



A

PROCESS EXPERTISE FOR SUSTAINABLE MUNICIPAL WASTEWATER SOLUTIONS

ASK YOUR SEPARATION SPECIALIST

ANDRITZ

ENGINEERED SUCCESS



YOUR
IDEAS

YOUR
NEEDS

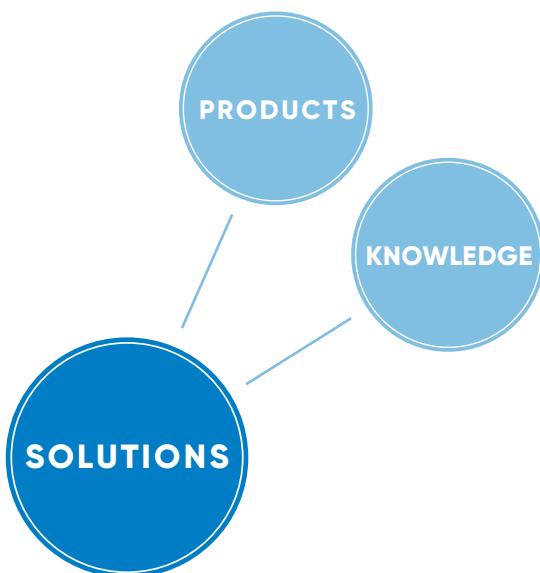
YOUR
BUSINESS

YOUR
SEPARATION
SPECIALIST

It's time to turn your waste into new business opportunities

Rising energy costs. Expensive labor. Growing populations. Is your wastewater plant prepared for all these challenges? Today, more than 50% of the world's population of seven billion live in cities – and the trend towards urbanization continues to rise. Imagine what this means for municipal wastewater and sludge treatment. Now add the increasingly stringent regulations and you will understand that what worked today may not work tomorrow.

In cities everywhere, there is an increasing need for efficient processing of wastewater and sludge. And just as regulatory standards are tightening up, municipal budgets are also coming under more pressure. To tackle these complex and conflicting challenges, you need a partner with the full perspective of your wastewater treatment needs, and an array of reliable solutions to solve them.



FULL-LINE SOLUTIONS FOR EVERY GLOBAL MARKET

ANDRITZ has been providing smart separation solutions for 150 years. Today, these cover the entire wastewater and sludge treatment process, from screening and thickening to dewatering and drying. Small or large cities, greenfield or brownfield, we've supplied innovative solutions to municipalities on every continent and in every regulatory environment.

TACKLING THE WORLD'S BIGGEST CHALLENGES

In Singapore, this means replacing six outdated sewage works with three massive new wastewater treatment plants, including constructing the largest drying plant in the world to date. With five lines, each capable of evaporating 11 tons of water per hour, the first new plant is now 100% sustainable, with dryers running entirely on biogas produced by sludge digestion.

Whatever the scale of your operations, our ambition is the same: to provide efficient, reliable, and safe wastewater treatment solutions that are less costly to install, operate, and maintain while meeting the strictest local requirements. And as part of a global organization with professionals in 40 countries, we have the experience, financial strength, and technical resources to deliver exactly that.

Meeting tomorrow's wastewater challenges with the right separation solutions

With 150 years of experience, ANDRITZ is well positioned to provide solutions for any type of separation challenge. In fact, we deliver more wastewater treatment technologies to this sector than any other supplier, ensuring that you always get the right solution.

IN-DEPTH PROCESS KNOW-HOW

Our unique process know-how is the result of a century of experience serving several industries as the world's leading separation specialist. Rather than pushing a particular technology, we start by applying extensive in-house knowledge to analyzing your process requirements. Through in-depth consulting and testing, we identify which of our three thickening, four dewatering, and four drying systems will deliver the best results. Then we provide the optimal screening and ancillaries to maximize it all. Collectively, this depth of experience amounts to more than 10,000 wastewater references, including more than 350 new municipal installations every year.

GLOBAL LEADER IN SLUDGE TREATMENT

For many, we're known as the go-to experts in sludge treatment and thermal drying. From screens with a peak flow of 400 MLD for Changi, Singapore, to extremely efficient centrifuges with capture rates of 95% in Ashford, UK, we've also provided more than 30 capital cities across the globe with innovative, reliable solutions. As the only supplier with four thermal drying technologies and automation solutions in-house, it's no surprise that we have supplied more than 170 successful thermal drying systems worldwide.

IMPROVING SAFETY IN ALL STAGES

Many of our customers today are keen to meet increasingly stringent waterworks safety requirements. This is where our total approach to safety in terms of design, protection, and more come into play. For example, all of our new drying systems are ATEX/NFPA compliant to protect staff who are working in potentially hazardous or explosive atmospheres. We also provide safety upgrades for existing drying plants to meet the new regulations.

