

**Total Water Treatment and
Process Filtration Solutions**

Food and Beverage Industry



“The Envirogen Group listened to our specific requirements, and designed a system that both meets and exceeded our expectations. Their ongoing management and operation of the system ensures continued delivery of the benefits and savings we were looking for.”

Site General Manager, Bakkavor



Introduction

The pressure is on...

As global industrial capability expands and the world's population increases, water becomes an increasingly precious and valued commodity. The food and beverage industry is a major consumer of process water; it makes up a large proportion of many end products, as well as being essential to each stage of the manufacturing environment.

With water costs increasing, a greater government focus on waste water standards and global environmental pressure to reduce water use, due to water scarcity issues, the food and beverage sector is feeling the burden more than most.

But there is good news...

New developments in water processing and treatment technologies mean that it is easier than ever to reduce, reuse and repurpose water flows. As an important part of their Corporate and Social Responsibility targets, our customers are committed to using water in an innovative and responsible way. Each system that we design takes this large overhead and uses it to improve operations, reduce costs and provide the platform for more efficient and sustainable production.

Envirogen provide the answer

As one of the global leaders in industrial water and wastewater treatment and processing solutions, we solve complex challenges relating to water availability and quality.

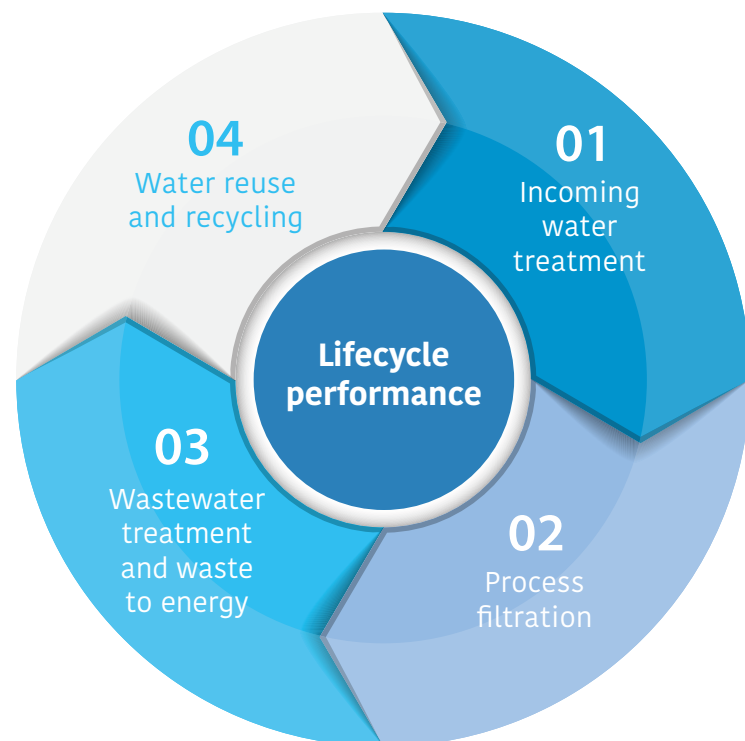
From incoming treatment to recycling technology, and even energy generation, wherever water is moved through a site, altered or treated we are there to provide the most efficient solutions through our three main capabilities:

- Expertise – from the sales team and project managers right through to our engineers and installers, we draw on our extensive knowledge and experience in water treatment design and engineering
- Technology – we develop turnkey solutions to meet our customers' requirements, based around tried and tested, best-in-class, reliable products and services
- Facilities – our large, state-of-the-art, manufacturing and distribution centre is ideally suited to the creation of industrial scale treatment systems, with easy transportation links across the globe

Award winning systems for every stage of the water cycle

For every drop of water entering your site, to every drop that leaves, we've got it covered...

Envirogen design, manufacture and build award winning water systems to reduce water consumption, improve product consistency and purity, extend the life of machinery and reduce environmental impact. Wherever water is used or changed, Envirogen can find a way to do it better.



Stage 1: Incoming water treatment

Whether your incoming water is from rivers, boreholes or potable towns water, the water quality and composition can change. Our systems are designed to remove pathogens, correct pH, disinfect, purify and soften incoming water to ensure consistency and to meet exact customer requirements.

