WATER AT YOUR SERVICE

SUSTAINABILITY REPORT 2020

pantarein
WATER AT YOUR SERVICE

CONTENTS

PREFACE

Working together on clean water: if there is something that binds us , this is our shared passion. It is how we at Pantarein achieve much of our positive impact: for our employees, customers, planet, and company.

“Water at your service” is central to everything we do. Not only do we build industrial water purification installations, we also unburden our customers as much as possible – even after the completion and start-up of their installation. We provide clean water to our customers as a service, which is necessary for survival in a circular future. All together, Pantarein installations purify 3.4 million m^3 of water annually. And we are very rightly proud of this. Because the actual situation is obvious: more sustainable use of water is required, now more than ever.

Even so, sustainability means so much more to us: from providing a safe working environment that motivates our people, and providing opportunities to young people, to installing solar panels and beehives on the roof of our company building.

Doing things right by working sustainably: we have been applying this philosophy at Pantarein Water for more than twenty years. This Sustainability Report 2020 contains the story of our impact for the first time, coupled with the necessary facts and figures. We hope it inspires you to tackle water management in your own company, and to begin engaging with corporate social responsibility.

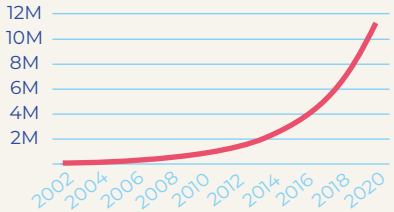
Enjoy!

The Pantarein-team

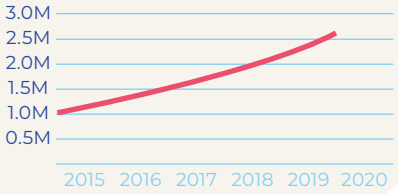
PANTAREIN WATER AT A GLANCE

Financial figures

Revenue evolution



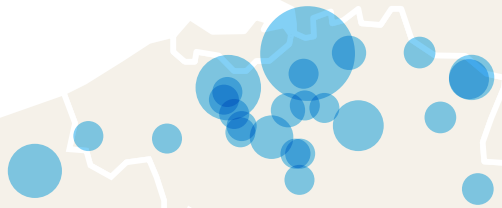
Gross margin



Our team

35
enthusiastic employees

Circular approach



Our clients

We follow up with more than 50 treatment plants in real time

Certificates

CERTIFIED SAFETY SYSTEM VCA** BTV AUDIT

Voka Charter for Sustainable Entrepreneurship

OUR SUSTAINABLE STRATEGY

Our mission

Clean water is our mission. We develop circular water solutions for industry, and therefore contribute to a sustainable water system in which reuse and recycling are the most normal thing in the world.

Our values

Customer orientation

Our customers and their projects are our priority at Pantarein. Our “Water at your service” model means unburdening our customer in all phases of the project, as well as after completion of the installation.

Innovation

In order to continuously improve our installations and services, we are fully committed to innovation, closely monitoring market developments, and participating in research programmes. We share our knowledge and experience – both internally and with customers and research partners – to continually evolve.

Shared passion

Our employees work very hard every day to achieve their shared passion: clean water. We give everyone the chance to give the best of themselves and develop to the fullest in their job. Every colleague is an indispensable part of our well-oiled machine.

Sustainability

Sustainability is a common thread throughout our activities. We don’t just build water treatment plants, we operate them to get the best out of them while at the same time, working with our customers to permanently improve them. Achieving growth by doing things right: that’s how we see sustainability. This ensures we are able to forge respectful and long-term relationships with our customers – the best guarantee of a sustainable future for our company, as well as providing as much pure water as possible.

Our strategy

Our business strategy is supported by four pillars.

1 Water at your service
2 Circular water solutions
3 Constant innovation
4 Corporate Social Responsibility driven by our employees

Our contribution to the United

The United Nations Sustainable Development Goals (SDGs) provide an important framework for our activities. As a company, we can therefore contribute to the global agenda of eradicating poverty, hunger, climate change, and other problems by 2030. We focus on the SDGs on which we know we will have the greatest impact: These are SDG6, SDG7, SDG8 and SDG12.

- Our water purification installations improve water quality, which means we are able to limit contamination of surface water and protect water-dependent ecosystems.
- We encourage water reuse and efficient water use.

- We increase the share of renewable energy on our company site and help our customers be more efficient with energy.
- We promote sustainable mobility for our employees.

- We achieve sustainable economic growth.
- We stimulate innovation, research and knowledge sharing.
- We promote a safe, healthy and inspiring work environment.