YOUR INVESTMENT IS OUR COMMITMENT

Given the scale of investment and the lifecycles encountered in wastewater treatment, we remain committed to delivering the lowest total cost of ownership for your plant. This includes ongoing R&D partnerships, upgrades, and process optimization, as well as full-service contracts for the entire lifespan of your equipment. Our aim is to keep your plant on the cutting edge by deploying the full strengths of our global organization.

>30

capital cities served

29,000

employees in
ANDRITZ GROUP

280

ANDRITZ GROUP
production sites,
service, and sales
companies





Your separation specialist

As the world's leading separation specialist, we are committed to delivering the right knowledge, services, and solutions for any separation challenge.

EXTENSIVE PROCESS KNOW-HOW AND EXPERIENCE

In-house expertise to analyze process requirements and offer the best solution.

SAFETY

ATEX/NFPA compliance and safety upgrades.

LONG-TERM SERVICE CONTRACTS

Full-service contracts for operational safety, maintenance, and provision of parts.

R&D PARTNERSHIP

Joint product development for tailor-made customer solutions.

AUTOMATION

Complete control systems for individual machines or turnkey systems, with in-house expertise.

FEASIBILITY STUDIES

Process simulations and full life costs/ROI calculations.

SUSTAINABILITY

Full raw material utilization, waste elimination processes, and environmental controls for minimal impact.

BROADEST PRODUCT PORTFOLIO

Full range of solid/liquid separation systems and ancillary equipment.

TEST FACILITIES

From lab-scale to pilot plants and industrial-scale mobile units.

LIFETIME SUPPORT AND COMPLETE SERVICE OFFERING

Full process support from concept to operation; full global after-sales support.

UPGRADES AND PROCESS OPTIMIZATION

Improvements in performance and safety of existing equipment to extend productive life and maintain asset value.

TECHNICAL SUPPORT

On-site or through remote diagnostics for fine-tuning of equipment and system performance.

CONSULTING

Expert advice on customer-oriented process solutions.