- Membrane technologies, including ultrafiltration and reverse osmosis.
Envirogen brands include:
 - EcoSave: eco-friendly, water saving, water softeners
 - EcoPure: intelligent short cycle, high purity deioniser systems
- Multimedia filtration solutions including carbon, ion exchange and demineralisation
- Cartridge filtration
- Disinfection and sterilisation, including on demand chlorine production

Stage 2: Process filtration

Consistency, sterility, long shelf-life and clarity: all essential requirements for safe processing. Envirogen solutions deliver reliable results, with the added benefit of water recovery for re-use.

- Membrane technologies, including PureFlow Crossflow Microfiltration
- De-aeration
- Cartridge filtration
- Disinfection and sterilisation, including PureChlor and UV options

Stage 3: Wastewater treatment and waste to energy

Treatment solutions

With environmental pressures to both reduce the amount of wastewater produced and increase the standard of the effluent, reliable treatment solutions are an essential investment. But systems need to be both effective and cost efficient to achieve the maximum benefit. Treating even the most contaminated water and effluent, our systems effectively clean to required standards for both reuse and discharge.

Conventional wastewater treatment systems include:

- Flow balancing and pH correction
- Dissolved Air Flotation
- Physio-chemical treatment, including coagulation and sedimentation, and direct filtration

Advanced treatment systems include:

- Membrane bioreactors
- Anaerobic and aerobic treatment
- Fluidised bed reactors
- Suspended carrier reactors

We also specialise in fully containerised mobile wastewater treatment solutions for specific applications. Available for hire or purchase, these systems sit outside existing production settings, offering simple and hassle free connection and meeting environmental discharge standards.

Containerised water treatment system for Finlays tea estates in Kenya.



Waste to energy

Identifying and making use of alternative sources to fossil fuel is a trend that continues to increase globally. It makes sense to reduce your company's reliance on fossil fuels and instead generate energy onsite, using the freely available waste products from production as a renewable energy source. We offer a range of renewable energy solutions for our customers that generate 'free' energy, using only the waste elements from your operational environment, including:

- Anaerobic Treatment – the conversion of soluble organic compounds to biogas
- Anaerobic Digestion – converting organic solids to biogas

Stage 4: Water reuse and recycling

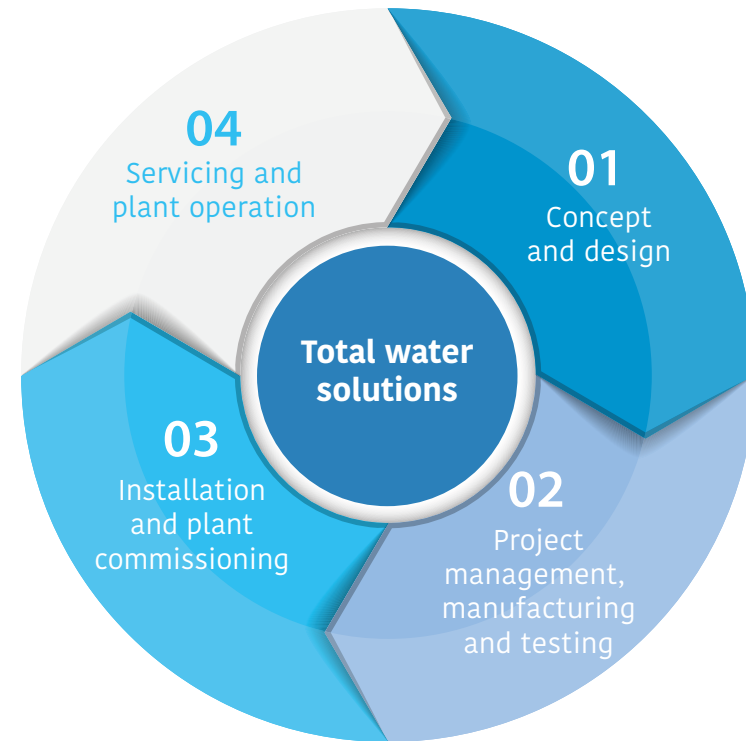
Our designers always consider holistic water use on each site, no matter which area of the water cycle our customers are focused on. Reuse and recycling of water forms a part of every brief and we will always give advice on feasible opportunities for effective reuse. We offer a variety of recycling systems and rinse water recovery products to ensure that water is reclaimed and recycled wherever possible.