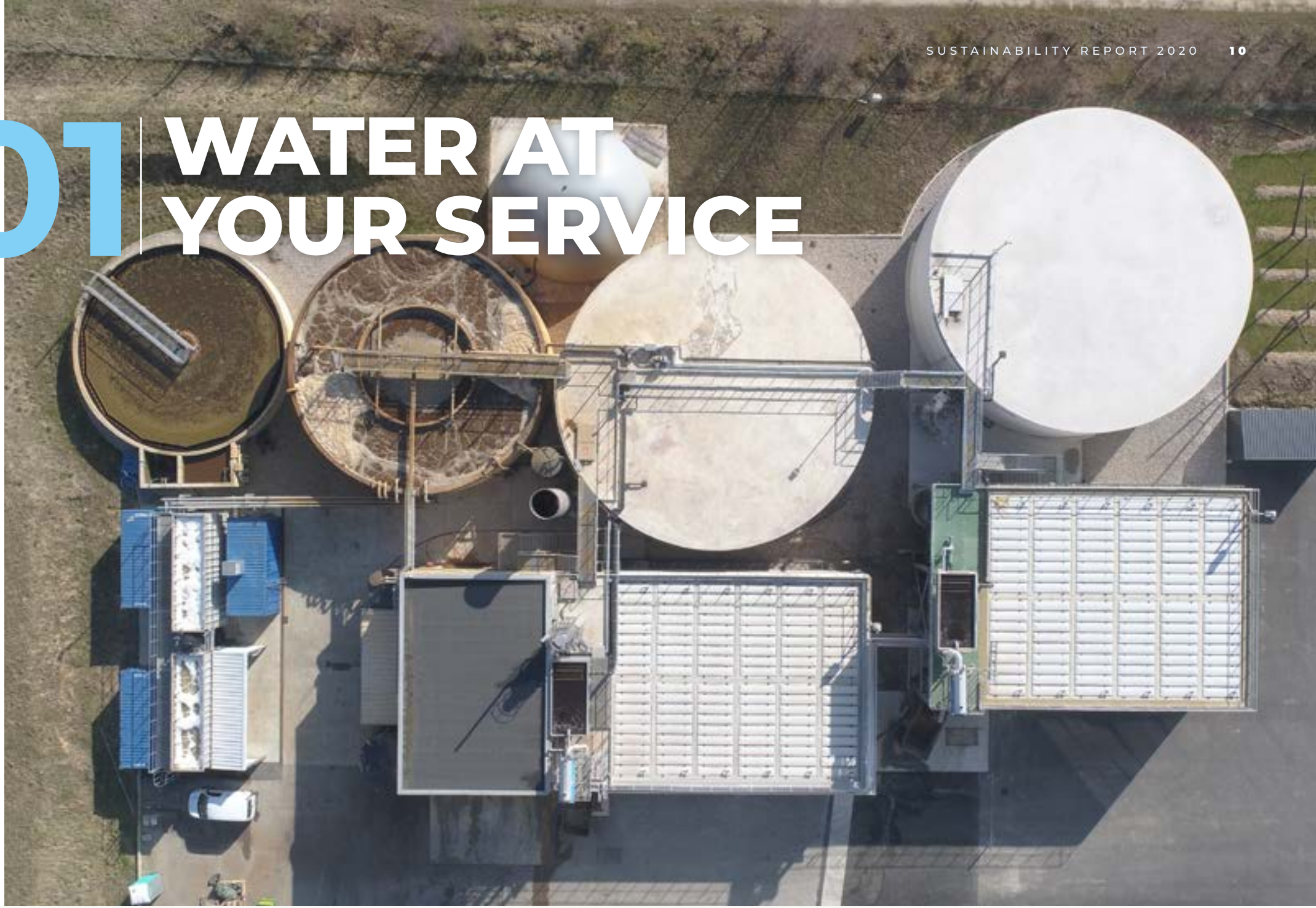
- We encourage sustainable and efficient use of water as a natural resource.
- We reduce our waste and focus on recycling and reuse.

Voka Charter for Sustainable Entrepreneurship

Voka Charter for Sustainable Entrepreneurship

This year, for the third year in a row, we will achieve the Voka Charter for Sustainable Entrepreneurship making us an SDG Pioneer. The Voka Charter for Sustainable Entrepreneurship helps us take a result-oriented approach to corporate social responsibility, inspired by the SDGs. Every year, we commit ourselves to a concrete plan of action, and the various initiatives are then described in this sustainability report. At the end of the year, our performance is assessed by a team of independent experts.

01 WATER AT YOUR SERVICE



A total circular approach

We realise circular water solutions for industry. These solutions offer companies certainty that their wastewater will be treated cost-effectively while ensuring sufficient water remains available in the long term. Using the motto **“Water at your service”**, we offer a total approach in five steps.