>350

new plants every year

10,000

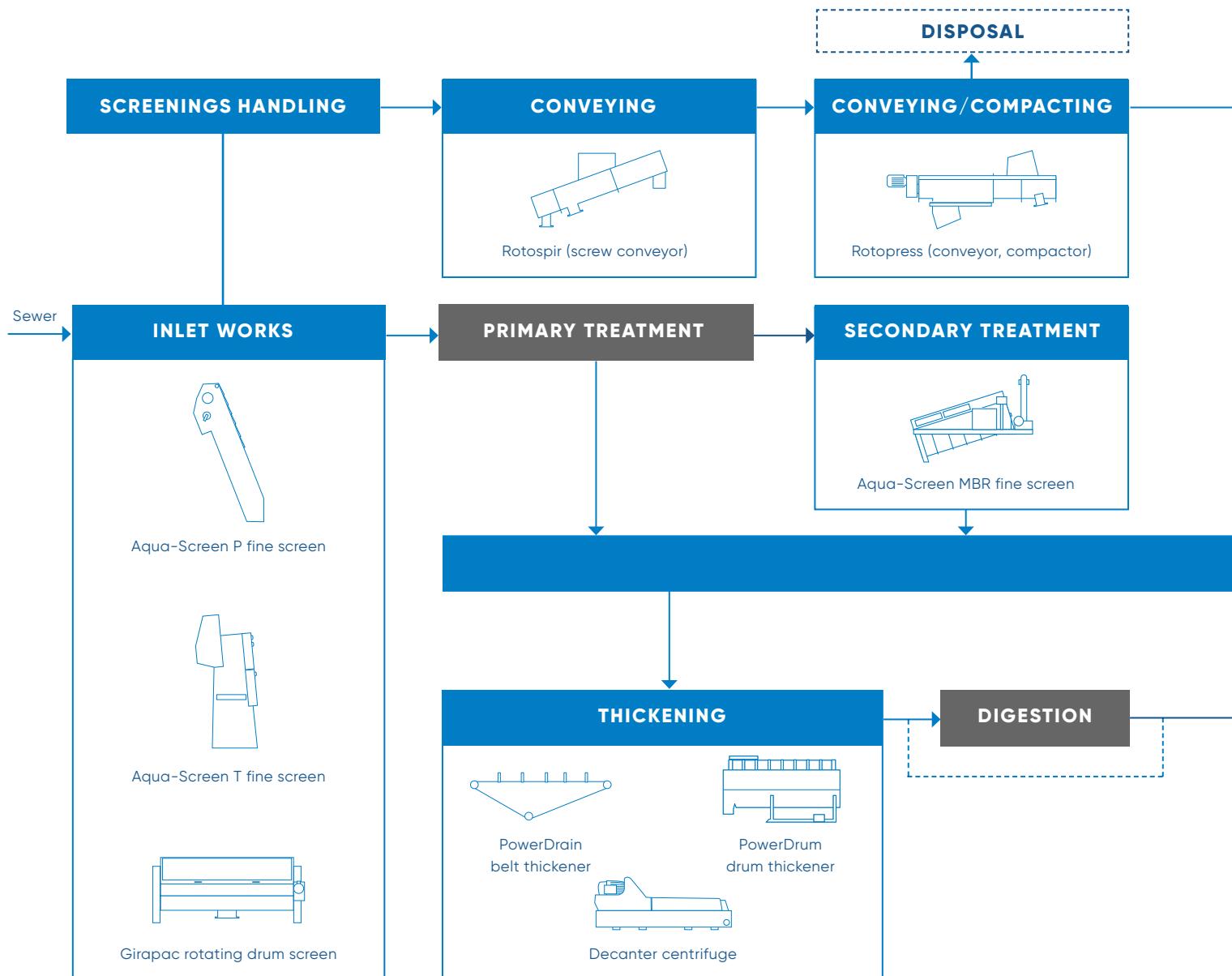
municipal wastewater references

10

lab testing facilities worldwide

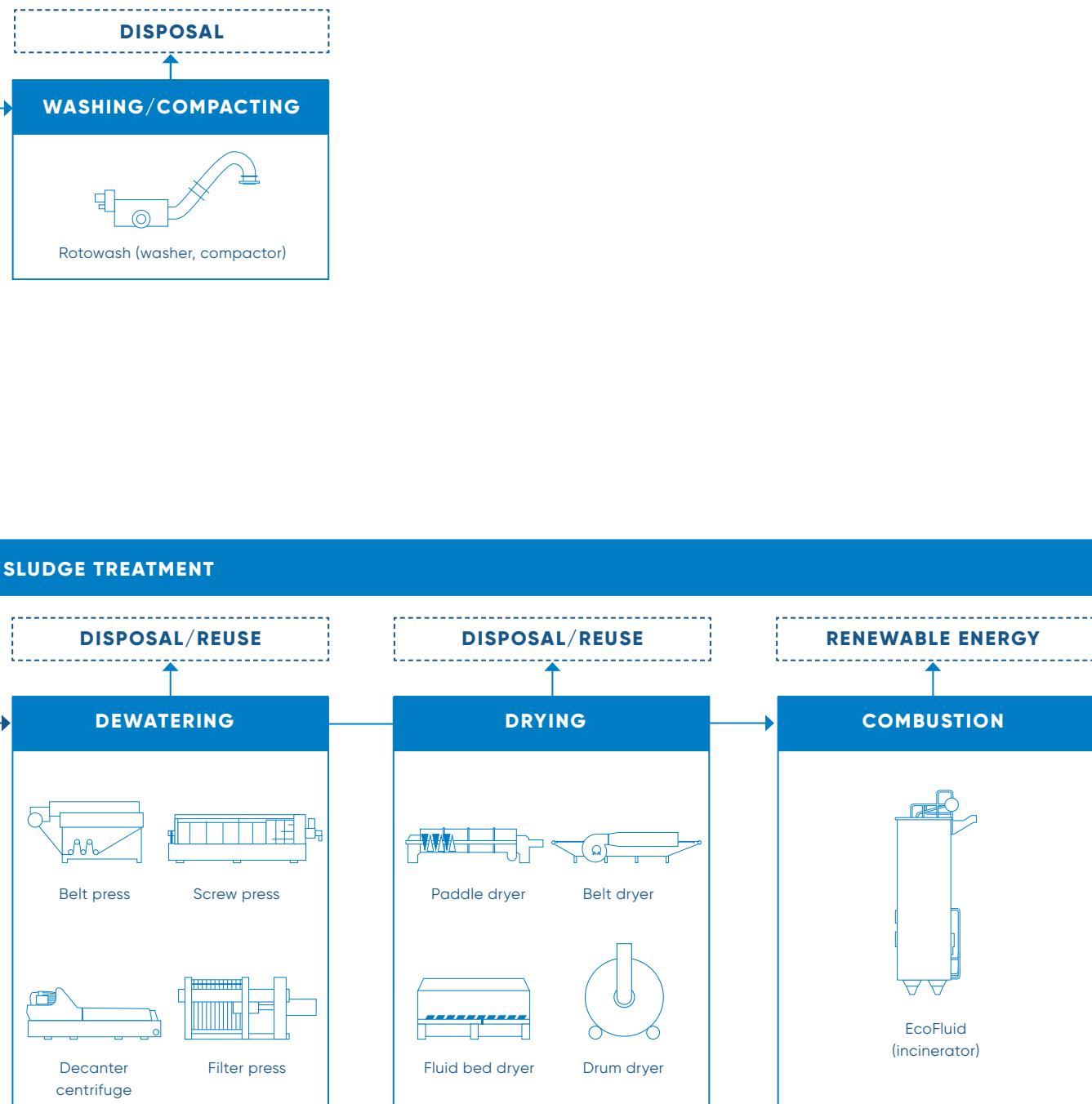
Where we fit into your plant

Screening, thickening, dewatering, drying, or combustion. Wherever there's a separation challenge, we provide a complete system solution to solve it, backed up with process knowledge and in-house automation expertise to make the most of your investment.



How can we optimize your process?

Maybe you've got an aging facility that needs an upgrade. Or you need to reduce energy consumption as power costs rise. This is where a more innovative approach may be needed. Like our large decanter centrifuges, which utilize a direct drive gearbox, high hydraulic pressure, and our unique TurboJet weir plate to reduce energy consumption by as much as 40%. All so you can maintain throughput and efficiency at the lowest possible cost.