Total water solutions

Design, Build, Engineer and Operate – the complete end to end solution

We work at the forefront of system design, manufacturing and installation, working with our customers at every stage of the water treatment lifecycle.

First and foremost, we are process engineers. From our sales team and project managers right through to our installers we make sure that every team member has a strong grounding in engineering principles. We focus on the detail of each project and fit it to the wider manufacturing environment to create the optimum system and run it efficiently.



From initial concept and designs, to system construction and operator training, right through to after sales servicing and supply of consumables - we've got it covered. With dedicated project managers assigned to every task, you'll know that we'll deliver on time and to budget.

Our systems are designed and installed with whole life value in mind. We work with you to ensure your installation delivers efficient operation and favourable return on investment. Future ROI is calculated to realise a long term investment opportunity.



“We gave Envirogen a brief of what was required, and they responded with a highly efficient overhaul and upgrade solution, meeting strict time and budgetary requirements.”

John Williams, Day Manager of Cider Production, Heineken

Concept and Design

Project concept scoping and design

The crucial first step in any project: understanding the customer's full brief and designing the resulting system that meets that need - exactly.

With an in-depth knowledge of the food and beverage sector, our sales teams are experts in extracting the precise requirements from our customers. We don't just provide an off the shelf product to bolt onto your existing system (often not meeting your real need), we'll always look for the best way to integrate systems and provide a cost effective turnkey solution.

Our team facilitates a collaborative approach. Together we'll take your ideas and requirements and combine them with our experience to deliver the optimum result.

Bespoke solutions - providing better value

The words bespoke, tailored and turnkey often translate to 'expensive', but not in the case of water treatment and processing. With so many variables, such as incoming water quality, usage on site and nuances in water re-use and disposal, no two sites are the same. When off the shelf products are used to fulfil a more complex requirement, oversizing and the resultant redundancy often make the system costlier.

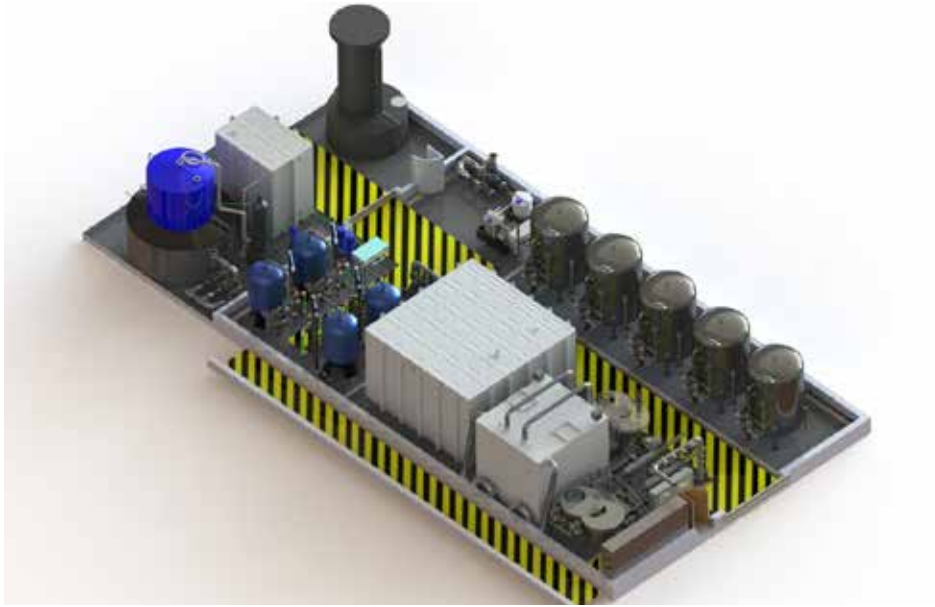
Our staff are trained to visualise the most efficient and cost effective paths for optimum system design. Experience, and a healthy dose of creative thinking, often result in designs that exceed expectations.

3D modelling – bringing system design to life

It can be hard to analyse a system plan and visualise it constructed and functioning. Without a full understanding of how the plant will integrate with the existing machinery and its spatial arrangement, how can you sign off the design stage?