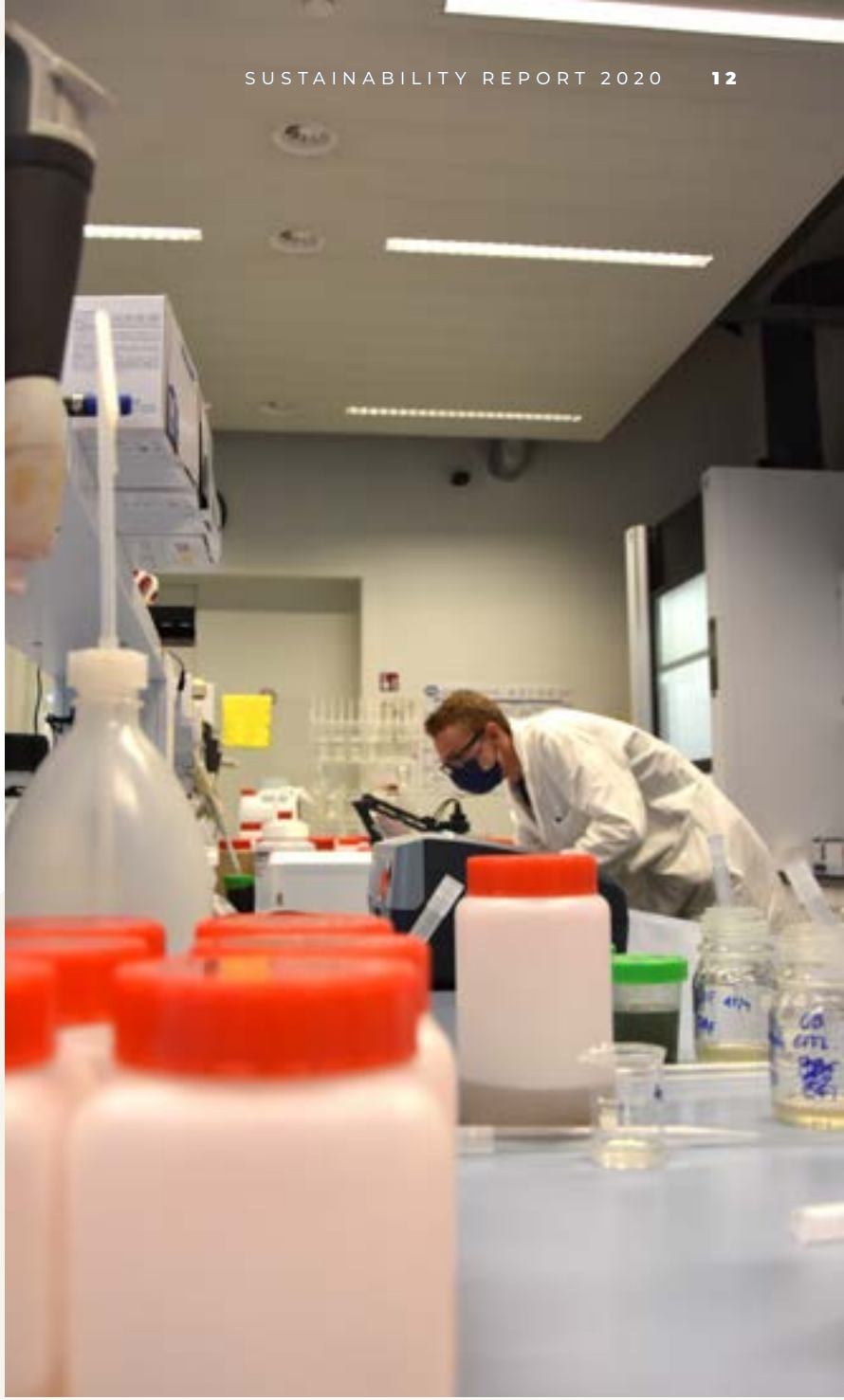
Water at your service in five steps

01
Auditing & consulting

We use an **audit** to map out all the water flows and processes and examine the composition of the company water. We then use a **feasibility study** to find out which solutions or technologies best fit your business process. If the company has an existing water purification installation, we will take a critical look at it and conduct an **optimisation study**. Sometimes, just a small adjustment is enough to perfect the water treatment.

02
Piloting & testing

We have our **own lab** in which we can test water samples. We use our **test hall** to simulate and test new technologies or adjustments to installations, tailored to each company. In some projects, we go one step further and set up a **pilot installation**. We carry out the necessary work for the design of the installation during this phase.



03
Realisation & start-up

The construction of an installation starts in our workshop where we **manufacture our own** critical components, such as a membrane filtration unit. Our team of technicians and welders work closely with our designers and engineers from start to finish. The **start-up** of the installation is done under the close supervision of our experts. They are responsible for taking samples and accurate adjustment of the installation. During our **hands on training,** we teach the customer everything they need to know about the operation and follow-up of the installation.

04
Operations

Our team of operators closely monitors the water treatment plant. We are driven to achieve optimal operation and pure water at the lowest possible cost for our customers.

Our operator regularly visits the installation to take samples and carry out technical checks on the installation (**on site check**). In addition, we remotely monitor (**via remote control**) each water treatment plant in real time using a dashboard. Our control room keeps an aerial view on all the installations we operate so we can (automatically) adjust and optimise them where necessary. Deviations or malfunctions are detected immediately. If a problem occurs, an operator or technician will be on site as soon as possible. Each customer receives a monthly summary report with the main results of the sampling and checks, as well as proposals for process improvement.

05
Ongoing innovation

As soon as the installation is in operation, we not only continue to monitor it, we systematically look at it with the customer to see what we can do to improve it. To keep our expertise sharp, and to drive innovation in the water sector, we participate in various **Flemish research projects**. Two years ago we started our own **innovation department**.

Mobile modules as an efficient solution

Pantarein Water has mobile technologies that we can offer for rent and put into place very quickly. These modules mean we can efficiently solve acute problems in an existing installation. We can also increase the capacity of a treatment plant, improve the quality of the effluent, or purify the effluent to drinking water quality. We can also integrate the mobile modules into existing treatment plants as plug-and-play modules and monitor them remotely.