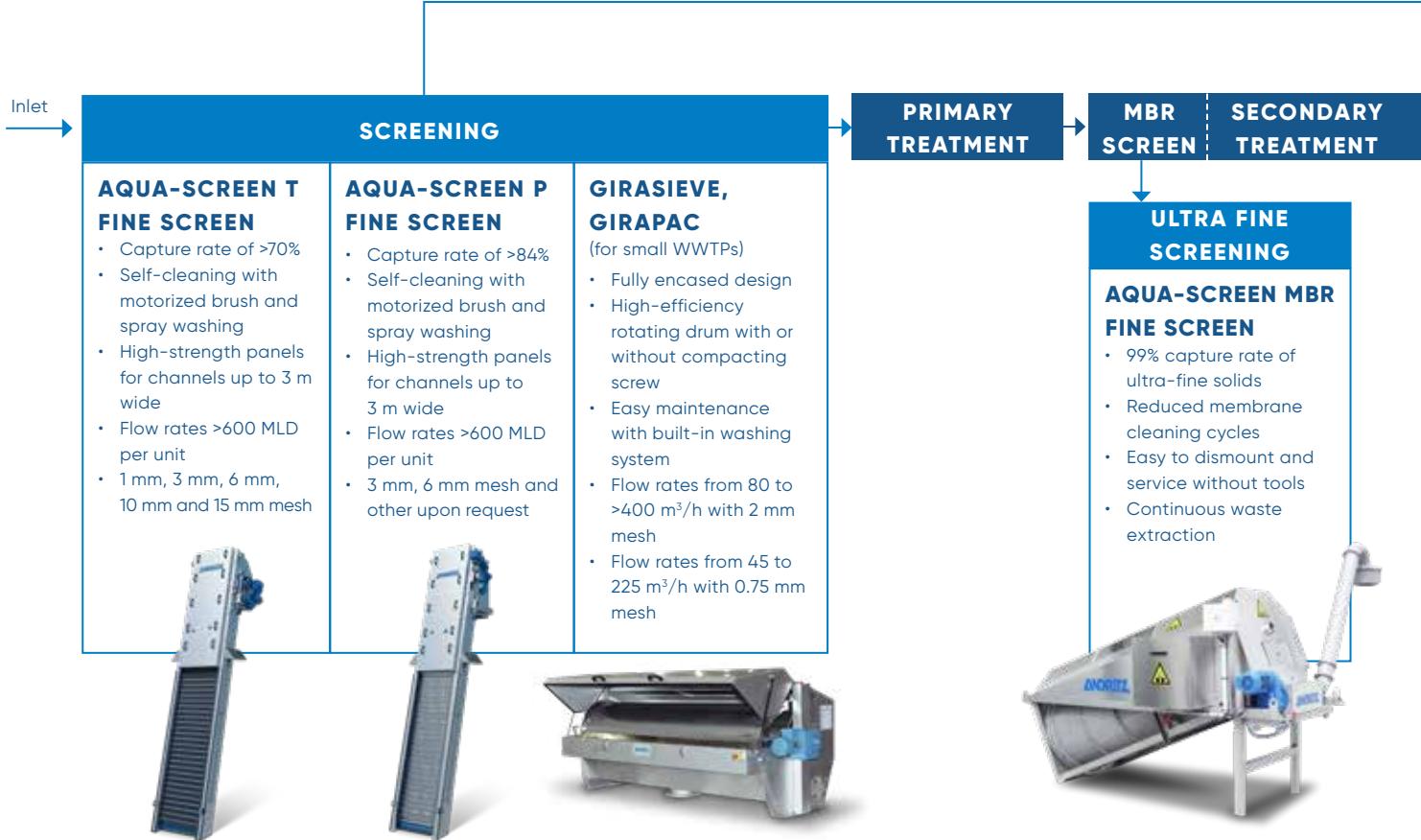


Cost-effective screening: High capture and removal rates with lowest head loss

In our view, there is no such thing as just a "screen". It's always part of a larger solution involving other equipment that can be critical to the downstream efficiency of your plant. Naturally, the removal of all solids as efficiently and effectively as possible is the goal. But you also want to avoid excessive head loss, maintain velocity flow, and avoid a lot of expensive pumping.

Whether you require screens for a village-sized installation with just 1,000 inhabitants, or for a city of more than one million, we have screens for wastewater treatment plants of all sizes. With capture rates of 99%, ANDRITZ screens have a long-standing reputation as some of the most efficient in the industry. It might be a robust, two-dimensional fine screen to minimize

head loss, or a high-strength, self-cleaning panel to ensure easy, hands-free maintenance. Whatever the specific challenge, you have nearly a dozen screening technologies to choose from. All so you can meet the strictest regulatory standards and maintenance requirements, while letting gravity do the dirty work.



99%

capture rate with
Aqua-Screen MBR
fine screens

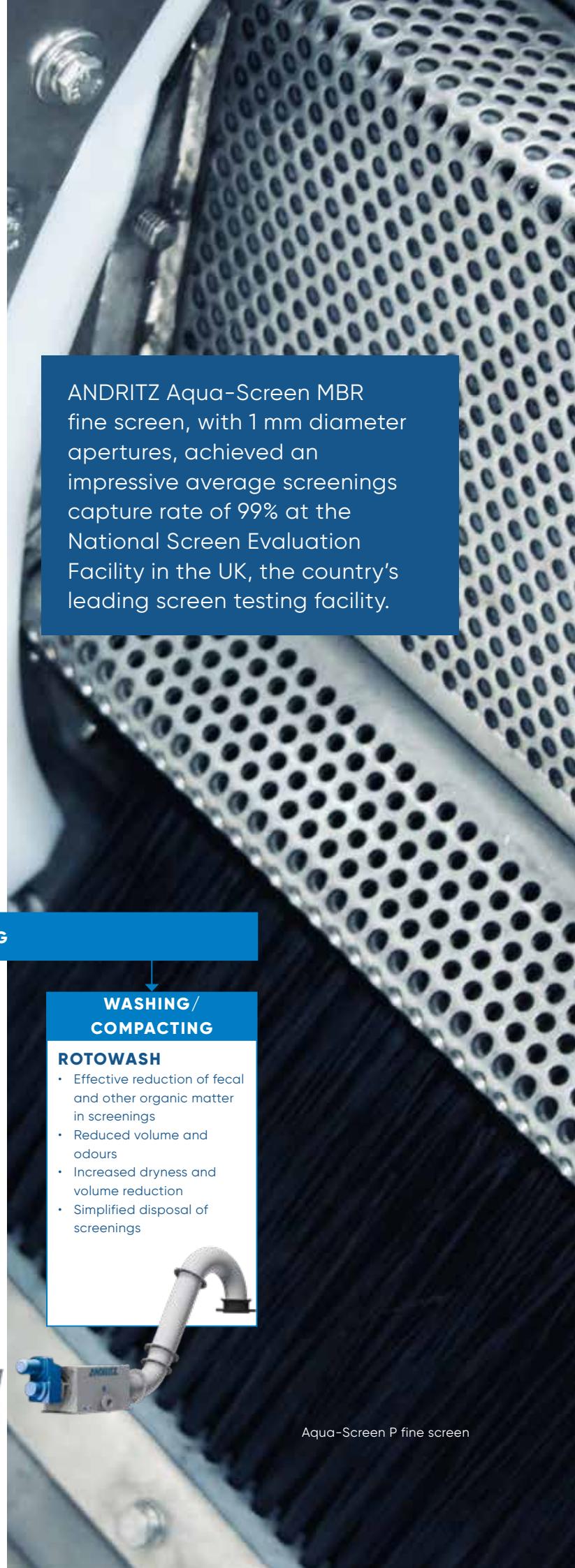
>5,000

screens sold
since 1980

2D

fine
screens

ANDRITZ Aqua-Screen MBR fine screen, with 1 mm diameter apertures, achieved an impressive average screenings capture rate of 99% at the National Screen Evaluation Facility in the UK, the country's leading screen testing facility.



