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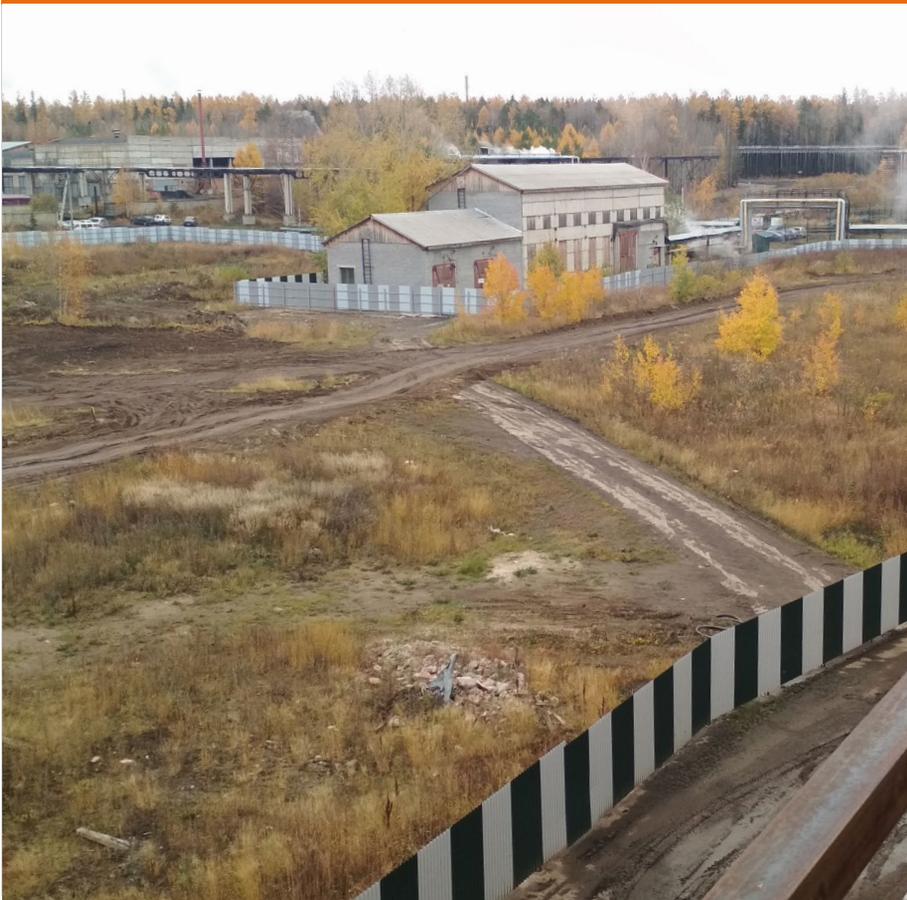


A decade of Finnish water management

AIMING TOWARDS THE CENTRAL EUROPEAN MARKET

ECONET'S GROWTH STORY

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Celebrating 10 years of customer magazines

ECONET GROUP'S customer magazine AQ is celebrating its 10th birthday. In that time, our company has served many clients, designed and built many projects and delivered a lot of equipment. We take pride in our customer base and references.

SINCE IT was established in 2002, Econet has been the flagship of the Finnish water industry export, delivering projects and equipment to more than 80 countries. The people at Econet can hold their heads high, because it doesn't often happen that a Finnish company is as international as we are.

THIS ISSUE looks back on some of the events in our company history. We have many thrilling memories. We are constantly developing and improving our business operations, to make them even better. We have merged our equipment manufacturing units Slamex and Dewaco into one, making the Group structure more straightforward.

The new business will continue under Dewaco's name and business ID. For our clients, this means that we can offer an even better service.

OUR GOAL is to make the world a better place. Each project and piece of equipment contributes towards it. All of the equipment and projects we make and deliver help with water treatment, thereby having a positive effect on the environment and people's well-being. Clean drinking water is a prerequisite for life, and treated wastewater is an important building block for a better world. We will be continuing this work, in Finland as well as internationally.



Lauri Leskinen
Managing Director, Econet Group



Our goal is to make the world a better place.

ECONET Econet's Customer Magazine AQ / Volume 10

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Econet Group Oy is a water and environmental engineering services management group. The Group includes the subsidiaries Econet Ltd., Dewaco Ltd. and Oy Slamex Ab. Econet's mission is to design and provide worldwide solutions for clean water and the environment. Laitila-based Dewaco is specialised in sludge thickening, sludge dewatering, and sludge removal systems. Slamex, located in Lahti, designs and manufactures equipment for water and wastewater treatment. The Group's turnover is over €18 million.



The quality of tap water in buildings must be ensured

Due to the restrictions put in place to prevent the spread of coronavirus, many buildings and premises, such as schools, kindergartens, restaurants, hotels, swimming pools, libraries, offices and their water systems have been unused or used significantly less than normal for weeks. In this case, the water in the pipes of the building has been stagnant in the systems throughout the entire downtime, or the usage has been considerably smaller than normal.

The quality of water that is stagnant in pipes for a long time or that does not change often will deteriorate, and it might smell or taste musty. This is caused by warmer water temperatures, increased bacterial growth in the water pipes due to the downtime, and substances that dissolve into the stagnant water from the system.

When buildings or premises that have been unused or used very little are used again, it is important to take the following easy measures to ensure water quality in building systems:

If the property has its own water tank, empty

it and refill it. The water in the water heater must be heated to at least 60 degrees before the following steps.

Let cold and warm water run from all taps until the water temperature stabilised, but for at least 2 minutes.

If the property's shut-off valve has been closed and the water supply network has been depressurised, it is advisable to inspect the system visually when opening the shut-off valve, to check for any joints that have loosened or started to leak when depressurised. If necessary, call an experienced plumber to fix any leaking joints.

If the property has its own filters or other water treatment equipment, ensure that they function properly after the long downtime, according to the equipment manufacturer's instructions.

Source: vvy.fi

[#tapwater](#), [#coronavirus](#)

DID YOU KNOW THAT?

A correctly adjusted water system helps to reduce water consumption significantly.



A project on responsible maritime traffic making great progress

In January 2020, the BSAG launched the responsible maritime traffic project "The responsible handling of grey waters and food waste on the Baltic Sea". The Finnish action plan of the European Maritime and Fisheries Fund allocated two-year funding for the project.

