

Colubris Connects

**‘What sets
Colubris apart
is the personal
attention of
their team.’**

The HEIDEMARK—Colubris story

Water treatment you can trust

Realizing a robust and cost-efficient treatment process

That is Colubris

Our renewed brand identity

COLUBRIS 

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Foreword

After the special anniversary year in which we reflected on 40 years of Colubris, we now confidently turn our gaze to the future.

This second edition is all about development and renewal. You will read how, together with our customers and partners, we work on innovative projects, how we translate technologies into concrete solutions, and how we take on our role in the global transition toward a circular economy.

We are also introducing our renewed brand identity: fresh, powerful, and future-oriented, a visual translation of who we are and where we are heading. At Colubris, we combine genuine care and attention with a sharp focus on results.

I hope that while reading, you feel the same pride and energy that drive us in our work every day.

Enjoy your read,

Frank Tillmann | CEO



Colophon

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Sustainable solutions through partnership: The HEIDEMARK–Colubris story

What began nearly 30 years ago as a series of initial conversations has evolved into a robust and forward-thinking partnership. HEIDEMARK, one of Germany’s leading turkey processors, and Colubris have built a cooperation founded on shared values: innovation, continuity, and a sustainable approach to water and energy use.



A trusted partnership since 1998

“I have been with HEIDEMARK for over 33 years,” says Rainer Lüken, who is responsible for wastewater, fresh water, and energy management. “We started talking to Schneider Engineering (taken over by Colubris in 2008) in 1998. After visiting several plants, we decided to work with Schneider. Since then, the partnership has continued to grow.”

Over the years, Colubris has developed, supplied and supported a wide range of water treatment solutions at HEIDEMARK’s facilities in Germany. “They provided us with crucial technologies,” Lüken explains, “from drum screens and sieves to full clarification, treatment and reuse systems.”

‘We’ve never had to halt production due to water treatment issues.’

Rainer Lüken | HEIDEMARK

Operational continuity through precision

The wastewater from HEIDEMARK’s production process undergoes a carefully designed treatment journey. It begins with coarse screening, followed by chemical-physical treatment, and biological treatment. “We also have a treated water recovery system in place since 2018, which we developed together with Colubris”, says Lüken. “This system ensures we maintain our water reserves and reuse energy from the clean water in production. The rest of the treated water is then discharged into the Hageler Bach stream.”



Rainer Lüken: “I have been with HEIDEMARK for over 33 years,”

That level of efficiency ensures more than just sustainability, it guarantees operational continuity. “We’ve never had to halt production due to water treatment issues,” Lüken notes. “That’s a huge benefit. On top of that, we reuse both clarified effluent water and polished effluent water for various non-product-contact purposes.”



‘What sets Colubris apart is the personal attention of their team.’

Rainer Lüken | HEIDEMARK

This forward-thinking approach reflects the collaborative spirit between the two companies. “Colubris is always open to pilot projects,” Lüken says. “We’ve tested solutions together- like we did with the clean water treatment- and that helps us develop tailored, future-proof systems.”

‘We know each other well’

What sets Colubris apart, according to Lüken, is the personal attention of its team. “We know each other very well. We know how Colubris works, how they think, and how they build. That familiarity makes working together much easier. Of course, there are always good days and bad days, but in the end the collaboration works very well. That’s why I would definitely recommend Colubris to others.”



(from left to right) Thomas M. Henseler, Dr. Hanna Strüve and Rainer Lüken from HEIDEMARK, Arjan Willemsen, Emma Heesen and Arno Simons from Colubris, during the meeting

HEIDEMARK strengthens its sustainability with anaerobic installation

HEIDEMARK and Colubris are working on the realization of an advanced anaerobic water treatment installation, called CCAP (Colubris Cleantech Anaerobic Process). It will enable HEIDEMARK to significantly treat its wastewater and simultaneously recover sustainable energy in the form of biogas.

According to current planning, construction could begin in 2026, with commissioning potentially taking place by the end of that same year. Thanks to Colubris’s anaerobic technology, the chemical oxygen demand (COD) in the wastewater will be greatly reduced. The biogas produced in the process will be used in a combined heat and power (CHP) unit to generate electricity and heat.

Recently a public information meeting was held in Ahlhorn, where HEIDEMARK informed local residents and municipal representatives about the project. Colubris was present to explain the technology and the process. The meeting was very well received.



‘We also have a treated water recovery system in place since 2018, developed together with Colubris.’

About HEIDEMARK

HEIDEMARK is a poultry processing company specializing in turkeys. The company manages the full value chain, from rearing and farming to slaughter and distribution, with its own farms, transport, and logistics. HEIDEMARK’s long-term vision is clear: sustainable production, efficient water and energy use, and strategic partnerships like the one with Colubris. Together, we’re not only treating water, we’re building a cleaner and smarter future.