Aqua-Screen P fine screen

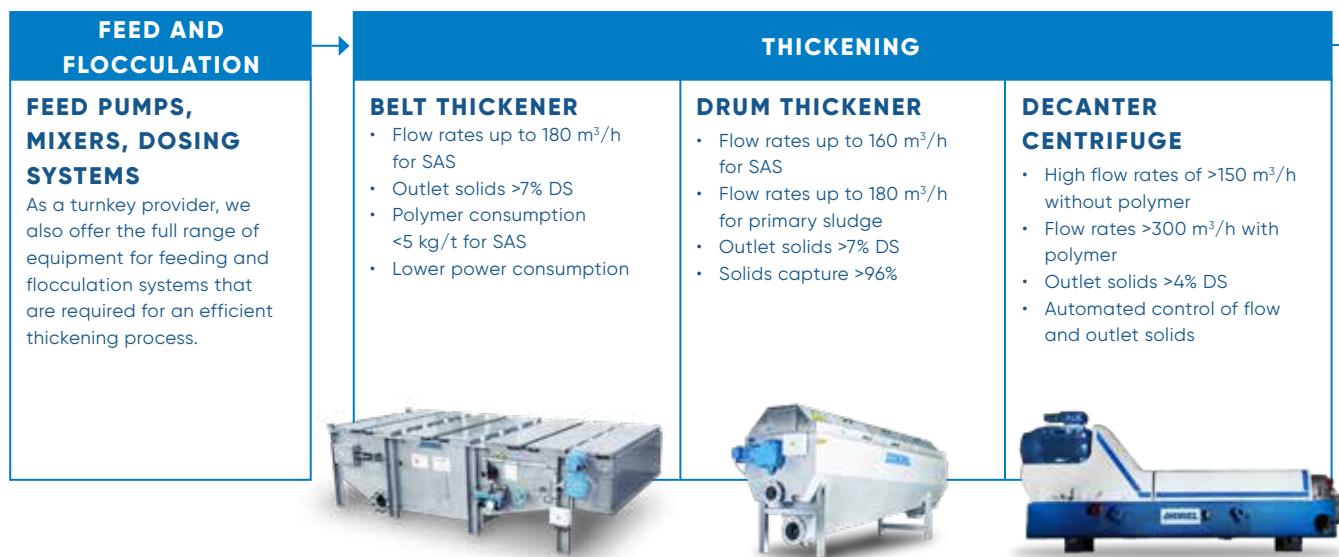
High-efficiency thickening: More solids, less water – in no time!

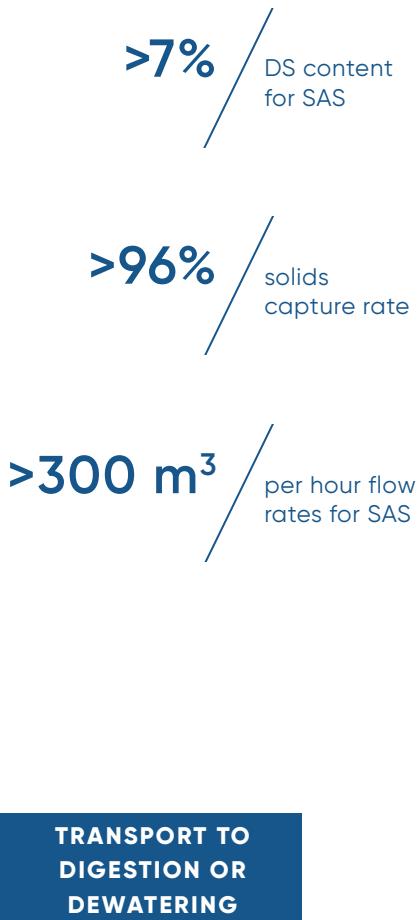
Ask yourself a simple question: How efficient is your removal of free water in the sludge thickening phase? Do you have optimum gravity thickening of primary sludge? Could you reduce the need for expensive flocculants in secondary sludge to zero? Or close to zero?

These are the types of challenges our turnkey solutions for sludge thickening are designed to solve. Our solutions include everything from the basic machine supply and process design to test work and consulting.

Our overall aim is to supply the fastest, most efficient thickening technology with the most effective water recovery. And our in-depth experience ensures that we can provide you with the right technologies, systems, and process support to make sure this happens.