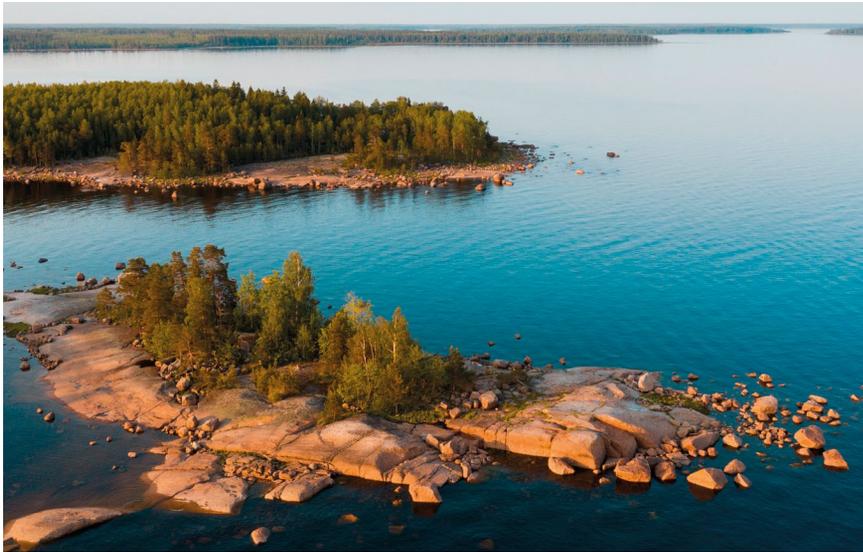
The collaboration between the BSAG and the Finnish Maritime Cluster was announced during a webinar held on World Oceans Day in June. A survey

conducted by the members of Shipbrokers Finland will investigate grey water and food waste unloading, treatment equipment on ships and operating methods. In turn, members of the Finnish Shipowners' Association will enable sampling from the wastewater tanks of vessels sailing under the Finnish flag. Nutrient and bacterial analyses will shed additional light on the differences between freighters and passenger vessels. The goal is to carry out both studies during 2020.

Source: bsag.fi

[#maritimetraffic](#) [#maritimecluster](#)





Ecouet Group references can be found on Ecouet home page: Ecouetgroup.com/references



Important personal choices

Everyday practices and daily choices have an impact on the environment and the condition of the Baltic Sea. Information about options and products with a smaller environmental impact can be found online, provided by many associations and authorities. It is important to choose to act for the benefit of the Baltic Sea.

- take care of household water treatment
- have an impact on nutrient removal from wastewater also inland
- take harmful substances and hazardous waste to waste collection points
- use cautiously any products that contain chemicals
- favour waterless and composting toilets
- empty your boat's privy into collection points at the port
- collect and remove rubbish from beaches

Source: The Baltic Sea Portal, www.itameriportaali.fi

#domesticwater

A vulnerable Baltic Sea

The **Baltic Sea** is a small and partially enclosed maritime region surrounded by nine countries. Its surface area is about 392,000 square kilometres, and its catchment area is nearly four times as big as that.

The Baltic Sea is the second-largest body of brackish water in the world, with salinity levels only a fifth of those of the oceans. It is shallow, so its total water volume is comparatively small.

The water exchange in the Baltic Sea takes place once every 40 years or so, as the narrow and shallow Danish straits are its only connection with the North Sea and the Atlantic Ocean.

Due to the slow exchange of the water, harmful substances such as nutrients and heavy metals remain in the Baltic Sea for long periods. This exacerbates the issues caused by the harmful substances to the otherwise sensitive flora and fauna in this region.

The water in the Baltic Sea is stratified

according to its salinity. The salty water from the North Sea is heavier, and is weighed down on the seabed, pouring into basins. Near the surface, the water is less salty thanks to the rainwater and fresh runoff waters. The stratification of the salty and less-salty water creates a halocline, which is a barrier to the efficient vertical exchange of the water. This makes it difficult for the bottom layer of water to get oxygen.

The International Maritime Organization has granted the status of a particularly sensitive sea area to the entire Baltic Sea. This classification can be assigned to areas that are particularly vulnerable to risks caused by maritime traffic and other hazards.

This was the situation in 2013, and unfortunately, the Baltic Sea is still struggling largely with the same challenges.

Source: ymparisto.fi

#balticsea

The common bleak

ALALBURNUS ALBURNUS



Shiny silvery schools of bleak move about near the surface of the water, feasting on insects and zooplankton. The bleak is common in Finland, and it enjoys freshwater and brackish water also elsewhere in Europe. It is not valued as a food fish, but it is highly sought-after as a bait fish. It is suitable for trolling and angling.

DID YOU KNOW THAT?

More than half of domestic waste comes from greenhouse gas emissions caused by waste, although only five per cent of all waste comes from households.



DID YOU KNOW THAT?

Water is traded on a global scale just like oil, weapons and drugs.



Is water blue?

One of the headlines in a 2011 issue of AQ states that Finland is the land of blue gold. Platinum would have been a more suitable metal to use in this metaphor. Researchers use the Platinum-Cobalt Scale to determine the colour of water, corresponding to the colour produced by platinum cobalt dissolved in water. The colour of clear water can be below 5 mg Pt/l, while the colour of water rich in humus can be over 100 mg Pt/l.

The colour of water is one of the criteria used in the general classification of water systems. At the same observation site, the colour values may vary strongly, mainly due to the runoff conditions. Heavy rain usually increases the colour values, while the values drop during dry seasons.

Let's go back to the world of colours. Distilled water is clear for our eyes. Natural water in a transparent container is often yellowish-brown, sometimes even covering almost the entire colour scale. The colour of natural waters is caused by dissolved substances or substance particles, with the latter often hiding the former. Thus, algae can give a green colour to water, while clay particles

make it look grey and sulphide deposits make it look dark. If we want to highlight the colour of dissolved substances, the water must be filtered or centrifuged.

However, if you're standing on the shore, you don't have to doubt your eyes, if the lake looks blue despite everything. Lakes are great at borrowing light, and the flat surface of the water is like a mirror. If the sky is completely blue, the same colour stretches

across the calm water. In a narrow cove, on the other hand, the water looks green, as the shadow of the coastal forests reaches across the water. If there is a light swell on the water, the reflections fly around in different directions and the colours become mixed. If a landscape simultaneously delights with white clouds, a blue sky and a green shoreline, the end result will be a uniformly mixed colour of the water.

Among Finnish lake toponyms, the most common colours are black (musta) and white (valkoinen). There are at least 600 ponds called Mustalampi, and over 70 lakes called Mustajärvi. The category of white-related toponyms (such as Valkeinen, Valkjärvi, Valkeajärvi, Valkojärvi, Valkealampi) includes more than 400 members. All other colours are rare within this nomenclature. The lake register of the Finnish Environment Institute includes two lakes called Punajärvi (Red Lake) and only one Harmaaajärvi (Grey Lake), Ruskeajärvi (Brown Lake) and Sinijärvi (Blue Lake).

Source: Finnish Environment Institute (SYKE)

#finnishlakes

#lakeregister



The protection of the Baltic Sea continues

The project "The Baltic Sea Action for Biodiversity" was launched in 2019 by the Baltic Sea Action Group to protect the biodiversity of marine environments. The Bank of Åland is a sponsor and strategic partner for "The Baltic Sea Project", and they have granted further funding of 80,000 EUR for the second year of the project.