That's why we use our specialist 3D modelling software on system designs.

Using laser scanning tools, we are able to scan the system location, and any other machinery, creating a virtual environment to design your complete water system. The system is fully constructed in a 3D setting with every pipe, connection and pump fully accounted for.



3D model of the incoming water treatment plant for Britvic.



Britvic plant under construction at our state-of-the-art manufacturing facility.

All stakeholders can see the overall picture and drill down into every detail. It's the perfect approach to gaining full support and sign off from every team member. We'll complete the whole design process in a timely and efficient manner, supporting your timescales and working flexibly with your team.

- Laser scanning of the existing site delivers pinpoint accuracy for the optimum design environment
- The most favourable layout is created, with consideration to workflow and movement throughout the site
- Challenges can be highlighted and solutions put in place – all in the virtual environment, reducing risks, and avoiding unforeseen circumstances at installation
- Every stakeholder in your business can see the plans and sign off on the final design, before installation
- Project lead times are dramatically reduced. Less time is spent on design and more time spent on completing the project, giving greater control and accuracy in system implementation and cost management.

“We chose Envirogen because of their stand-out expertise and experience in our sector. The 3D modelling was hugely beneficial because we were able to accurately visualise the plant and all its components, and address issues before build began. This was particularly important as the solution needed to integrate with existing facilities...”

John Marshall, Project Manager, Britvic

Building and installation

State-of-the-art manufacturing, project management and seamless installation

When you're working in a fast moving manufacturing environment, you don't have time for stoppage. New workflows and machinery need to be integrated seamlessly without interrupting production output. Our systems are manufactured to the highest quality and are tested and approved before they get to site, allowing for easy and accurate installation.

Envirogen's Global Manufacturing and Distribution Centre

Our Global Manufacturing and Distribution Centre is located with easy transport links across the world, giving straightforward access to all major food and beverage manufacturers and distributors.

This state-of-the-art facility is the hub for our production capability, demonstrating best in class, ISO 9001 approved manufacturing. With space for even large water treatment systems, we construct, test and quality assure our plants before they enter the customer's site.

Our customers are encouraged to visit to monitor, test and train at our site. Offering complete project transparency, you can see your system as it's built. And it doesn't enter your factory until the system is successfully completed and you're happy with this first stage of testing. This method ensures that the installation goes to plan with minimal disruption to your production environment.

The centre also provides:

- Wet test and welding facilities
- Capability for full factory acceptance testing
- Training areas for operator teams
- Customer viewing platforms for easy monitoring of complete end-to-end construction
- A large distribution area, holding a large range of consumable stock items for next day delivery
- Plant storage

Streamlined and efficient installation

With the vast majority of testing completed before the system enters the customer's site, installation is efficient and has as little impact as possible on current operations.

Our engineers are well practiced in minimising the impact of the new installation on the live production environment, and any downtime is agreed up front with carefully controlled and agreed timescales. We offer various installation options to take advantage of any planned downtime.

After installation is completed, a full testing schedule will be implemented for the entire system and the commissioning process.

Comprehensive training

We can take operators and managers through a complete training programme off site, whilst the system is being built and tested, but the installation team will also deliver training and recap on important points before they leave your site. We also offer the option to have an operator team to stay on site, as long as you need them, to complete on the job training and give added peace of mind.

Whatever the scale of the project, or the process that it relates to, there's an Envirogen solution. We also offer:

- Plant overhaul and modernisation
- Process optimisation
- Replacement of obsolete equipment
- System upgrades to meet regulation requirements and changing standards
- Individual instrument and control system upgrade
- Resin replacement and re-activation

“The thorough analysis undertaken by Envirogen at the early stages, meant a robust workable solution was put in place. From the word go our costs were reduced, environmental impact lessened, and efficiency and capability within the plant increased.”

Chris Newall, Managing Director, Bevisol.



Service

Servicing plans for effective water treatment and operation

The demands of the FMCG environment mean that our customers' plants are often working at near maximum production capability, 24-hours a day. Sales pressures and customer demands mean that breakdowns have far reaching and costly repercussions.

Our servicing plans are designed to keep your water plant working at its optimum, reducing costly breakdowns and maintenance tasks. We work across a range of manufacturer makes and models (whether we have installed the system or not), and we have a selection of plans to meet every requirement. Whether you need a full service and maintenance plan for complete peace of mind, or just a regular check and fine tuning, we have the plan for you.