Design-build-finance-operate as a guarantee for sustainable purification

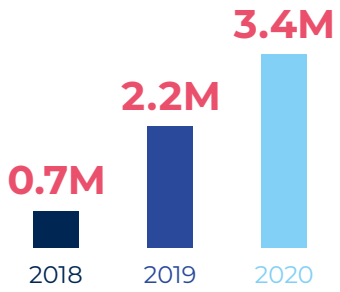
We offer customers a financial formula that perfectly matches the “Water at your service” approach: design-build-finance-operate. Pantarein builds the installation, operates it and takes care of the financing. Our customer enters into an operating contract for a period of 10 years, and pays for the performance of the installation. This co-operation offers the best guarantee of a sustainable result.

- The customer avoids having to make a large investment, and only pays depending on the amount (number of m^3) of waste water and the degree of pollution. In addition, a fixed fee is charged for depreciation and monitoring of the installation. The more water the company consumes and pollutes, the more it pays: an excellent incentive to use water sparingly.
- The company is assured that it will have the best available technologies due to the fact that Pantarein Water operates and monitors the installation itself. Our quality guarantee means we will investigate new, innovative solutions during the term of the agreement.
- Our customer is fully unburdened: the investment, construction and exploitation are completely looked after by Pantarein. The installation is monitored remotely, visited regularly and adjusted if necessary.

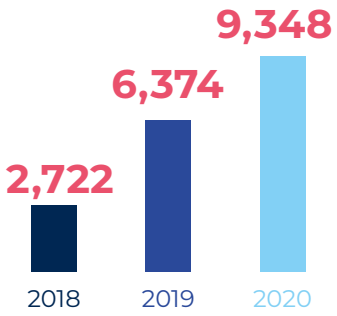
WATER AT YOUR SERVICE

THIS IS WHAT WE ACHIEVED IN 2020

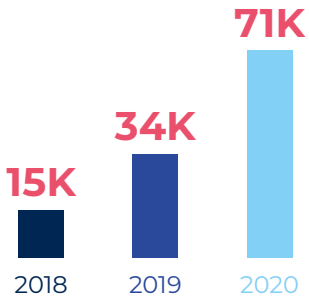
3.4 million m^3 of treated wastewater



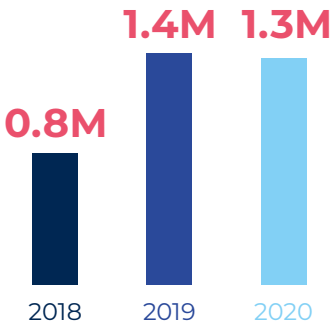
9,348 tonnes of processed COD*



71,000 m^3 water reused



1.3 million m^3 biogas



*Chemical Oxygen Demand

CASE

A state of the art water treatment plant for Carlsberg

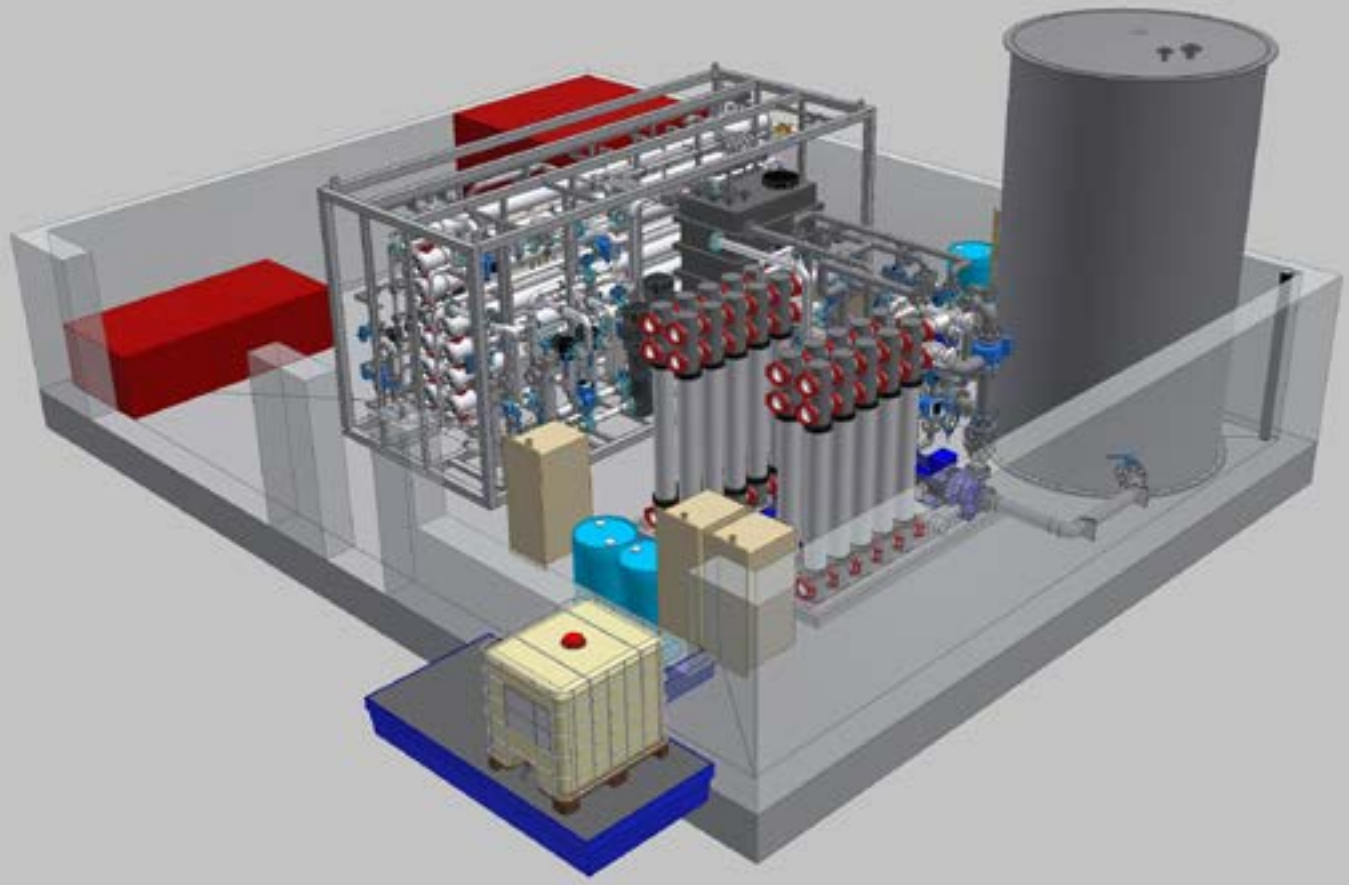
In 2020, we built a new state-of-the-art water treatment plant for the Carlsberg brewery in Fredericia, Denmark. The installation purifies 750,000 cubic metres of waste water per year, making it one of our largest projects.