The goal of the Baltic Sea Action for Biodiversity is to promote the protection of the underwater marine environment of the Baltic Sea, utilising the extensive data from the Finnish Inventory Programme for the Underwater Marine Environment (VELMU) regarding the location of the underwater areas richest in biodiversity. Most of the biodiverse areas are located in shallow waters near islands, i.e. often in privately owned areas. Encouraging private owners to protect these areas is one of the key goals of the Baltic Sea Action for Biodiversity.

The project's pilot area is the Gullkrona island, which has very biodiverse surroundings. Gullkrona will serve as a case study, helping to communicate the importance of biodiversity and its protection to a wider audience.

In addition to BSAG, key collaborators in the project are the Finnish Environment Institute (SYKE), Metsähallitus, Tvärminne zoological station, Åbo Akademi, and the Centre for Economic Development, Transport and the Environment.

Source: bsag.fi

#marineenvironmentprotection

DID YOU KNOW THAT?

Biogas recovery and utilisation can translate to considerable reductions in greenhouse gas emissions.

A belt filter press in Guatemala

Dewaco's belt filter presses are used all over the world for sludge treatment. The company has been supplying presses for industrial and municipal applications already for three decades. Agricultural wastewater can also be treated with Dewaco's belt filter presses.

Presses featured in news headlines in 2017, when Dewaco sold the first new-generation belt filter press to South America, Guatemala. This equipment is used for treating waste generated in an abattoir.

The model delivered to Guatemala was especially designed to reduce the logistical costs and challenges of the equipment. All press models can fit into a shipping

container. In addition, the design of this model aimed to maximise user-friendliness and performance.

The feedback from Guatemala has been very positive. Belt filter presses for the meat processing industry have also been delivered to other countries in South America, Saudi Arabia and Russia. There have been food industry giants among the end clients.

Belt filter presses are suitable for treating agricultural wastewater. Some Finnish vegetable growers use belt filter presses to treat the wastewater from washing vegetables.

Belt filter presses have also been delivered to livestock farmers across the world, as the equipment is suitable for dewatering and drying livestock manure.

In addition to abattoirs and agricultural applications, Dewaco's presses are also used for treating wastewater from the paper, brewing and dairy industries.

#beltfilterpress



Fertilizer Shipping project launched

A new, possibly very significant source of nutrient discharges has been identified in Baltic Sea protection: the marine transportation of fertilizers. The risk of nutrient discharges is linked to the loading and unloading of fertilizers at harbour, and cleaning the holds of ships that carry fertilizers in the open sea.

The nutrient discharge risks caused by fertilizer transportation have been highlighted by the Baltic Marine Environment Protection Commission (HELCOM) in 2018-2019. According to even the most careful estimates of the organisation Coalition Clean Baltic, which is active in the Baltic Sea area, nutrient discharges from fertilizer transportation can amount to several tonnes annually.

Problems related to fertilizer loading include airborne fertilizer particles, fertilizer ending up in the sea either during the loading phase or with the harbour's runoff waters, and other practices.

The first phase of the Fertilizer Shipping project run by the John Nurminen Foundation will survey the best techniques and practices to load fertilizers at harbour and to clean cargo holds, and also investigate the true extent of the problem.

Source: jnfoundation.fi

#fertilizershipping

COVID-19 under control in water management

Water management services are operating normally despite the global coronavirus pandemic. Water management facilities are prepared to secure water management services also in exceptional circumstances. This epidemic can affect the operation of these facilities mainly due to the insufficiency of staff numbers and service availability.

According to current data, it is unlikely that coronavirus can spread via domestic water. Compared to many other viruses, coronaviruses

cannot survive or multiply well in water. Any coronaviruses that may have ended up in untreated water are efficiently destroyed by chlorine disinfection, UV light or ozonation. The current water production chains provide a good protection against any viruses present in the environment.

Source: Finnish Water Utilities Association

#domesticwater #watertreatmentchain

We need viable Finnish companies to ensure that water utilities in Finland operate sustainably and responsibly.



More muscle needed for the Finnish water industry

Matti Leppäniemi, Econet's Chairman of the Board, warns against Finnish industry withering up.

Paul Öhrnberg PHOTO Jouni Harala

Econet made a great leap forward about 10 years ago, when the company's founder and main owner Matti Leppäniemi decided to purchase the water and environmental technology business of a giant company by the name of YIT.

With this deal, Econet instantly became a significant operator in the Finnish water business. The company acquired extensive references and a large group of experienced specialists. In the 2010s, the company continued its purposeful development, with more business acquisitions completed to add muscle for participating in international tenders.

However, the Finnish businesses participating in major water management projects funded by international development banks are still too small. Leppäniemi proclaims another bold leap for the 2020s, achieved through collaboration. He challenges private as well as public companies to come on board.

- I think a company should be established in Finland, with the government involved as well as private businesses. In most developing countries, infrastructure projects are government-led, and they would appreciate having the public sector involved in the implementation.

- This kind of ownership structure would be an advantage for projects carried out in developing countries, and would definitely help with securing funding, as well. A company like this could challenge foreign water industry giants, and become included in major international projects which are currently unattainable for Finnish companies due to their small size.

Leppäniemi admits that the solution he proposed requires courage, but he is adamant that something has to be done. Otherwise, withering up is a threat to the Finnish industry and know-how also on a more general level.

- Regrettably often, great Finnish technology is sold abroad, because that is the only way to acquire the funding necessary for growth. At the moment,

mechanical engineering, infrastructure construction and contracting are not attractive enough for investors, for example. People are currently searching for objects that can be scaled quickly and endlessly. These have been found in the gaming industry and the consumer goods industry, for example.

- It is necessary to have innovative industrial policies based on acknowledging opportunities, instead of the current cost-oriented way of thinking. After all, it must be somewhat important for Finland to continue having a branch of industry capable of producing something that can be exported.

- We need viable Finnish companies to ensure that water utilities in Finland operate sustainably and responsibly. The public sector should publish tenders that enable businesses to thrive. That would be good governance, indeed, Leppäniemi ponders.

According to Leppäniemi, collaboration between the private and public sector works well in Denmark, for example. The people there have understood that combining the strengths of the operative expertise developed at municipal water management facilities, private equipment suppliers and infrastructure builders translates to a competitive advantage on the international market.

”It is necessary to have innovative industrial policies based on acknowledging opportunities, instead of the current cost-oriented way of thinking.”

In addition to the small size of Finnish companies, Leppäniemi thinks that their success on the international market has been hindered by changes in the quote requests over the past 10 years, as Finland has not kept up with these changes.

Nowadays, water industry quote requests issued by development banks in developing countries often

**Topi Helle, Managing Director , TKT
Finnish Water Forum**

“Operating internationally is now a must; even on the domestic market, the competition might come from abroad, and the company must have world-class expertise. There is limited growth potential in Finland, and businesses must become international if they want to grow. Businesses have started to realise the importance of resource efficiency.

There is a change in the development sector: the private sector is no longer ostracised, but considered to be a partner. There has been a move from development aid to development cooperation, from public aid to private-public partnerships.