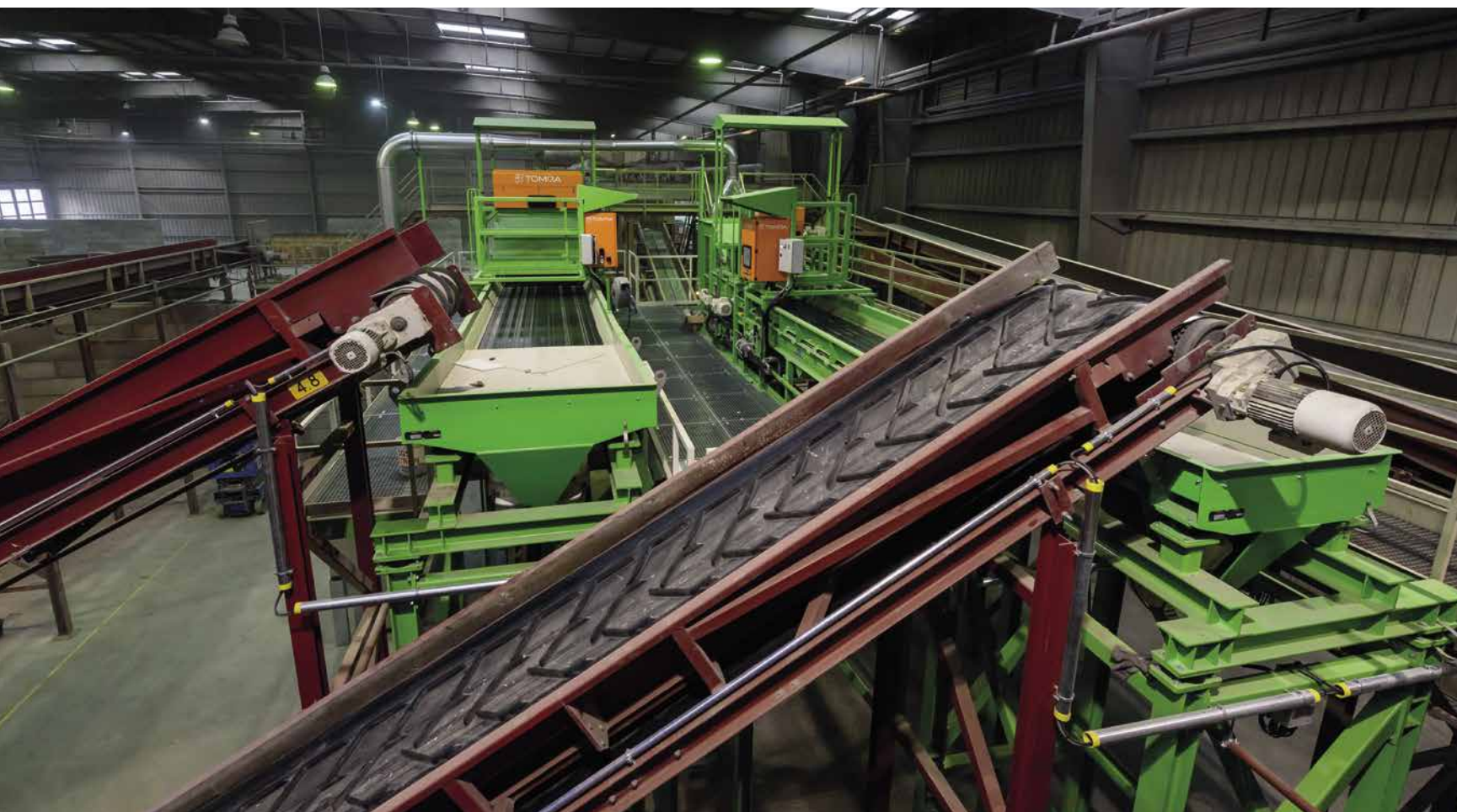
For more information, please visit www.heidemark.de/en.



From waste to valuable resource

The innovative waste processing at Twence

Twence plays a key role in sustainable waste processing, employing innovative solutions to minimize environmental impact and close the materials loop. Colubris made a significant contribution to this goal by developing and installing an advanced sorting facility at Twence's main location in Hengelo, the Netherlands.



The project, which began in 2002, remains the foundation of Twence's operations and has evolved over time to meet changing requirements and regulations in waste management..

Flexibility and Efficiency

Twence's sorting facility is designed with flexibility and efficiency in mind, processing residual waste and separating it into various components suitable for recycling or as a resource for energy production. The system can also be adjusted to handle different types of waste streams, thanks to a semi-automatic adjustment of the machinery. This enables Twence to respond effectively to changes in the waste supply.

A key component of the design is the high-capacity storage and dosing hopper, which ensures a steady flow of material into the sorting system. Currently, this system is manually loaded with a loader, but there are advanced plans for an automated floor bunker to further enhance efficiency. The sorting process itself uses a combination of robust drum screens for primary and secondary separation and stretch decks for fine screening, with the latter specially designed to prevent clogging from wet materials.



Recovering Metals

An important aspect of the installation is metal recovery from waste using electromagnets, which efficiently extract valuable metals. Additionally, plastics are manually separated in the sorting cabins, commercially valuable materials for recycling. Future upgrades include the use of NIR technology, AI, and robotic sorting, enabling further automation and optimization of the sorting process.

Environmental considerations were central to the design of this facility. All equipment is electrically powered, with motors adjusting to load for efficient energy consumption. Odor and dust emissions are minimized as much as possible, and safety is ensured through

thermal imaging sensors that automatically activate fire detection systems. Additionally, the design minimizes the need for personnel on the shop floor, contributing to a safer work environment.

The project at Twence reflects Colubris's core values: innovation, results-oriented focus, and expertise. The project is more than just a technical solution—it is a significant step toward a circular economy where waste is seen as a valuable resource.

About Twence

Twence is dedicated to a sustainable, circular, and bio-based society. Through innovations and new technologies, we are bringing more materials back into the cycle from waste and biomass. Additionally, the energy yield from waste, biomass, and solar energy continues to grow, making a significant contribution to regional sustainability goals.

For more information, visit [twence.com](https://www.twence.com).