In Florence, Italy, for instance, innovations like our D-scroll technology have helped to eliminate polymer costs with far lower G-force. In Peru, it has boosted treated wastewater output to more than one cubic meter per second. Compared with conventional technologies, decisive cost-saving factors include the lowest power and polymer consumption, producing thickened sludge with high dry solids content of more than 7%.





„We needed to significantly reduce operating costs and expand capacity. ANDRITZ's breadth of technology enabled us to do this while cutting polymer costs alone by more than 40,000 EUR per year.“

SIMONE CAFFAZ

Plants Technical Manager in Publiacqua,
Firenze Publiacqua S.P.A.



Dewatering on another level: A smarter path to high dry solids

The massive reduction in water in the dewatering phase – from typically 5% to 25% solids in just minutes – is a daunting task. Energy costs can soar. Reliability is essential. And flocculant costs can spin out of control. Whether you're targeting a high cake solids content, trouble-free operations, lower operational cost – or all three – we offer a range of dewatering technologies that can be tailored to your specific needs.

For the largest plants, reliable, high-volume dewatering is an absolute necessity. More than just trustworthy equipment, they demand a partner that can deliver world-class performance for the entire life of the contract – sometimes 30 years or more. In the case of Scottish Power, this meant optimizing and installing twelve state-of-the-art centrifuges, each with a capacity of 3,000 kg/h of dry solids. One decade and 20 million tons of processed sludge later, the plant is still going strong, and new energy-efficient upgrades are just now being reviewed.

Other customers, of course, have highly specific needs that require a more specialized solution. Our mobile

dewatering units, for example, combine reliable performance with flexible placement thanks to a series of decanter units enclosed in an easily transportable container. In applications that require increased safety, such as areas with high risk of explosions, we can also customize your decanters units to meet EX/ATEX certification.

These are just a few examples, but they help to illustrate the lengths we go to in guaranteeing decades of reliable dewatering operations. Whether it's providing a flexible range of systems, reducing energy and flocculant costs to a bare minimum, or developing new innovative solutions to meet your needs.

FEED AND FLOCCULATION

FEED PUMPS, MIXERS, DOSING SYSTEMS

As a turnkey provider, we also offer the full range of equipment for feeding and flocculation systems that are required for an efficient dewatering process.

DEWATERING

BELT PRESS

- Lowest investment cost
- Flow rate >55 m³/h for digested sludge
- Greater than 25% cake solids for digested sludge
- Polymer consumption <6 kg/t



SCREW PRESS

- Low energy consumption
- Flow rates >50 m³/h
- Solids load >1,000 kg DS/h
- Totally enclosed design for odor control
- Outlet solids >25% DS for digested sludge



DECANTER CENTRIFUGE

- Fully automated and unattended operation
- Capture rate >95%
- Flow rate >120 m³/h for digested sludge
- Outlet solids >27% DS for digested sludge



FILTER PRESS

- >99% capture rate
- Outlet solids >35% DS for primary sludge
- Polymer consumption <5 kg/t digested sludge
- Optional fully automatic cloth washing
- Patented scraping device for fully automatic operation



up to
30%
power savings
with TurboJet

>99%
capture rate

>35%
DS for
primary
sludge

Cut your electricity bill by up to 30%?

Already successfully in operation, TurboJet is a next-generation weir plate that reduces a centrifuge's absorbed power by up to 30%. The exact amount of power you can save will depend on your flow rate, pond depth, and bowl speed. TurboJet can be fitted to ANDRITZ decanters (ANDRITZ, Bird, KHD, Guinard, etc.) and can also be retrofitted to nearly all other brands of decanters.



„Our twelve D7LL decanter centrifuges have been in non-stop operation for a full 70,000 hours – with reliable service over a number of years – and all thanks to an excellent partnership with ANDRITZ.“

SCOTTISH POWER
Daldowie, Scotland

World leader in municipal sludge drying: Four solutions, 100% ATEX/NFPA compliant

Paddle, belt, fluid bed, or drum? ATEX/NFPA, Class A, or low-grade waste heat? Whatever your preferences and requirements, we offer the industry's widest range of safe and efficient drying solutions – all tried and proven in the world's largest and most complex plants.