-The focus is now on human rights also in the water industry; the SDG agenda and the reference framework are taken into consideration.”

require the package to include not only the planning and contracting, but also running the facilities, for 10 years after their completion, for example. This aims to prevent the failures from recent years, when projects failed because the target country did not have any skilled staff to operate the new facilities.

– We cannot participate in projects like that, as we cannot provide operational know-how. That know-how can be found in municipal water management facilities, which cannot participate in quote requests due to their ownership structure. The solution would be for a water management facility and a private company to cooperate, so that in case of export projects, the water management facility could also provide collaboration with authorities, property management, customer service and cash management. On the developing markets, these matters are often in their infancy, Leppäniemi thinks.

– However, discussion about collaboration between private companies and water management facilities has completely veered off track in Finland. Here, some people try to scare others by talking about the privatisation of groundwater or lake water. I think that the involvement of private owners in water management facilities would improve flexibility and promote project exports, allowing to make use of the expertise developed at water management facilities.

According to Leppäniemi, private ownership would also open up international job opportunities for the specialists at water management facilities, which in turn would make the field more attractive for younger people.

– Overall interest in this field has clearly decreased in recent years, particularly among engineering students. There would definitely be more interest if young people could see that a career path in the water industry also offers opportunities for international jobs.

The majority of Econet Group's turnover comes from exports. Over the last 10 years, the company

“The involvement of private owners in water management facilities would improve flexibility and promote project exports, enabling to make use of the expertise developed at water management facilities.”

**Timo Heinonen, Managing Director
Tampereen Seudun Keskuspuhdistamo Oy**

“Water treatment is not a particularly media-friendly industry, and it doesn't have to be! Companies are judged based on their quality and their ability to provide uninterrupted service. This industry is relatively efficiently organised; there are fewer people working for water treatment facilities than in the ice hockey business, for example.

Nevertheless, there is an unnecessary tendency to focus on low service costs, while paying less attention to the facilities' and particularly the networks' modest level of renovation, which would require more financial resources.”

has steadily snapped up various water management projects and deals all across the world. Versatility has helped with finalising these deals: the Group's portfolio includes planning, contracting and equipment manufacturing.

– We have delivered projects and equipment to 86 countries. Finnish know-how and Finnish-made goods have been exported around the world. I certainly think it's a great achievement, Leppäniemi, the current Chairman of the Board of Econet Group, sums up the matter.

A large part of the deals in developing countries have been made thanks to government-subsidised loans. However, traditional subsidised loans were

frozen about 10 years ago, replaced by the “soft” PIF (Public Sector Investment Facility) funding instrument, which combines development cooperation funding and export credits. According to Leppäniemi, it has been very hard for Finnish operators to become involved in new international development aid projects after the funding system change.

At the same time, the

water industry in Finland has also been in a slump. The scarcity of investments has increased the restructuring and repair debt of the water and sewerage infrastructure already to hundreds of millions of euros. According to him, it will become a big challenge in the 2020s.

– Excluding a few major equipment acquisitions, investments in Finland have largely focused on fixing whatever happens to have broken. To be sure, there have been some developments: some large facilities already have systems monitoring the condition of the technology.

For many municipalities, water management facilities are considerable sources of income. However, Leppäniemi emphasises that municipalities should make sure to avoid using up the entire revenue from their facilities. Enough resources should remain for updating and servicing equipment or systems.

– Quote requests should take into consideration more than just the price, but for example also the quality, the availability of maintenance and spare parts, innovation, security of supply and sourcing from Finland, Leppäniemi enumerates.

Here too, he believes in the power of cooperation and open-mindedness: companies, municipalities, the government, universities and other water industry operators should aim for even closer collaboration. There is no point being defensive all the time.

– This would help put know-how and innovations into effective use at home and abroad, he believes.

af

**Virpi Sahi, MMM, Head of the project team
The Finnish Association for Nature Conservation**

“In Finland, municipal and industrial wastewater is processed at treatment facilities, which is a fantastic achievement. Rapidly increasing diffuse pollution from agriculture and forestry is a new threat to our waters, as snowless winters become more common due to climate change. That is why diffuse pollution must be dealt with more efficiently. Deficiencies in wastewater treatment in the mining industry as well as giant biorefineries are also a matter of great concern. Everyone can have a positive impact, for example by setting up a composting toilet at their summer cabin or home, instead of a flush toilet.”



Pictured: key personnel of the project at Ust-Ilimsk. From the left: Sergey Lebedev, Semen Voronov, Econet's Andrei Plotnikov and Ilim's Sergey Krupenko.

Behind the scenes of Econet's largest project in history

Econet is currently busy with the largest individual project of its corporate history, with the giant Russian Ilim Group as the client. Econet is responsible for delivering the wastewater treatment facility for the new pulp and paper mill. The project planning stage began in 2019, and the entire facility will be completed in 2022.

Mika Kärkkäinen PHOTOS Andrei Plotnikov

Working on a project without meeting the client is new for us all. Since March, all contact with the client has been handled remotely. Fortunately, everyone involved has fantastic remote work skills and arrangements. It's possible that remote work will become commonplace, which means that new operating models and practices will be developed for it.

The first batch of equipment was delivered to Ust-Ilimsk in August, and right now in October, deliveries of the second batch are being made, and the project is truly in full swing. The first batch was a delivery of 25 transport units, and the second batch consisted of 51 units or truckloads/40-ft shipping containers. The deliveries are made by trucks, by rail and partially also by sea, e.g. from Germany and Sweden to Baltic ports, and from there by trucks or by rail. From Finland, the transportation distance to the east, Siberia, is almost

exactly 6,000 km, or approx. as much as to Quebec, Canada to the west, as the crow flies.

The installation works of Econet's equipment will begin in winter 2021, as long as the civil engineering works are well underway. A representative of Econet is already monitoring the arrival and storage of the equipment on site at Ust-Ilimsk. During the installation works, several Econet specialists and subcontractor representatives will be travelling to the site. *aq*

The project is in full swing in October.

Econet's DEWA chain scrapers are taking over the Central European market

DEWA has launched a new spare parts concept to assist and improve their clients' operations.

Romain Minzolini, Eija Öhrnberg PHOTO Veolia



As evidence of the company's competitiveness and quality, Econet (the DEWA brand) has been collaborating with the French company Veolia in Brussels since 2005 already. The specific challenges related to the maintenance of the Aquiris waste water treatment equipment in the facility located in the capital of the EU arise from the load, and equipment wear and tear; and the company has been able to respond to this with durable products and its asset management strategy.

Head of Sales (Product lines) **Riku Granberg** emphasises that for the DEWA brand, the focus on preventive maintenance for any equipment is of key importance. Awareness and timely consideration of load-related challenges, and customising spare part deliveries to the client's needs is key.

This year's agreement of about 1.5 million euros is very important for Econet in the competitive Central European market. With this deal, the company established a completely new kind of service concept, which enables to respond to the challenges and needs of a significant client flexibly. Econet is particularly pleased with the client's good and knowledgeable approach regarding the preventive maintenance of the facility and the equipment.