TWENCE



11 | That is **COLUBRIS**

Colubris and OxyMem (Dupont) sign Letter of Intent

Colubris and OxyMem Ltd, part of Dupont Water Solutions, signed a Letter of Intent (LOI). This agreement marks the start of a strategic collaboration for the application of OxyMem's innovative Membrane Aerated Biofilm Reactor (MABR) technology in wastewater treatment plants in the Netherlands and within the global meat processing industry.

Through this agreement, Colubris will exclusively introduce and integrate MABR technology at municipal wastewater treatment plants in the Netherlands and plants in the meat industry worldwide. The collaboration focuses on implementing MABR technology at regional water authorities and within industrial applications, with the aim of achieving more efficient and sustainable water treatment solutions.

The MABR technology increases biological treatment capacity and effluent quality. The patented bubble less oxygen transfer enables simultaneous nitrification and denitrification, providing nitrogen removal, energy savings, less waste sludge and a lower ecological footprint – without additional infrastructure.

From left to right: Frank Tillmann, CEO of Colubris and Barry Heffernan, COO of OxyMem.



'We are delighted to enter into this partnership with OxyMem,' says Frank Tillmann, CEO of Colubris. 'This technology offers huge benefits in terms of energy efficiency and performance, which fits perfectly with our mission to make contributions to a circular world.'

Barry Heffernan, COO of OxyMem adds: 'Joining forces with Colubris will allow us to implement our MABR technology on a broader scale and maximise its impact on the industry. We look forward to a successful collaboration.'

OXYMEM



Introducing our renewed brand identity

Since 1984, innovation has been in our DNA. We explore new technologies and solutions that not only solve today's challenges but also anticipate tomorrow's needs.

With decades of experience, we deliver solutions in water treatment, waste separation, and bioresources – turning your challenges into value and impact.

With decisiveness and deep expertise, we stay at the forefront of our sector – creating forward-thinking ideas and building a sustainable future together.

We believe in a world where everyone has access to clean water, healthy food, and reusable raw materials. That belief drives our work: approaching every project with care and attention, listening closely to your needs and guiding projects from concept to realization. This way, we achieve meaningful results that move your organization forward.

Founded as a family business, we carry forward the values that shaped us: reliability, commitment, expertise, innovation, and a results-driven mindset.

These values guide us into the future – a future that also calls for a renewed brand identity, fresh, powerful, and aligned with who we are and where we are heading.

That is Colubris



The story behind the hummingbird

In addition to our company name, the hummingbird takes a prominent place in the renewed brand identity. CEO Frank Tillmann explains why Colubris' late founder, Gertie van den Hurk, chose this particular bird as the company's symbol – a creature that fascinated him throughout his life.

"The hummingbird, or Colubris, is a remarkable bird. It is resilient and enriches its surroundings. For Gertie, it symbolized agility, perseverance, endurance, and the pursuit of dreams."

"Qualities that perfectly reflect our organization and vision. We don't just watch from the sidelines; we actively contribute to the global transition toward a circular economy. We do so by developing technologies for projects that are essential to our customers and that help create a more circular world."

Scan the QR code to watch the video in which we share the full brand experience with you.





Water scarcity: a barrier to companies that want to move forward

In recent years, we have all become familiar with the phenomenon of grid congestion: the electricity grid is so overloaded that companies can no longer be connected or receive additional capacity. But it's not just the power grid under pressure, our water supply is becoming overstretched as well. Water scarcity is emerging as a new form of congestion that companies are increasingly facing.

Closing the loop

In more and more regions, groundwater levels are under pressure, wastewater discharge permits are becoming stricter or more limited, and industrial (drinking) water use is being discouraged.

At Colubris, we experience this every day in our conversations with customers. From slaughterhouses to vegetable processors: entrepreneurs want to move forward but are being told by governments that expansion is only possible if they close their water cycle. Using water more efficiently and sparingly is becoming an essential requirement.



The system at VEOS for water treatment and reuse of energy from the purified water.

From threat to opportunity

Water scarcity is not just a threat, it also offers opportunities for structural sustainability. With smart technologies, wastewater can be treated, and, where legislation allows, reused. This reduces companies' dependence on external sources, lowers their water footprint, and strengthens the resilience of their operations. This is precisely where Colubris excels: tailor-made solutions that combine technology, expertise, and efficiency.

In countries such as Namibia, Belgium, Germany, the US, and Australia, wastewater reuse is permitted, sometimes even as drinking water.

- **VEOS (Belgium)** : By purifying and reusing water in their process, VEOS saves 45 million liters of groundwater each year.
- **HEIDEMARK (Germany)**: Here we implemented a complete system for water treatment and reuse of

energy from the purified water. The result: greater sustainability and continuity in production.

Just as grid congestion has reshaped how we think about energy, water scarcity must do the same for industrial water use. The problem is already here. Let's acknowledge it, make it part of the conversation, and work together to solve it.

Want to learn more?

We'd be happy to discuss tailor-made solutions to help you treat, save, and possibly reuse water. Get in touch with one of our specialists today.

Discover the Water Reuse Pilot Unit

On the next pages, discover our Water Reuse Pilot Unit. Have a quick browse!



The stepping stone to sustainable treatment

Water Reuse Pilot Unit

As we already highlighted earlier in this edition of Colubris Connects: water is becoming increasingly scarce. Companies are facing stricter discharge regulations, limitations on the use of mains or groundwater, and the growing ambition to make processes more sustainable. A smart way to respond to these challenges is through water reuse. With the Colubris Water Reuse Pilot Unit, we demonstrate how this works in practice.



The pilot unit is housed in a compact 20 ft container and combines various technologies developed by Colubris. Thanks to its plug & play installation, it can be tested on-site to determine which configuration best fits your specific situation. This ensures you always find the most efficient and sustainable solution.