The purification installation operates in several steps: anaerobic purification is followed by aerobic treatment in a membrane bioreactor (with Blue Foot Membranes, currently the most compact and energy-efficient membranes). The effluent is then purified further by reverse osmosis and a mineralisation step. After all these steps, the water is at drinking water quality and can be reused in the production process.

Thanks to the new water treatment plant, Carlsberg can reuse 90% of its process water. The installation will also produce 1.5 million cubic metres of biogas (per year), which will be converted into green heat. For example, the Carlsberg brewery will reduce its energy requirements by up to 10%.

Thanks to the new water treatment plant, Carlsberg can reuse 90% of its process water.

02 CIRCULAR WATER SOLUTIONS



Closing the water cycle at the company level

Pantarein develops **integrated solutions** to close the industrial water cycle. We do not limit ourselves to purifying water, we also optimise other parts of water management: intake from the water source, the production process, reuse and discharge. The result: wastewater that is less polluted, and lower water consumption – good for our customer and the environment.

Circular water solutions in five steps

01
Water purification

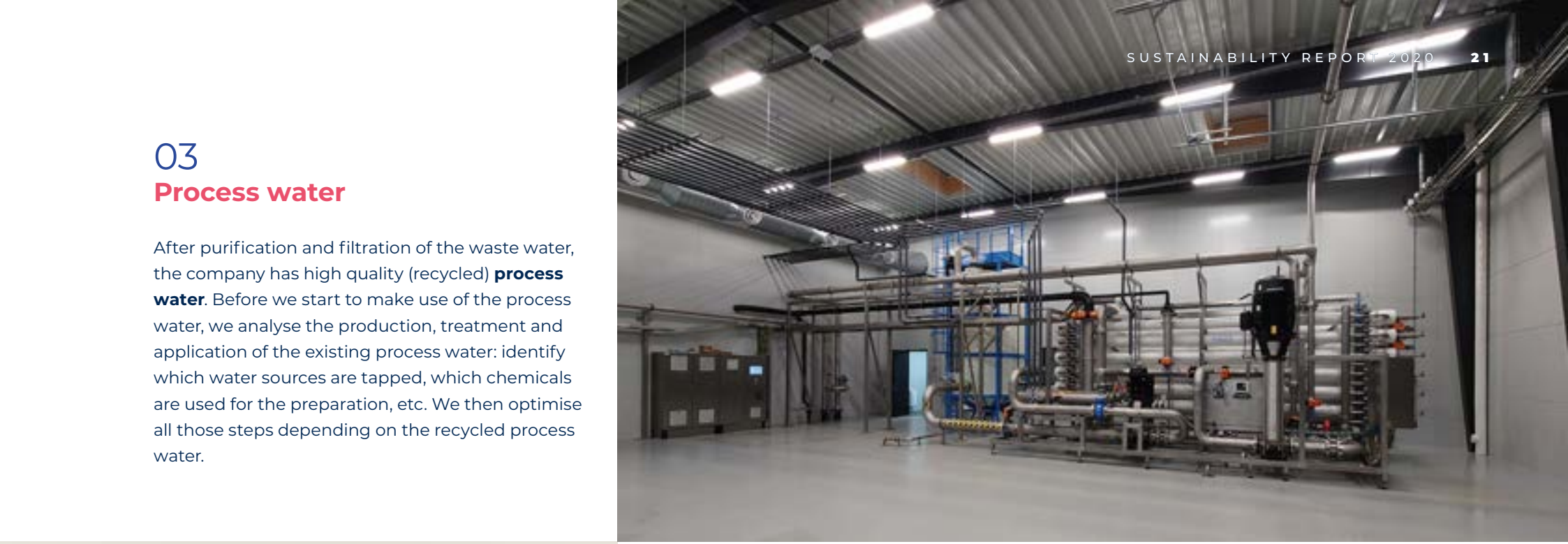
We use a water audit to map out the existing water management of the company. We look at the properties of the wastewater so we can propose the best available technologies to treat it. Pantarein Water is not tied to a specific technology, and therefore offers a wide range of **technologies and solutions**: anaerobic biological water purification with valorisation of biogas, aerobic biological water purification or a membrane bioreactor.