According to **Romain Minzolini**, Project Engi-

neer Asset Management at Veolia, DEWA meets the necessary quality requirements, as the asset management strategy is essential for the company, with regards to the ISO standard. He describes the agreement as follows:

How did you end up choosing the Finnish company Econet as your business partner?

Chosen in 2005 following a response to a tender issued in the context of

the plant's construction. The design of our tanks, and the specificity of the water plant directed us towards Dewaco to select our assets. We were working with Dewa for the last 10 years, with a satisfactory product. Thanks to our Asset Management strategy, we were able to improve our reliability on those assets, so it is a win-win situation for us.

Which parts/spare parts has Econet supplied to you, and for which applications?

We are using plastic made scrapers in our wastewater tanks. We have been supplied all kind of parts throughout the years. It could have been pins or rods to full plastic flyers.

How long is the contract period and what does it entail?

Recently, and jointly with our latest ISO 55001 certification, we had plan to improve our spare part management. In order to do so, we agreed for a 3-year spare part supply management with Dewa. This provides us with negotiated set prices on parts, as well as a full batch of spares we need to perform our planned maintenance activities and renewals. Thanks to this we are able to deliver essential services.

Which activities and special challenges

are related to this particular delivery?

In order to establish this agreement, we had to work internally first on our maintenance planification. This was possible after we aligned all our stakeholders on a common and shared objective.

Thanks to this and a closer follow-up of our assets, we are now able to anticipate our renewal activities and needs, so Dewa can deliver the spare we need.

Are there some special features about co-operation with Econet?

We were assisted by Econet for an on-site technical audit. We also had some exchanges for improving their spare part to a quality more fitting to our need.

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Veolia – Aquiris Wastewater treatment plant for the city of Bruxelles (BE)

80% of the grey water of the Bruxelles's basin goes to the plant for an equivalent of 1.3 million inhabitants.

Econet co-operation agreement includes negotiated prices, storage in Dewa's warehouse with set time to provide transportation of spares to Bruxelles, possibility of on-site services

Contract period is 3 years with possibility of a renewal at the end of the first term

Econet's growth story

Since the company was established almost 20 years ago, Econet's business operations have always been developed with a strong focus on export. At the same time, we are a part of the corporate history of the Finnish water industry, with roots reaching back to over 100 years.

Taina Dammert ILLUSTRATION Econet

At the beginning, the company focused on process and facility design for industrial wastewater solutions, particularly for the paper and pulp industry, but later also branched out to equipment deliveries and installation supervision. In addition to Finland, the company worked on projects in Sweden, Brazil and China.

Econet has grown purposefully through business acquisitions, so that the company's resources and know-how would be complemented by each acquisition. In 2005, Econet acquired Oy Slamex Ab, specialised in supplying equipment for water, wastewater and waste treatment, and industrial process water purification. After this acquisition, Econet was able to expand its business to include wastewater treatment contracting in Finland. Meanwhile, the company was also involved in many other process consulting and planning commissions abroad, for example in Vietnam, which paved the way for later complete deliveries for various facilities.

From the very beginning, Econet aimed for the international market. However, it's impossible to gain a foothold there without sufficient resources. The projects are so massive that small companies cannot even participate in tenders. The solution was to grow quickly through business acquisitions. An opportunity for this arose in spring 2009, when Econet acquired the water and environmental technology business of YIT. This deal added to the Group's expertise in the process and equipment technology of water and wastewater treatment plants, as well as sludge, biowaste and biogas treatment facilities. Several significant wastewater facility projects in Finland

From the very beginning, Econet aimed for the international market.

and China, as well as desalination and condensate treatment projects in Russia were also transferred to Econet with this deal.

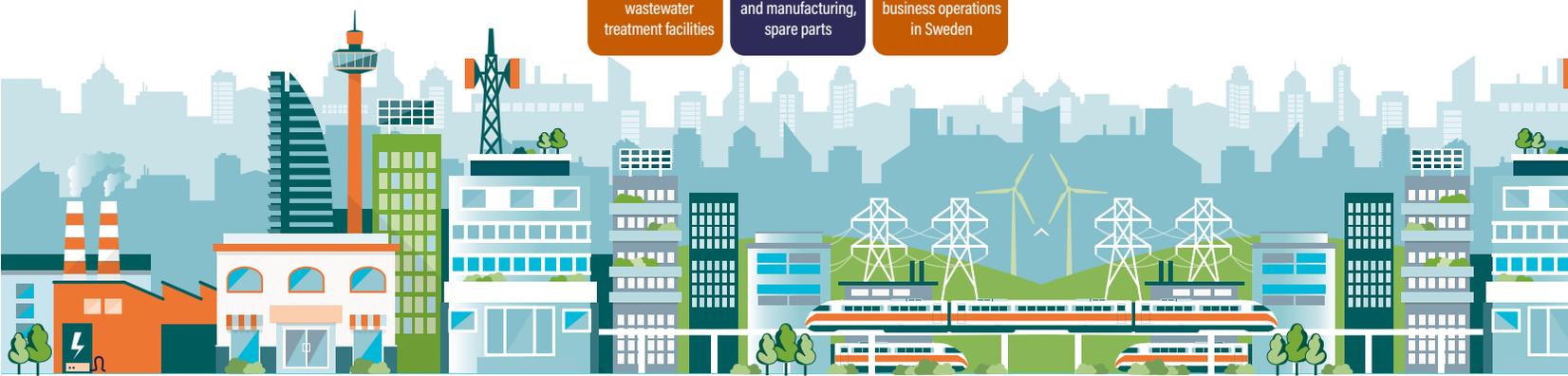
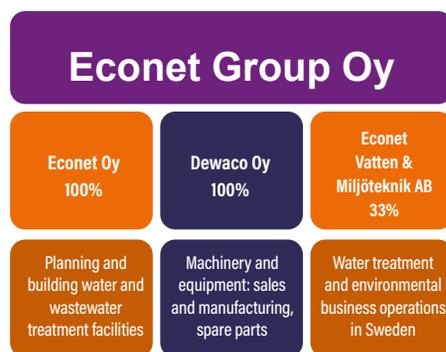
Since then, the Group has been supplemented by various acquisitions, some of which complement the Group's product range, and some of which have been discontinued. In autumn 2011, Econet purchased a significant portion of the Swedish water and environmental industry business, Landskrona Vatten & Miljöteknik AB, which then continued trading as Econet Vatten & Miljöteknik AB. The company implements municipal water treatment projects as well as industrial wastewater treatment projects, particularly in the paper and pulp industry.

Another significant change took place in 2013,

when Dewaco Oy (based in Laitila) and its production facility became a part of the Econet Group. In the following year, the machinery workshop capacity was supplemented when Econet's long-term partner HTM Stainless in Lahti was acquired by Oy Slamex Ab. Dewaco has been operating since 1986, developing systems for sludge treatment: for thickening, pressing, collecting and transferring. Having our own design and manufacturing know-how, combined with sales and an international network of retailers have been the strengths that have helped business grow for the whole Group.