Because the unit is modular, it can be tailored to your own (waste)water. The result: a system that is reliable, consumes less energy and fewer chemicals, and delivers the lowest possible Total Cost of Ownership (TCO). Through a secure cloud connection, all tests can be monitored in real time and later analyzed by our process technologists.

The Water Reuse Pilot Unit can treat water to drinking water quality, greywater quality, or to the level required by the strictest discharge standards. This makes the unit suitable for a wide range of applications, including the red meat, fish, poultry, and dairy industries, potato, vegetable, and fruit processing, the paper and pulp sector, as well as municipal wastewater treatment plants (WWTPs).

Key benefits

- Compact, flexible, and modular
- Plug & play: quick to deploy
- Capacity: 500 – 1000 liters per hour
- Online monitoring
- Direct insight into OPEX and CAPEX



Discover the Water Reuse Pilot Unit in our video

Scan the QR code.



Would you like to discover what water reuse could mean for your organization? Our experts will be happy to tell you more about the possibilities of the Water Reuse Pilot Unit.

WATER REUSE PILOT UNIT

Sharing knowledge is growing together

Get to know Colubris Academy

Knowledge is one of Colubris' greatest sources of strength. But knowledge only gains real value when it is shared and applied. That is exactly the mission of the Colubris Academy: a place where students, customers, partners, and Colubris employees learn, research, and grow together.



Luan Veenhuis: 'I see the Colubris Academy in 5 years as a respected knowledge institute.'



Employees receive an explanation about an innovation during a Lunch & Learn

"Much knowledge resides in people's minds or is scattered throughout the organization. With the Academy, we want to centralize it, make it accessible, and at the same time create new knowledge," says Luan Veenhuis, Hub Manager of the Innovation Hub Winterswijk and responsible for the Academy within Colubris. "This way, we ensure that we not only preserve knowledge, but also continuously renew it."

Three pillars

The Colubris Academy is built on three clear pillars:

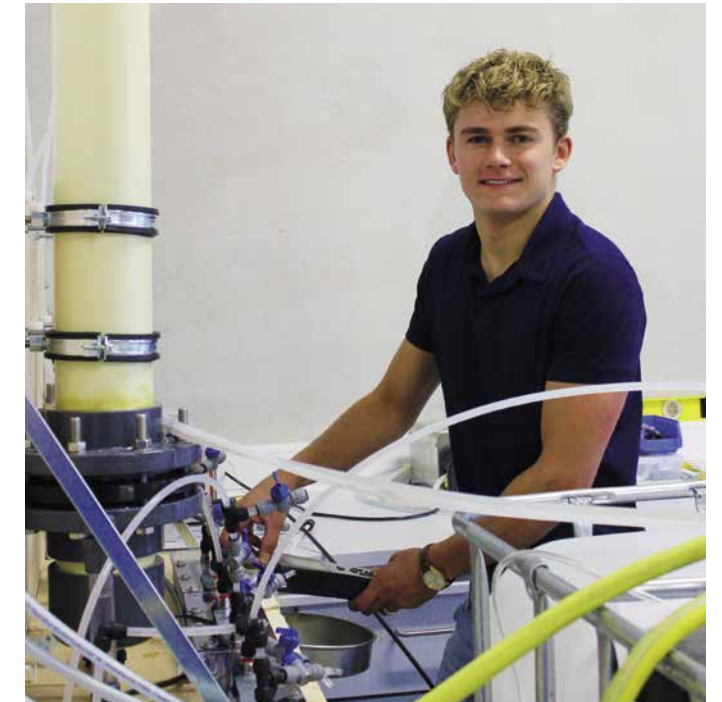
- **Applied Research** | Students and Colubris employees collaborate on real-world issues and deliver improvements and innovations.
- **Workshop & Training** | Short, interactive, and practice-oriented sessions for customers, Colubris agents, and employees to strengthen skills.

- **Courses & Education** | In-depth theoretical knowledge and professional competencies for Colubris employees.

Future vision

In five years, Luan envisions the Colubris Academy as a respected knowledge institute: "With a solid foundation in e-learning, a rich knowledge library, and a culture in which employees and students actively contribute to solutions for a more circular world. Not only by developing new technology, but also by sharing experiences and insights. Knowledge should simply never be lost — it must inspire others."

Environmental Science student Bram Waalkens working on his research.



Firmly embedded

The Academy is firmly embedded in the Innovation Hub Winterswijk-Lichtenvoorde and collaborates with vocational schools, universities of applied sciences, universities, and regional partners. Students gain practical experience there and contribute to innovation.

For more information about the Innovation Hub, visit innovatiehub.com or scan the QR code.





Water treatment you can trust

Realizing a robust and cost-efficient treatment process

Following a devastating fire in 2019, Noblesse Proteins took the opportunity to rebuild with a focus on efficiency and sustainability. The new facility included a state-of-the-art processing plant as well as a modern wastewater treatment system. Lacking in-house expertise in water treatment, Noblesse Proteins partnered with Waterstromen, a company with deep knowledge and experience in the field. Together, they developed a dedicated biological treatment plant. To realize the project, Waterstromen brought in Colubris to handle the design and construction of the facility, which now processes up to 2,000 m³ of wastewater per day. Arjan Jansen of Lorkeers, Senior Process Technologist and Project Leader at Waterstromen, reflected: “I’m truly proud of what we’ve accomplished here together.”