02
Water filtration

We often go one step further and purify the effluent from the water treatment plant using ultrafiltration or reverse osmosis until it reaches **drinking water quality**. For example, we upgrade the waste water of food companies into process water that meets the strictest quality requirements in the field of food safety.

03
Process water

After purification and filtration of the waste water, the company has high quality (recycled) **process water**. Before we start to make use of the process water, we analyse the production, treatment and application of the existing process water: identify which water sources are tapped, which chemicals are used for the preparation, etc. We then optimise all those steps depending on the recycled process water.



04
Water management optimisation

A water reuse project is often the reason to look at the **entire water management** of a company and optimise it. We help the company use fewer primary water sources and to be more economical with water (for example, by using less process water during cleaning). The consumption of energy and chemicals is also falling.

05
Internal water reuse

Finally, we examine the processes for which the water can be reused before it is sent to the water treatment plant.

CIRCULAR WATER SOLUTIONS

A SELECTION OF OUR 2020 PROJECTS

1. Duvel Moortgat brewery
- Water reuse
- Start up

2. Meurens syrup producer
- Anaerobic water treatment with biogas valorisation
- Water reuse
- Construction

3. Debrabandere brewery
- Anaerobic water treatment with biogas valorisation
- Membrane bioreactor
- Construction

4. Carlsberg brewery (Fredericia, Denmark)
- Anaerobic water treatment with biogas valorisation
- Membrane bioreactor
- Reuse
- Construction

5. De Cock meat products
- Membrane bioreactor
- Construction

6. The New Docks housing project
- Anaerobic water treatment with biogas valorisation
- Struviet
- Membrane bioreactor
- Start up

An overview of our installations
The circle size provides an indication of the amount of water we purify at each site.

CASE

Huyghe brewery reused up to 70% purified water

Pantarein Water strives to build long-term relationships: we allow water treatment to grow with our customers.

An excellent example is the partnership with the Huyghe brewery in Melle, known for, among others, Delirium Tremens. At the start of the collaboration, we developed a master plan containing the various steps to increase the capacity, sustainability and circularity of the existing treatment plant.

At the start in 2012, the existing treatment plant was equipped with a membrane filtration (MBR) to double the capacity and ensure the quality of the effluent meets the standards for surface water at all times. At the same time, we worked with the brewery to draw up a plan to reduce the specific water consumption in the brewery and limit beer losses.

An important step in 2016 saw the commissioning of a reverse osmosis (RO) process, which further upgrades effluent from the water treatment to drinking water quality. This water is mixed with the existing water sources (ground and tap water) and used for all the cleaning processes in the brewery.

In 2019, it was time for a thorough expansion to anticipate the rapid growth of the brewery. Anaerobic pre-treatment ensures up to 80% of the COD load is efficiently converted into biogas. The anaerobic effluent is purified further in the existing bioreactor that has seen its hydraulic capacity doubled (MBR). Finally, a second RO unit will also provide water savings of up to 70% in the long term. Thanks to the reuse and savings in the production process, the water consumption of the brewery has been greatly reduced. In 2008, 8.6 litres of water were needed to brew 1 litre of beer, now it is 3 litres.

The final step will follow in 2021: the valorisation of the biogas by producing electricity and heat.

Last but not least, Pantarein and Huyghe brewery are partners in the Eautomate innovation project.

03 ONGOING INNOVATION

Innovation, the key to our success

We are constantly improving our installations through collaboration and exchange within the company and with our customers. In addition, we actively participate in Flemish research programmes, including development and demonstration projects, with numerous knowledge and industrial partners. Our innovation department coordinates the research programmes.

Innovation themes 2020

01
Water reuse

The RepEAT development project sees us working with Volys, Haacht brewery, Citrique Belge and Flanders' FOOD to close the loop in the food industry. Using pilot tests, we investigate pre-treatment techniques that can increase the efficiency of water treatment and reduce operational costs. We compare two reuse technologies: ultrafiltration/reverse osmosis and membrane bioreactor/reverse osmosis. In addition, innovative technologies for quality assurance are also tested. The results of the project show it is also possible for food companies to reuse purified process water – where the process water must meet high quality requirements.

02
Smart control

Our installations are already largely monitored via remote control. We aim to eventually monitor all water flows and treatments of a company via one digital dashboard: the amount of water from different sources and in different process steps, the composition of all water flows, the regulation of the water treatment and/or reuse installation, the dosing of chemicals in various process steps, etc. This means we can react even more quickly while continuously screening the entire water chain at a company and adjust it where necessary. In 2020, we started the Eautomate project in which we investigate advanced digitisation and smart control of our installations further at Boortmalt and Huyghe brewery.