Over the years, the range of services has expanded from design and consultations to equipment contracting, water and waste treatment process equipment, their manufacturing and spare parts sales. The key goal for Econet has been to achieve a high proportion of export in the business turnover. On a global scale, water treatment markets are growing in many developing regions, for example in Asia and Africa, where water is a critical factor for societies to function, not just due to scarcity but because of problems caused by insufficient wastewater treatment.

There is still a lot to be done in wastewater treatment, even just to make current processes less energy-consuming, and improving the removal of harmful substances such as pharmaceuticals, other chemicals and microplastics. In the near future, the focus will shift on transforming the wastewater of today into sources of raw material and energy. Coping with international competition creates challenges and encourages to develop technologies and solutions in collaboration with the clients. *aq*



Tap or bottled?

Not all water is the same: everything depends on its origin and chemical content. Niilo Pellonmaa, CEO of Polar Spring Oy sheds light on the principles of the water industry and corrects misconceptions in 2018.

Niilo Pellonmaa PHOTOS Polar Spring Oy, iStockPhoto

At school, children are taught that the molecular formula of water is H₂O. However, the composition of water from different sources varies, and the composition can be altered with industrial methods. Several stakeholders, such as water treatment facilities and water bottling companies make the composition of the water they produce known.

- At Polar Spring Oy, we want to emphasise the composition of our water. That is why the labels on our bottled water contain all information related to its composition. We do not make any health claims, we just state the facts.

The vast majority of water intended for human consumption is made potable with various chemicals. It is essential to know the origin and composition of water.

- In addition to various chemical elements, drinking water, H₂O, always contains a lot of other substances and their compounds. What kind in particular depends on where the water has flown and how it has been processed. As a result, each type of water has its own distinctive taste, depending on its source and treatment, much like in the case of wines, for example. Nowadays, it is clear that people are becoming more interested in the flavour and composition of water.

Natural mineral water

When people write about water and compare different water in Finland, they often mention only

the microbes in the water. This generally applies to comparisons between tap water and bottled natural water.

- In this comparison, tap water is always victorious, and it is stated that tap water is clean, as it contains no microbes. Instead of the word "microbe", the comparisons often use the word "bacteria". All microbes, i.e. life, have been killed in tap water with chemicals. Only rarely is it mentioned that few microbes in the water are harmful to humans, and that good natural water does not contain harmful microbes.

However, very many microbes are essential for humans. Water comparisons do not always analyse other water content, although many other components such as minerals have dissolved in the water.

- It is hardly ever mentioned that there are people among us who cannot drink chemically treated water, for one reason or another. High concentrations of some minerals can also cause issues for some people.

The EU uses the term "natural mineral water". In Finland, we tend to use "spring water" or "mineral water" interchangeably. Together with students from Aalto University, Polar Spring carried out a study on how Finnish people perceive the above-mentioned terms. It was discovered that hardly anyone understood the actual differences between the terms "mineral water", "natural mineral water" and "spring water". "Spring water" was understood best as a term.

Bottle containers for energy waste

People in Finland mostly consider tap water to be environmentally friendly, while bottled water is criticised for its packaging.

- I think we can all agree that all packaging should be collected and recycled so that it could be reused or used as an energy source. Finland is one of the leading countries in the world with regard to recycling plastic bottles. As incinerators become more common in Finland, the disposal of plastic waste will keep developing further.

- The problem is the amount of plastic used in food packaging. For example, when a consumer buys a 150 g pack of sausages, they also end up with 25 g of plastic packaging. In comparison, an empty 0.5 L PET bottle weighs about 15 grams.

The world trade of packaged and bottled water reaches about 200 billion dollars every year, and it is expected to keep growing rapidly.

- When making choices, it is worth remembering that the water in a bottle could be any sort of water, most often simply water that has been made potable by chemical treatment. It is always a good idea to check the origin and composition of packaged water. Natural water must always be packed at its source. Water from one spring has a different composition to that from another spring, making it completely unique. *aq*



0,35L



6 412220 006306

POLAR SPRING

Polar Spring natural water filtered through the moraine ridge in the clean nature of Salpausselkä.

Sisältää/innehåller/contains

Kalsium (Ca)	12 mg/l
Magnesium (Mg)	4,5 mg/l
Natrium (Na)	5,3 mg/l
Kalium (K)	2,4 mg/l
Fluoridi (F)	< 0,10 mg/l
Nitraatti (NO ₃)	3,8 mg/l
pH	6,6
Haihdutusjäähmä (180°C)	99 mg/l



Parasta ennen / Bäst före: Katso pullo / Se flaskan
Lähtö/Källa: Polar Spring
Pakkaaja/Forpackare: Polar Spring Oy
17150 Urajärvi, Finland
www.polarspring.com

POLAR SPRING

FINNISH NATURAL SPRING WATER
AITO LÄHDEVESI • ÄKTA KÄLLVATTEN

Salpausselän puhtaassa luonnossa
hiekkaharjun läpi suodattunut
aito lähdevesi.

Always check
the origin of
packaged water.



Pantti
0,10€
Pant

0,35L

6 412220 1006306

PET

**POLAR
SPRING**

Polar Spring natural water filtered through the moraine ridge in the clean nature of Salpausselkä.

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6 412220 1006306

Polar Spring na
moraine ridge in
Sisältää/innehä
Kalsium (Ca) ...
Magnesium (Mg)
Natrium (Na) ...
Kalium (K)



Tellervo's well

and other water management projects

There are all kinds of wells in the world, from dug wells that reach groundwater to deep production wells intended for the wider community. From production wells, water is transferred to water treatment facilities, and then to consumers. A pit collecting surface water can scarcely be called a well, although these are used in many places for getting water.

Pertti Murtovaara PHOTOS iStockPhoto

At one time, there was a story about a water management project in Western Kenya that nearly became an urban legend.

The President of the Republic of Finland was coming for a visit to Kenya, and of course a side programme was put together for the First Lady, including a visit to an extensive development co-operation project in Kakamega. What could be better than the First Lady christening her namesake well in an African village?

Time to get cracking! The well committee was set up and running, and a site near a school was chosen for the well. The well was then dug, and the overground structures and hand pump were installed. The well committee had been practicing for the visit, and everything had to be ready for zero hour. Then, the well dried up!

They could have really used some helpful tips right then! They dug a new well next to the old one, but this

time, they placed a 200-litre barrel filled with clean water inside the well. The new concrete rings were made, and the pump was installed. At the time of the christening ceremony, the concrete was still so fresh that it would have almost been possible to eternalise the First Lady's footprints in it. The ceremony was nevertheless held, and Tellervo's well was christened.

The story has a happy ending. After additional seismic sounding, a new well was dug, which hopefully continues to delight the villagers.