“I started at Waterstromen in 2011. Today, in addition to my role as Senior Process Technologist, I’m also a project leader. The project at Noblesse Proteins in Wijster is one of the largest I’ve worked on. We are responsible for ensuring that the wastewater from Noblesse Proteins is always treated properly, and that the effluent is discharged in compliance with permit requirements to the pumping station of the Drents Overijsselse Delta Water Board in Pesse. Waterstromen operates industrial wastewater treatment plants; we don’t supply technology ourselves, so we rely on partners like Colubris for that.”

A Robust Treatment Plant

“Noblesse Proteins approached us with a clear request: a robust system with high operational reliability—in short, a treatment plant that always works. Experience with their wastewater revealed it to be complex, often posing challenges in both meeting discharge standards and maintaining stable treatment performance. For Noblesse Proteins, ensuring the continuous, reliable operation of their water treatment system was therefore crucial. In close collaboration with Colubris, we designed a plant tailored precisely to Noblesse Proteins’ needs.”

‘Few companies demonstrate such a strong combination of technical capability and client-focused collaboration.’

Arjan Jansen of Lorkeers | Waterstromen



Arjan Jansen of Lorkeers: Senior Process Technologist and Project Leader at Waterstromen.

“What impressed me most about Colubris was their ability to truly listen to client, combined with their exceptional technical expertise. I was particularly struck by their openness to adopt a technology that was unconventional for them. Few companies demonstrate such a strong combination of technical capability and client-focused collaboration. Rather than opting for traditional flotation or sedimentation, we chose an aerobic treatment process with a belt thickener as the most efficient way to separate the effluent and aerobic biomass. By fine-tuning the system settings, we achieved the desired dry matter content – significantly reducing disposal costs. To the best of my knowledge, this approach, at this scale, is unique worldwide.



The wastewater treatment plant with the Noblesse Proteins processing facility on the right.

Strong Collaboration

“Noblesse Proteins is very satisfied with the system. It works – and that’s what matters. From a technical standpoint, a more advanced solution was possible, but that would have increased the risk of disruptions. Instead, we opted for a simpler, more robust design. As a result, a single operator can manage the system, where previously four or five were needed leading to huge cost savings. In addition, we have managed to cut biomass disposal volume in half compared to conventional thickening methods. With less water to transport, the system is not only more efficient, but also significantly more cost-effective.”

‘We have managed to cut biomass disposal volume in half. The system is not only more efficient, but also significantly more cost-effective.’

Arjan Jansen of Lorkeers | Waterstromen

About Noblesse Proteins

Noblesse Proteins produces proteins and fats from category 3 by-products from poultry slaughterhouses. These products are key ingredients for pet food, aquafeed, biofuel, and fertilizer markets worldwide.

Visit noblesseproteins.nl for more information.



Photo - Waterstromen

“Like Colubris, we believe in continuous progress. I look back on the design phase with great enthusiasm. Collaborating and brainstorming with Arjan Willemsen, Process Engineer at Colubris, really felt like 1+1=3, exceptional synergy. That collaborative spirit continued throughout the project. Whenever issues arose, it was quickly and effectively solved by the highly committed project leader Albert-Jan Klijnsma. There was a strong sense of mutual trust and connection, which is why we are eager to work with Colubris again on future projects.”

Discover more

Scan the QR code to watch our video at Waterstromen.



About Waterstromen

Since 1998, Waterstromen has been operating water treatment facilities in the Netherlands for industrial wastewater and the processing of organic residual streams. In addition, Waterstromen experts support companies with the operation of their own water treatment systems.

Visit www.waterstromen.nl for more information.



‘To the best of my knowledge, this approach, at this scale, is unique worldwide.’

Responsible employer

Founded in 1984 as a family business, Colubris is built on values such as reliability, commitment, expertise, innovation, results-oriented thinking, and decisiveness. These values are not just a reflection of our roots – they are the driving force behind our way of working. They shape our approach to employment, fostering a sense of pride and belonging. These work values ensure that our employees feel at home at Colubris, and show it.

Do you want to be active in a growing market where we develop innovative solutions for global challenges? Then quickly visit colubriscleantech.com or scan the QR code to see our current vacancies. If your vacancy is not listed, feel free to send us an open application.



Connecting & Innovating: That is Nexus



Soon, we will open the doors of Nexus at our headquarters in Winterswijk, the Netherlands: a space built around connection and innovation.

A place designed to inspire—where people, ideas, and innovations meet. Here, we showcase the best of Colubris, from our latest pilot units to advanced R&D test setups.

‘The name Nexus comes from the Latin word nectere, meaning to connect’

The name Nexus comes from the Latin word nectere, meaning to connect. And that is exactly our mission: to engage customers and partners with our technologies, solutions, and opportunities.

Nexus will also become the perfect venue for future knowledge sessions and inspiring events.

In the coming months, Nexus will continue to take shape. Don't miss a thing, follow us on social media for the latest updates!