Our team of engineers are:

- Located nationwide - for local support
- Highly trained with up-to-date knowledge of all of the latest technology
- Equipped with fully stocked vans - for instant consumable replacement
- Provided with smart technology - for fast spare parts order and a real time availability view, as well as up to the minute data on the history of each site

“The predicted cost savings are anticipated to be significant, and the plant will pay for itself in less than 2 years. The saving is from the regeneration cycle using 30% less salt and less water going to drain. Envirogen pulled out all the stops to order and install it within our 2-week annual shutdown.”

Colin Walton, Senior Engineer, Marston's

PureCare Service Packages

PureCare Standard

Our entry level package, providing planned service and maintenance on all water treatment and process machinery. With repair call-outs guaranteed within 48 hours.

PureCare Response

The full service and maintenance package of PureCare Standard, but with call-outs guaranteed within 24 hours.

PureCare Response Plus

A more comprehensive service plan, PureCare Response Plus includes:

- Planned service and maintenance for all water treatment and process machinery
- Optional response times for repairs at 8 or 24 hours
- Annual consumables package for standard parts
- Discounts on labour charges for repairs

PureCare Ultra

All fully comprehensive care package. PureCare Ultra delivers complete peace of mind, including:

- Planned service and maintenance for all water systems
- Optional response times at 4, 8 or 24 hours
- Supply of all consumables
- Repair of all breakdowns, including all parts and labour

Standard Features	PureCare Standard	PureCare Priority Response	PureCare Priority Response Plus	PureCare Ultra
Planned Service and Maintenance visits	✓	✓	✓	✓
Onsite Breakdown Response	48hrs (not guaranteed)	24hrs	8hrs or 24hrs	4hrs, 8hrs or 24hrs
Callouts - Not Chargeable	-	-	-	✓
Callouts - Reduced Fee	-	-	✓	-
Callouts - Chargeable	✓	✓	-	-
Annual Consumables Pack Included (where applicable)	-	-	✓	✓
Spare parts and additional Consumables Included	-	-	-	✓
Price Reduction on Consumables	-	-	✓	✓
Emergency Telephone Support, 24/7	✓	✓	✓	✓

Additional options available include:

Annual consumables pack, critical spares pack, media replacement, water sampling, instrument calibration, disinfection and sanitisation, membrane cleaning, and validation processes.

Long-life filtration and separation cartridges and consumables

We offer a full range of Envirogen cartridges for use with our filtration and separation systems. Efficient and long lasting, our cartridges are manufactured using the latest technology, ensuring optimum value for money and delivering low lifetime running costs. Our distribution centre holds a full stock for next day delivery in the UK.

We stock a full range of cartridges and filter sheets, chemicals, seals, membrane replacements, UV lamps and hydraulic filters.



Bespoke consultancy and engineering

We have it all when it comes to water treatment
and processing product filtration systems,
whatever your requirements. Whether it's
consultancy, design or specialist engineering
- we can help.

**Contact us for more details
or to book an initial meeting.**

BRITVIC
soft drinks

SARSON'S

Carlsberg

E&J Gallo Winery

HEINEKEN

MOLSON COORS

InBev

DIAGEO

Finlays

BAKKAVÖR

MARSTON'S





"Through expertise and knowledge, Envirogen used modifications to an existing system to bring about major benefits and project managed the whole process from design and installation to commissioning. The attention to detail and onsite work is outstanding."

Britvic



"Throughout the process, we were impressed by Envirogen's engineering capability. The team offered a solution that provided much greater returns than the other tenders we received."

Regional brewer, UK



About Envirogen Group

Envirogen Group is a leading international provider of industrial water treatment and process filtration solutions. We solve complex challenges relating to water availability and quality and help our customers to increase productivity, reduce costs and meet environmental and sustainability targets.

We do this by offering:

- Best-in-class water treatment and process filtration technology
- Expertise in design, project management and engineering
- World-class manufacturing capability

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We have a network of regional sales teams across Europe, including sales teams in Germany and Italy. For further details, visit our website or contact our main office locations above.

www.envirogengroup.com

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