A non-functional well

Another event shows how difficult it can be to understand others and act when different cultures meet. The residents of a small village approached the project team with the complaint that the new bored well was not working. So, it was necessary to go to the site and inspect the situation. Not a drop of water could be pumped from the water, although everything should

have been in order. The site was supposed to be the most favourable, in the near vicinity of the village and a few dozen metres from the road. The pump was detached, and to everyone's great surprise, the pump was full, but not of water, but of you know what!

At this stage, the visiting engineer started to feel helpless. I had a private talk with the local contact person and we agreed that we'd leave the site, and he would stay behind to find out more about the situation. Little by little, we found out more about the matter.

At the start, the villagers had of course been very excited about the opportunity to get clean water straight from the pump. All possible surveying was carried out, and the best site for the well was also discovered. The well committee had been against the proposed site, but because the area was not particularly opportune and the water was likely to be quite deep, the decision was made to dig the well. Everything went to plan. There was water, the



concrete structures were cast, and the pump was installed.

However, the villagers' enthusiasm had waned, but at the time, nobody knew to take it seriously. When the matter was investigated, we were told that there was a path between the village and the well, which was used by spirits. The villagers were afraid to cross the path on their daily trips to fetch water, and they couldn't think of any other way to change the situation other than to make the well non-functional.

And they made the well truly non-functional, indeed! Admittedly, our various emotional states ranged from disbelief to anger and everything in between. Of course, in hindsight, there are some funny aspects to this story. After we had gotten to the root of the problem, we were able to start working again. New negotiations with the well committee were held, and they chose the most suitable out of the best technical options presented to them. After a slight delay, a new well was drilled, and although it didn't produce as much water as the original well, there were no more complaints from the villagers.

Ring wells

Ring wells are a type of well that have been used extensively already for centuries, also in Finland, for example. An integral part of a rural landscape was a well in the middle of a courtyard, with a chain or a long pole used to retrieve bucketfuls of water for people and livestock. The lining of these wells was mainly made of wood or stone.

Nowadays, wells are usually lined with concrete rings, which might be cast on site. The diameters of wells vary between 1-5 metres, with the depths varying between a few metres to more than 20 metres, depending on the groundwater level. The well is built so as to prevent surface water from getting into the well by sealing the ground around the well. Water comes



into the well through the bottom or through a porous lower ring. If an open-bottomed ring is used, gravel is generally placed on the bottom to filter any fine material out of the well. A gravel or sand base or water base is usually built around the bottom of the well, to improve its storage capacity and filtration effect.

Bored well

People have been making bored wells already for a few millennia. In China, a percussion method was developed, which was used for boring water, salt and gas wells to a depth of hundreds of metres.

Bored wells are made in loose ground and rock. If the water-drawing layer is in loose ground (in Finland, often in ridges), a bored well is piped all the way to the bottom, and the aquifer's section is lined with a strainer pipe. The sand and gravel layers of ridges function as filters. If the water-drawing layer consists of fine material, coarser filtering sand is placed at the strainer pipe, preventing any fine material from getting into the well. In the overground section, the area surrounding the pipe is often sealed with a mixture of bentonite and cement, so that surface water cannot drain into the well, down along the edges of the pipe.

Nowadays, the bored wells of private households are almost always bored into rock, and contractors specialised in these wells also issue a "water guarantee". In wells with a rock bottom, piping down to the rock surface is often sufficient. In some cases, the type of rock may limit how the water can be used. Iron and sulphides cause colouring as well as smell and flavour issues.

The output of bored wells can vary, from the few hundred litres of private wells to several hundred cubic metres of water per hour in case of production wells. In Finland, drilling contractors are busy with boring water wells and wells for geothermal heating applications. *aq*

Tips for preventing well catastrophes

Wells are vital, particularly in sparsely populated areas. Risks associated with sourcing water and wastewater treatment can be anticipated and prevented, if you know how to prepare for risk situations. The owner of a private well or wastewater system must always ensure that the system works. Here are a few tips to help avoid catastrophic situations:

It is advisable to position the well on higher ground, for example if there is an oil tank, or a car or machinery washing site nearby, or if fertilizers or pesticides are used or stored in the vicinity, or if there is even just a sewer or outhouse nearby.

Rainwater and flood water cannot get into the well, if the well is located on higher ground and its surroundings have been ramped away from the well. We recommend including frost protection for the well. The lid of the well must be sturdy and sufficiently large.

The ventilation and overflow pipes of the well should be covered by grates.

The water pipes must be insulated, fitted with heating, or positioned below the frost line.

If there is a rubbish dump, scrap yard, shooting range, golf course, service station or other possible risks near the well site, it is important to acknowledge these even if you have no control over their existence.

You can find more information about the maintenance of a private water management system and possible issues online at www.ymparisto.fi

Finnish Environment Institute
PL 140, 00251 Helsinki
Ph. 020 690 183
neuvonta.syke@ymparisto.fi



Ten years of working with water

Eija Öhrnberg PHOTO Jouni Harala

At the end of 2010, I received a nice phone call from a company called Econet. Apparently, the CEO, **Matti Leppäniemi**, had been admiring Stora Enso's customer magazine Tempus for a while, which I had been editing for a communications agency, and he suggested creating a magazine for Econet. I was flattered. That was how the first (and probably still the only) customer magazine in the water industry got started. The brainstorming started under the working title provided by Matti, Paskimo.

I was quick and eager to get to work, as creating a brand new magazine concept had always been a dream of mine. Together with graphic designers **Anni Pitkänen** and **Tommi Honkavaara**, we considered different content plans, layout options and name suggestions. We ended up choosing AQ as the name, inspired by the word aqua and by ideas contributed by Matti and **Anita Seppälä**. So, it was time to get busy!

The very first issue came fresh out of the oven on 15 June 2011. Over the years, the core team working on the magazine has remained largely the same, including the invaluable **Anni, Riikka Mäkinen, Markku Paretskoi, Arto Wiikari** as well as **Jouni and Vilja Harala**. The large group of contributing writers also deserves my heartfelt gratitude.

Our professional and ever-helpful printing partner has remained the same throughout all these years, although the printing house changed ownership recently.

Over the course of 10 years, we have published a total of 32 issues of AQ highlighting various topics; with 10 issues also published in English, four in Russian, one in Vietnamese and one in Swedish. I'd also like to thank the translation agency ABC for flexible collaboration.

The best part about working on AQ has been exploring, experiencing and seeing things thoroughly. Over the course of these ten years, I have met and interviewed a vast amount of water industry professionals and specialists, both in Finland and abroad. Meeting each and every one of these people has taught me something new about water. I've been able to visit water treatment facilities all over the world, reporting about what I have experienced and seen on the pages of AQ. What is common for all the experts I've met is that they've been genuinely proud of their know-how and the work they do for the sake of clean water. That gives me hope for a better world.

My humble thanks to Econet for letting me be involved in this journey! *aq*



Real snowflake at high magnification.