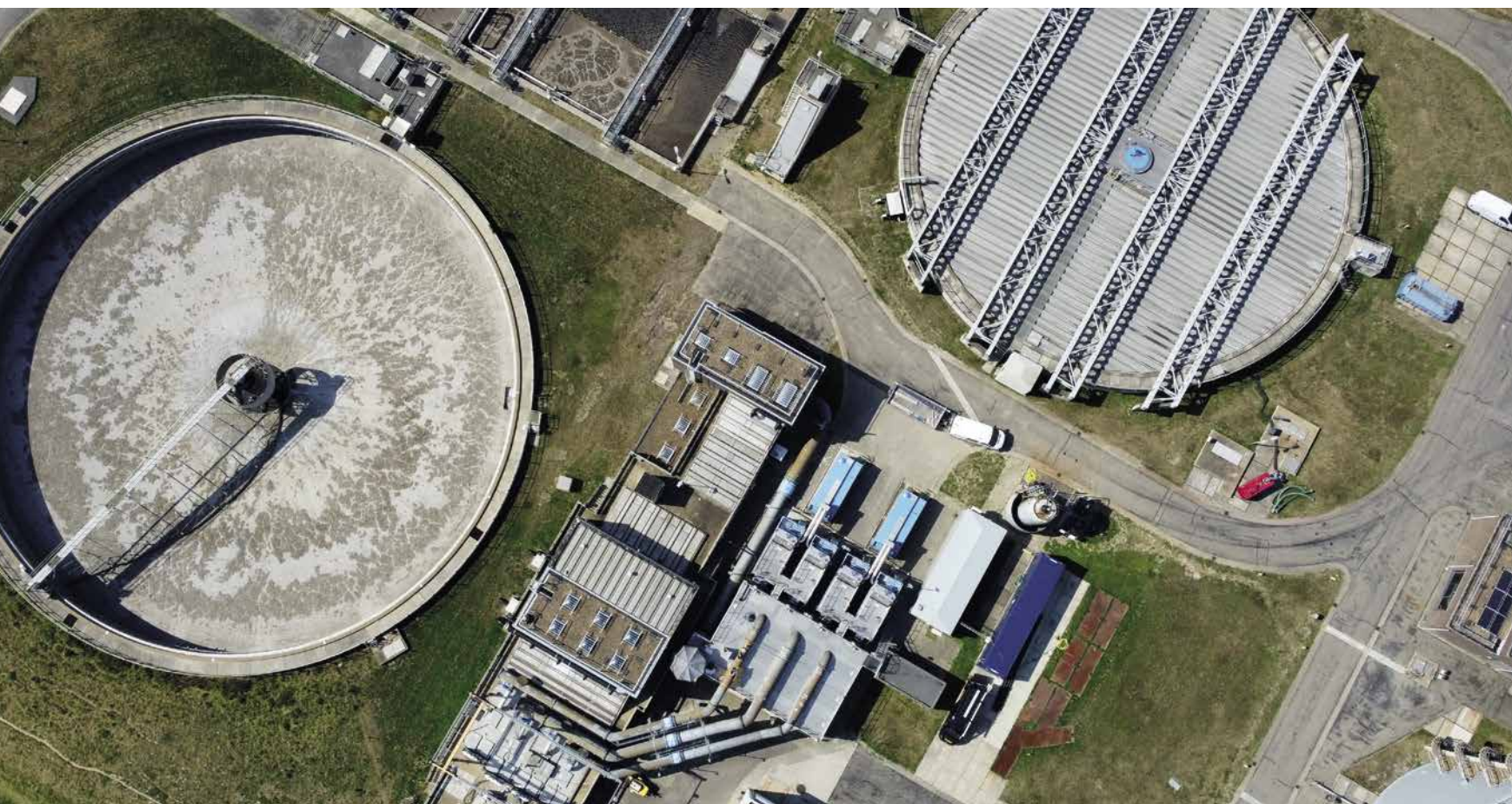
Water Authority Limburg and Colubris pioneer with the CircularN project

From nitrous oxide to fertilizer

In an era where sustainability and circularity take center stage, water authorities are exploring innovative ways to recover valuable resources from wastewater while reducing emissions. In Roermond, the Netherlands, Water Authority Limburg and Colubris are joining forces in the CircularN pilot project. Their mission? To extract nitrogen more efficiently from wastewater and transform it into a valuable fertilizer. Innovation technologist Saskia Hanneman speaks about the project with great enthusiasm.



Saskia Hanneman, Innovation Technologist at Water Authority Limburg.



Daring to take the lead

“Our water authority manages seventeen wastewater treatment plants (WWTPs) across the province of Limburg. Treating wastewater requires a significant amount of energy and leads to unwanted emissions, including nitrous oxide. This greenhouse gas, 265 times more potent than CO₂, is mainly produced when nitrogen is removed from wastewater through biological processes. These processes also demand high energy input and require considerable space.”

“As an Innovation Technologist at Water Authority Limburg, I focus on complex and challenging topics such as resource recovery and nitrous oxide emissions. We are not afraid to take the lead in exploring new methods to remove nitrogen and convert it into something useful. That is why we are also part of the CircularN project.”

‘If you keep doing what you’ve always done, nothing will change.’

Saskia Hanneman | Water Authority Limburg

Closing the loop

“One of the aims of the CircularN project is to test a new technology for the recovery and reuse of ammonium at pilot scale. That’s what we are doing here in Roermond, among other places. The technology being tested at this wastewater treatment plant combines ion exchange with membrane stripping. What makes this approach unique is the way we connect different techniques, ultimately producing ammonium sulfate, a fertilizer that can be used in agriculture. In this way, the circle is closed.”



The wastewater treatment plant in Roermond, the Netherlands

“Another focus of the Roermond project is to test a specific wastewater stream: filtrate water from sludge dewatering. Future regulations will require us to meet extremely low nitrogen limits, it is undesirable to return high ammonium loads from side streams back into the WWTP. If this combination of techniques proves successful, it would be an important step toward reducing the ammonium load on the main treatment process of the plant.”

“Compared to other sludge treatment methods, such as Thermal Pressure Hydrolysis (TPH), this could represent significant progress. Side-stream treatment typically requires extra effort. In the long term, however, this

approach could ultimately create opportunities to apply the technology at lower ammonium concentrations.”

