recycled water reservoir and a wastewater lagoon. In Carlsbad, California, an MPC-Buoy will monitor and control algal blooms in a storage reservoir used for recycled (or

reclaimed) wastewater for the Vallecitos Water District.

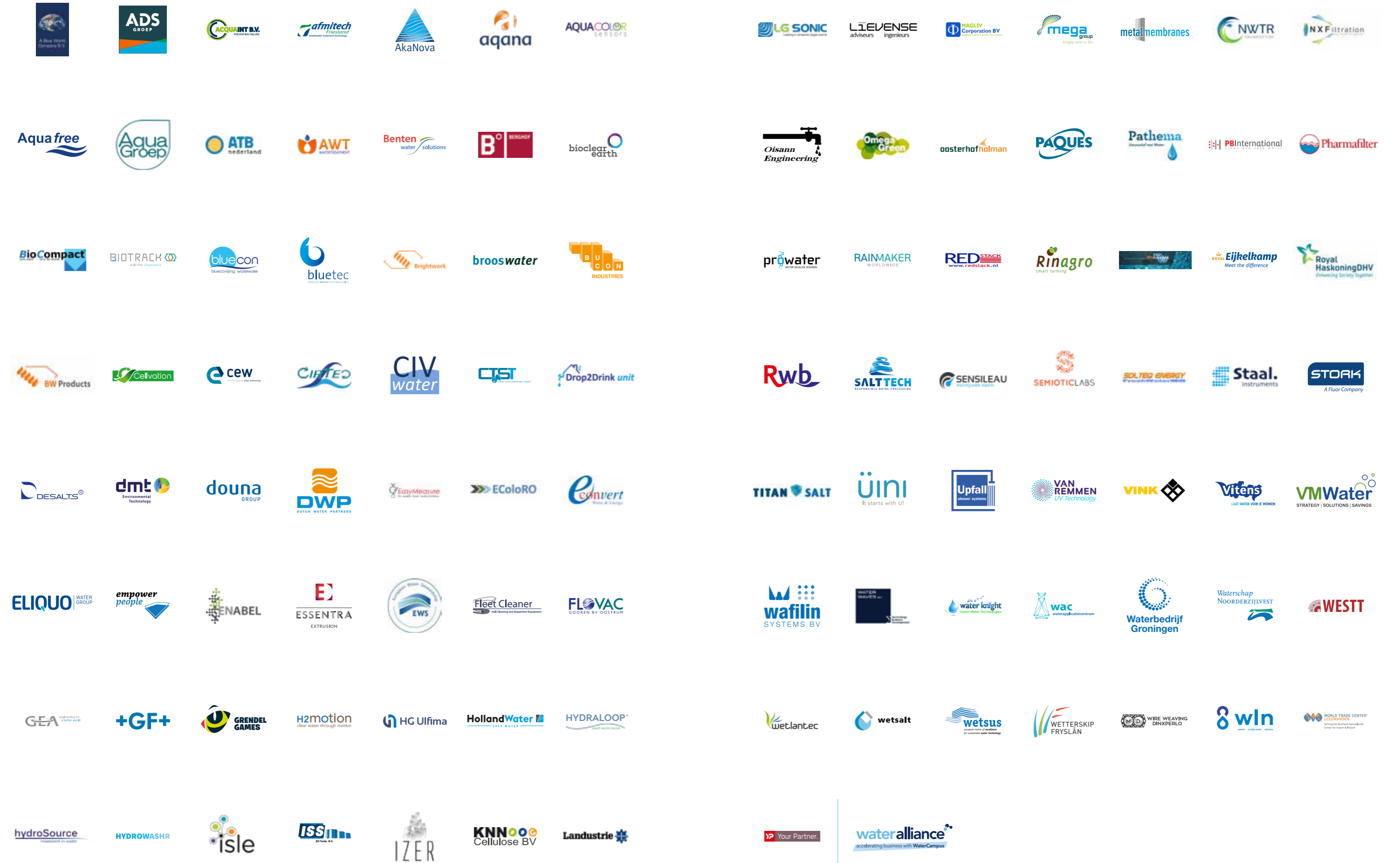
'MONITOR, PREDICT AND CONTROL ALGAL BLOOMS'

With this solution, the Vallecitos Water District is now able to monitor, predict and control algal blooms in real-time. This prevents algal blooms before they become a threat to water quality.

In the City of Lake Park, Georgia, MPC-Buoy systems have been installed in the town's wastewater lagoon. Controlling algal blooms with the MPC-Buoy in wastewater improves the water quality before discharge. The MPC-Buoy is a complete algal bloom solution that combines monitoring and treatment.

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