Every snowflake is different

The shape of snow crystals depends on the temperature as well as air and ground humidity. Depending on the structure of the ice crystals, snowflakes can be hexagonal plates, little needles or six-pointed stars. The less humidity there is, the simpler the crystals will be. Star-like patterns require plenty of humidity. In the right conditions, snow crystals will become attached to each other, forming snowflakes, which may be formed of hundreds of snow crystals that are stuck together.

Wilson Bentley was an American photographer who took pictures of more than 5,000 snowflakes over the course of 46 years, with each of the snowflakes proving to be different from the others. Individual tiny particles of ice created in similar conditions are almost identical. When several ice crystals form a single snowflake, it is thought that the structure is always something completely different.

6 categories of snow

Snow is categorised based on its physical properties, i.e. its thickness, density, thermal conductivity, the amount of layers and the proportion of liquid water.

- Tundra snow
- Taiga snow
- Mountain snow
- Prairie snow
- Sea snow
- Occasional snow

#snowcrystal, snowflake

DID YOU KNOW THAT?

50 years ago, it took up to 250 cubic metres of water to produce one tonne of pulp; and now 10-50 cubic metres are enough.

The editorial staff of AQ would like to thank the readers and wish everyone a Merry Christmas and a prosperous New Year 2021!



Daily measurement data

Interpreting satellite images helps to get real-time information about the algae levels and surface temperature of water systems. Satellites suitable for monitoring water quality fly over Finland on a daily basis. Satellite imagery provides measurement data about water quality already within a few hours after the satellite flyover. Data is collected from a large area, and about several water quality factors simultaneously.

The interpretation process is mostly automated. For example, information about water turbidity, surface temperature, algal rafts and a-chlorophyll content that characterises water eutrophication is generated automatically. Additionally, experts at the Finnish Environment Institute (SYKE) interpret Secchi depth and humus content, as well as the characteristics of the catchment area of the water system and shoreline vegetation.

Source: Finnish Environment Institute (SYKE)

#watersystemcondition

#eutrophication

ECOSSET

WATER MANAGEMENT WILL BECOME DIGITAL

The water industry has developed immensely in the past 10 years, but what's in store for the future? A lot is expected from digitisation...

10-year anniversary

Hah, let's deliver water to customers in digital format, via telecom networks!

A FANTASTIC IDEA!

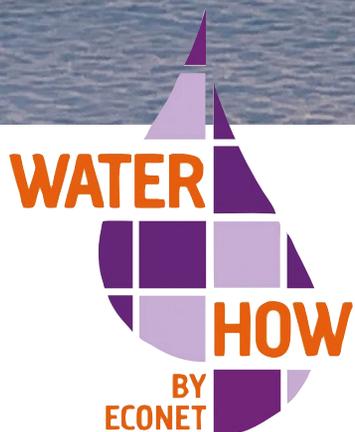
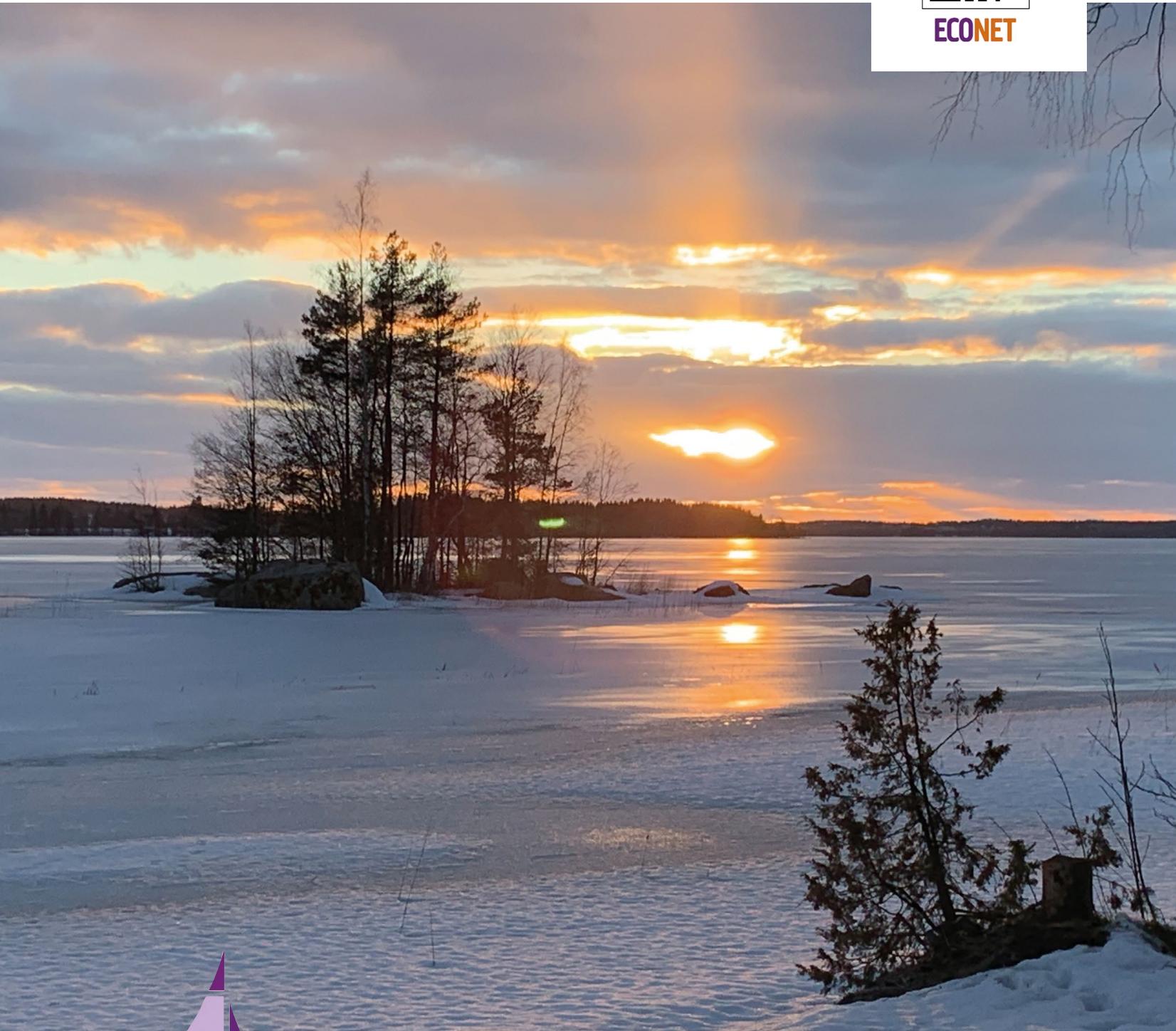
WATER DELIVERED IN BYTES. INGENIOUS!

Hey, it was just a joke! A joke!!!

THIS WILL REVOLUTIONISE OUR BUSINESS!



ECONET



www.econetgroup.fi