03
Granulation and sludge quality

In 2019 and 2020, we participated in the AEROGRAM project with a number of research institutions. We tried to optimise the settling properties of sludge in an aerobic treatment plant by adapting the process control. Better granulation – larger and heavier sludge granules – leads to a shorter settling time, which increases the efficiency or capacity of the existing treatment plant.

The new sludge technology was successfully tested on industrial wastewater, largely from meat processing companies. In addition, we showed that good sludge structure also positively influences the operation of the membrane bioreactor. The larger sludge granules reduce membrane contamination, reducing the cleaning frequency.

ONGOING INNOVATION

WE HAVE ALREADY COMPLETED THESE INNOVATION PROJECTS

2016 – 2020

Baekeland mandate

Integration of aerobic granular sludge and membrane technology

Partner: University of Antwerp
With the support of VLAIO

September 2020 – September 2022

Eautomate research project

Intelligent control of industrial water treatment plants

Partners: BIOMATH (Ghent University), Boortmalt, Huyghe brewery
With the support of VLAIO

January 2020 – March 2022

RepEAT development project

Water reuse in the food industry

Partners: Flanders' FOOD, Citrique Belge, Haacht Brewery, Volys | With the support of VLAIO

January 2019 – June 2020

AEROGRAM demonstration and dissemination project

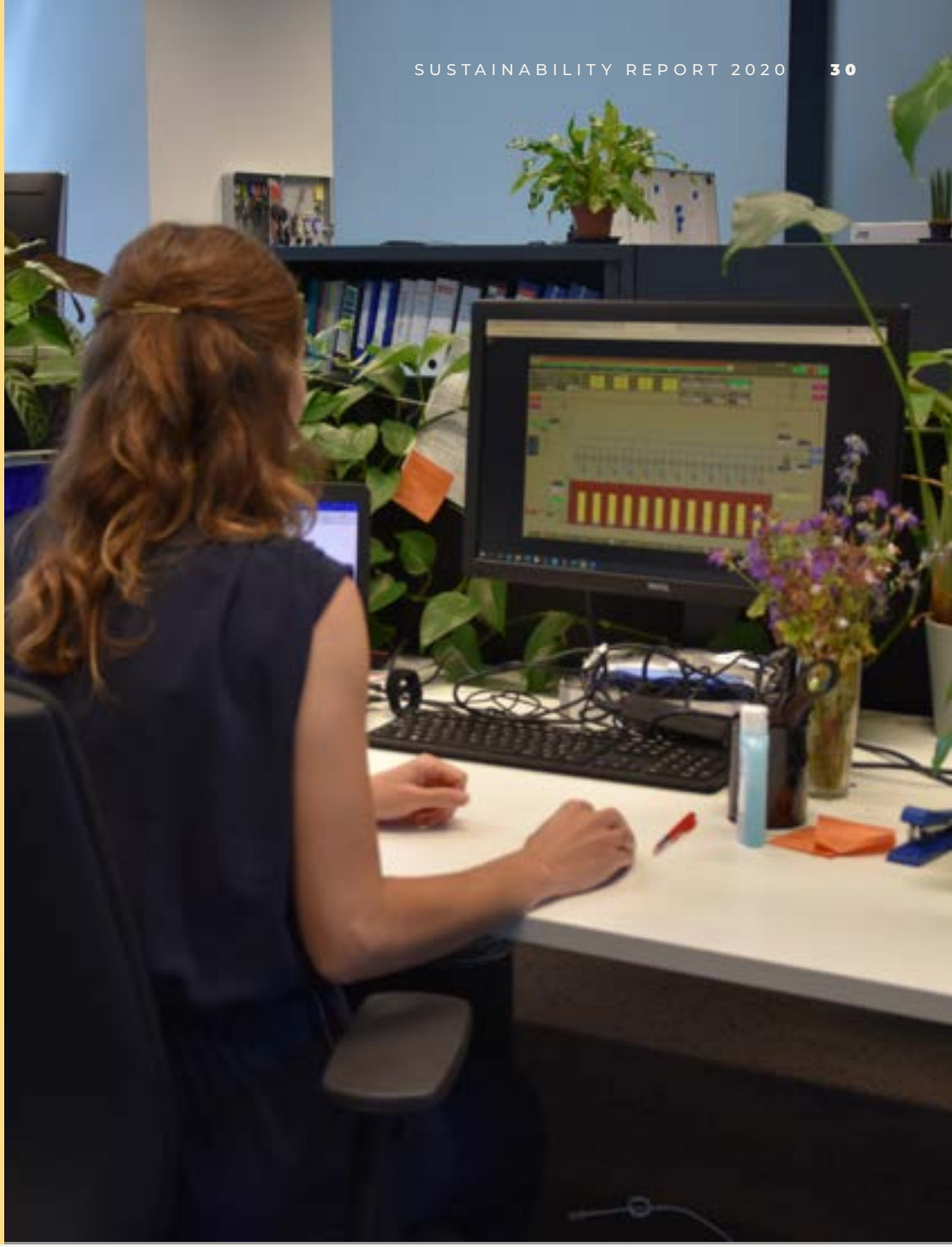
Aerobic granular membrane bioreactor

Partners: BioWAVE (University of Antwerp), VITO, Izico, WZI Olen | With the support of Vlakwa

04 CSR DRIVEN BY OUR EMPLOYEES

A safe and motivational place to work

For us, it is a matter of course to take care of our employees by making our company a safe and motivational place to work while at the same time, providing people with plenty of opportunities. Corporate social responsibility also means we reduce our own footprint as much as possible. This vision is put into practice by our cooperative society.