“We are really pioneering here. The steps may be small, but if you keep doing what you’ve been doing for more than 50 years, nothing will change, and that doesn’t fit with the sustainability challenges we face as a water authority. We are curious to see what the project will ultimately deliver, but one thing is certain: we are learning a great deal along the way.”



The pilot unit of Colubris.

About Water Authority Limburg

Every day, more than 700 employees of Water Authority Limburg work to ensure safe dikes, dry feet, clean water, and sufficient water supplies, so that the residents of the province of Limburg can live, work, and enjoy recreation safely.

For more information, visit waterschaplimburg.nl or scan the QR code.



About CircularN

In addition to Water Authority Limburg and Colubris Cleantech, the following organizations are involved in the CircularN pilot project: W&F Technologies BV, i3 Innovative Technologies BV, Delft University of Technology, and Waternet.



‘The technology being tested at the wastewater treatment plant is a combination of ion exchange and membrane stripping.’

Get connected

Let's connect on the following social media and keep up to date with the latest news and developments within Colubris.

Through our social media channels, we regularly share updates, insights, and inspiring stories about our projects, innovations, and events. By following us, you become part of our growing community of like-minded professionals and enthusiasts in water, waste and bioresource technologies.

in



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SOCIAL MEDIA



Cassava as a source of opportunity

Colubris explores how plant-based by-products can be turned into new value

How can we make better use of plant-based by-products? That is the central question driving the international PROCAS project, in which Colubris plays an active role. The project explores how cassava, a widely cultivated tropical root, can be transformed into valuable products such as protein powder, fibers, syrup, and even clean water.

Marijn Zwijsen, Process Engineer at Colubris, is closely involved in the project. "The first tests took place at our facilities in Winterswijk, the Netherlands, using sweet cassava from Costa Rica. We then carried out practical trials in Vietnam with local, bitter cassava. These experiments have already provided valuable insights. For instance, we found that it is technically possible to extract proteins. However, the process does require smart steps in pre-treatment, separation, and cooling."

'The PROCAS project contributes to a circular food chain, where nothing goes to waste.'

Marijn Zwijsen | Colubris



The pilot installation has been built inside a 40-foot container.

Fully equipped pilot container

“Right now, a complete pilot installation is being built inside a 40-foot container. It will include a rasper, centrifuges, an ultrafiltration system, and a spray dryer, all food-grade, of course, and fully cooled. Thanks to this modular design, the system can be deployed flexibly and easily relocated to sites anywhere in the world. By the end of 2025, we will begin testing the installation in Vietnam, together with local partners.”

“The best part is that the knowledge we have gained is not only relevant for cassava. The process can also be applied to other plant-based by-products. In this way, we are taking an important step together toward a truly circular food chain.”



Marijn with his project colleagues in Vietnam.



One of Yenbinh's sites in northern Vietnam. Large quantities of cassava in the foreground.



The power of collaboration

A plant-based by-product can hold hidden value. Colubris helps you explore whether and how that value can be unlocked, from an initial feasibility study to a full-scale project. For more information about these bioresource solutions, please feel free to contact us.

PROCAS consortium

In addition to Colubris, the following organizations are part of the PROCAS consortium:

- **Yenbinh | Vietnam**
Yenbinh, also known as Hieu Hung Agricultural Product and Food Processing, is one of the four largest cassava processors and suppliers of tapioca products in Vietnam. One of Yenbinh's factories in Vietnam is hosting the bioresource tests.
- **Stamex | Thailand**
Stamex is a Dutch group of companies with offices in Thailand and Hong Kong. Since 2005, the company has grown into a leading manufacturer of equipment for the starch processing industry. With its innovative root graters and centrifugal sieves, designed to efficiently separate starch from fiber, Stamex delivers solutions that contribute to high-quality production processes worldwide.

What is Cassava?

Cassava originated in South America and is a starchy, edible root tuber also known as manioc or yuca. The root is nutritious, gluten-free, and can serve as an alternative to potatoes, used in dishes such as fries and porridge, or processed into flour for bread and prawn crackers. It is also widely used in the production of noodles and spring roll wrappers.

Water solutions for the plastics industry

Plastic is a material with many different and very practical properties, amongst others it is light, strong, and malleable. It is very versatile in application, for instance it helps preserve food for longer. There is worldwide attention for plastic waste and its recycling and reuse potential.

Challenges of plastic recycling

Most plastics are theoretically recyclable, for instance by melting them down into a granulate, which can be used to produce new products.

Before granules can be produced, the plastic has to be washed. The plastic stream to be recycled may consist of many different types of plastics. The contamination of the wastewater can therefore be very diverse. The washing water will likely contain suspended, emulsified and dissolved contaminants.

Different techniques

During the plastic washing process, large amounts of washing water are recycled. Various cleaning techniques are used in this recycling loop such as filtration, sedimentation and chemical/physical flotation techniques.

To prevent the build-up of dissolved substances in the recycled washing water, part of the stream has to be refreshed, resulting in a contaminated residual stream which normally needs to be discharged. However, this residual water stream can also be cleaned using biological treatment and membrane systems and

reused in the washing process. Cleaning and reusing will reduce fresh water intake and wastewater disposal costs, leading to significant operational cost savings.

How can we help you?

Colubris has over 40 years of experience with helping industrial customers with optimized wastewater treatment and recovery solutions. Our solutions include:

- Screening
- Sediment separation
- Lamella sedimentation
- Dissolved Air Flotation
- Biological treatment
- Reverse Osmosis
- Dewatering systems



Badenhop Fleischwerke KG is taking a major step toward circular water usage

In Verden, Germany, the company is building its own wastewater treatment facility, which will allow it to save up to 600 m³ of drinking water daily. Colubris is supplying the technology for this advanced wastewater treatment process.