Four priorities for our people

01
A safe workplace

Our dynamic Safety, Health and Environmental policy (HSE) ensures our employees can work in complete safety. This means, among other things, that we constantly draw attention to the safety procedures and adjust them, depending on our experiences. In 2019, we obtained the VCA** certificate after an extensive audit. Every year, we organise internal and external training courses, carry out internal checks, and investigate incidents and (near-miss) incidents. We actively encourage our employees to report unsafe situations. This ensures we can immediately tackle the things that could be done better.

02
A motivational place to work

Each of our employees plays an equally important role in the Pantarein story. In our team, everyone is provided opportunities, and everyone's work matters. This positive, motivational work atmosphere encourages our people to give the best of themselves. We build up knowledge and skills through internal and external training so our employees can grow into independent team players who take the initiative, discuss points for improvement, and propose solutions. Relaxing team activities are regularly scheduled, such as a New Year's drink and our annual team day. Excellent moments to celebrate our successes together and continue to build on our story.

03
Our Cooperative Society

Since 2019, our employees have been able to participate in the company and benefit from our growth. By setting up a cvba (cooperative company with limited liability) they can acquire shares in the company. Every employee who has been working for us for three years is given the opportunity to join. Today, our cvba has twelve partners.

In addition to financial participation, the cvba also encourages our people to be participative. All our partners are encouraged to bring in new ideas or discuss opportunities. The aim is to allow the cvba to grow into a sounding board for all employees. The cvba also plays an important role in directing and monitoring various sustainability initiatives and our contribution to the SDGs through the Voka Charter for Sustainable Entrepreneurship.

04
Giving young people opportunities

Young people get opportunities in our company. They can do an internship with us, complete their thesis, do a student job, or take their first steps into the labour market through the VDAB recruitment programme. Young people who come to our company in this way are more often than not offered a permanent job with us.

Care for the environment and climate

Our circular water solutions enable our customers to use water more sustainably and efficiently while improving the quality of the surface water. We are also committed to limiting our impact on the environment on our company site itself. Our cooperative company, the cvba, is the driving force behind this.

Energy efficient office

We reduce the climate impact of our office, lab, test hall and workshop by making the most use of renewable energy as possible. Our office is equipped with 50 kW of solar panels and a heat pump. At times when insufficient solar energy is available, the grid power is supplied by Eneco, which is guaranteed to come from renewable sources.

Sustainable mobility

We are also making efforts to reduce our ecological footprint in terms of mobility. We avoid many movements because our operators can monitor installations from a distance. In recent years we have invested in electric bicycles, and in 2020 we bought a hybrid vehicle and an electric vehicle. Our employees can use our pool cars for private trips.

Care for biodiversity

In support of the Voka Charter for Sustainable Entrepreneurship, we placed two beehives on the roof of our office at the beginning of 2021, and we made the company premises greener with a bee-friendly flower meadow.

CORPORATE SOCIAL RESPONSIBILITY

THIS IS WHAT WE ACHIEVED IN 2020

Energy

82 MWh

green power

60 MWh produced by our solar panels, of which almost 40 MWh is generated ourselves

Training

53

53 training courses, of which

50 external 3 internal

Mobility

30% of our employees come to work by train and/or bicycle

3 hybrid-vehicles

1 electric vehicle

Safety

0 accidents at work resulting in absence from work

32 unsafe situations reported

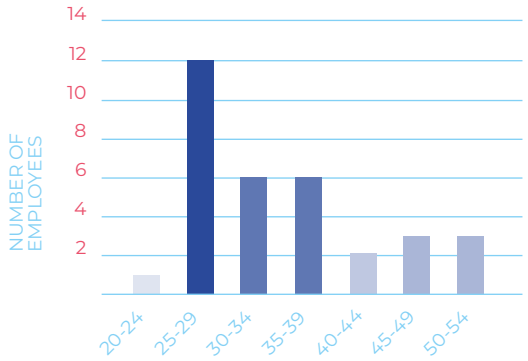
36 accidents at work requiring (first aid) care

13 employees

23 sub contractors

Employees

Age profile



Youth on the workfloor

4 Job-students

2 VDAB professional immersion internship

2 VDAB training internship

1 VDAB individual vocational training

CASE

Allgro opts resolutely for the purification and reuse of waste water

In 2017, the government obliged the vegetable processing company, Allgro in Sint-Lievens-Houtem, to invest in a buffer tank for the storage of waste water. Instead, Allgro decided to focus on reusing the waste water and to invest in its own water purification and recycling plant.

The waste water is first aerobically purified in a membrane bioreactor. The water is then treated via reverse osmosis in the second step. Thanks to this technology, the salts and residual organic compounds are also removed. After additional disinfection, the water reaches drinking water quality and can be used again.

The installation has a capacity of 180 m^3 per day. For example, Allgro can reuse up to 70% of the purified water in the production process.

pantarein
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