Using the activated sludge process and membrane technology, wastewater is treated on-site and reused as process water for cooling and cleaning purposes. This significantly reduces Badenhop's water footprint, a crucial move in times when drinking water is becoming increasingly scarce and pressure on natural resources is growing.

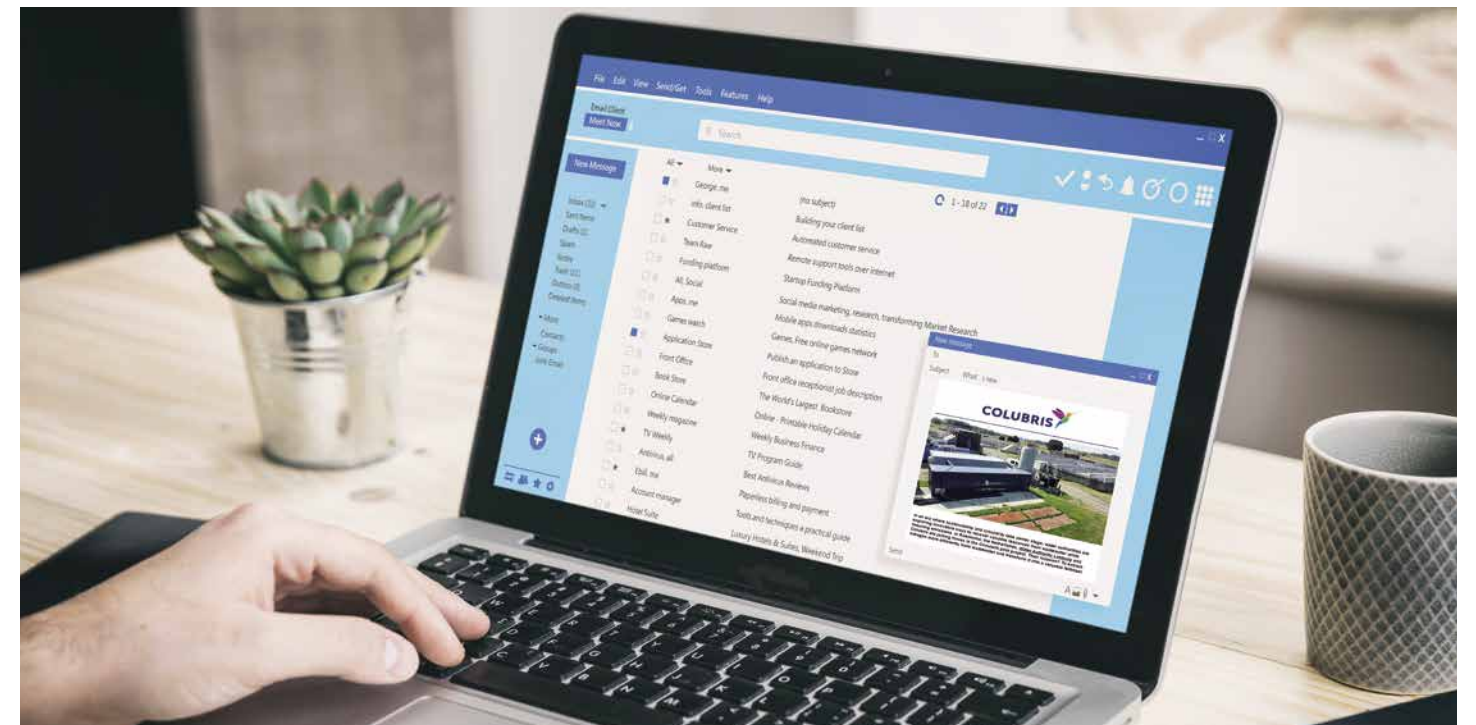
The facility is part of a broader sustainability strategy, which also includes major investments in solar energy

and energy efficiency. Construction of the treatment plant has already begun. By treating and reusing wastewater locally, Badenhop not only reduces its environmental impact but also strengthens the long-term resilience of its production.

Colubris is proud of this partnership and of contributing to sustainable solutions in the food industry through technology.

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Odysseus project: more efficient use of water and salt



Due to changes in climate, process water for industry is becoming increasingly scarce, while valuable salts are lost through waste streams. The Odysseus project is working on innovative, energy-efficient technologies to recover water and salts from industrial brine streams.

Together with other technology companies, research institutes and industry partners, Colubris is working to scale up advanced membrane and extraction technologies. By leveraging our expertise in wastewater treatment, we help develop sustainable solutions that go beyond conventional technologies.

The goal? More reuse of water and salts, less waste and lower energy costs. This project, in which the University of Twente, Lenntech, Nobian, ISPT foundation and Shell also participate, contributes to a future-proof and circular industry.

During the project, two pilot units, including a brine concentrator and Reverse Osmosis pilot unit, will be utilized. Students will conduct research using these units and Colubris will provide recommendations on the project's direction and assist in analyzing the test results.

Where will we meet?

In 2026, Colubris will be present at the following events. Will we see you there?



IFAT

The world's leading trade fair for environmental technologies is the most important meeting place for the industry.

4-7 May 2026

Munich – Germany
ifat.de

Plastics Recycling Show Europe

The Plastics Recycling Show Europe is the leading event for plastic recycling in Europe.

5-6 May 2026

RAI Amsterdam
prseventeurope.com

Follow Colubris on social media for the latest updates on our 2026 event appearances.



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