THE INDUSTRY'S BROADEST PORTFOLIO

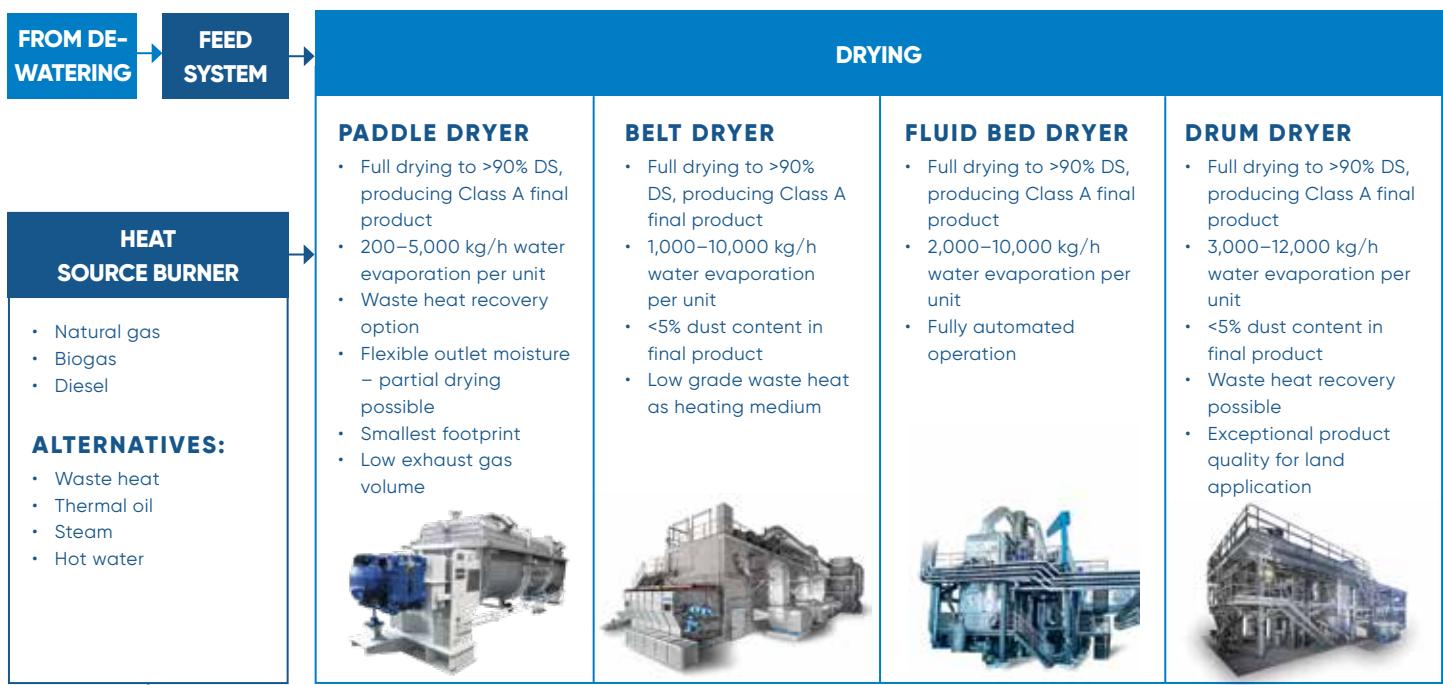
With more than 170 references in drying of municipal sludge, it's no wonder we offer so many ways to provide the driest final product at the lowest cost. For many new customers, the surprising fact is that all of them are also ATEX/NFPA compliant. And that a customized solution is available to suit nearly any heating source or downstream application. The choice is yours.

FROM WASTE TO RENEWABLE ENERGY

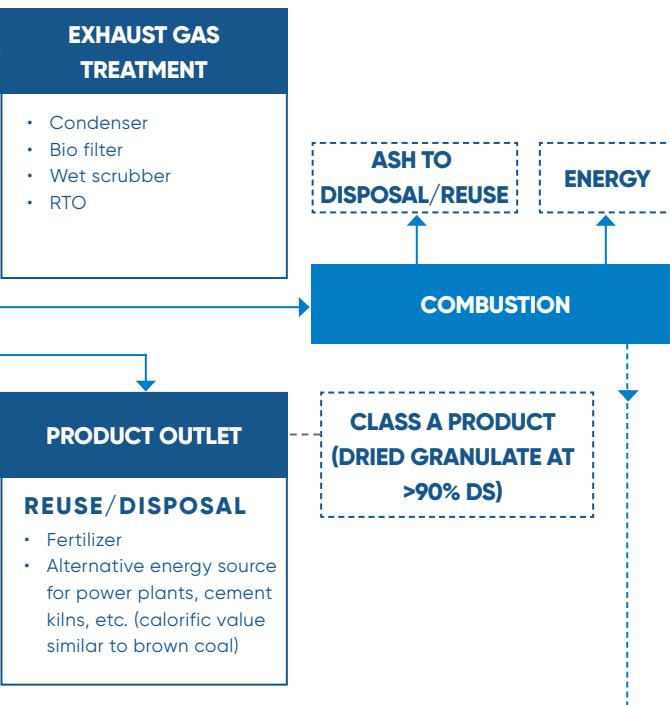
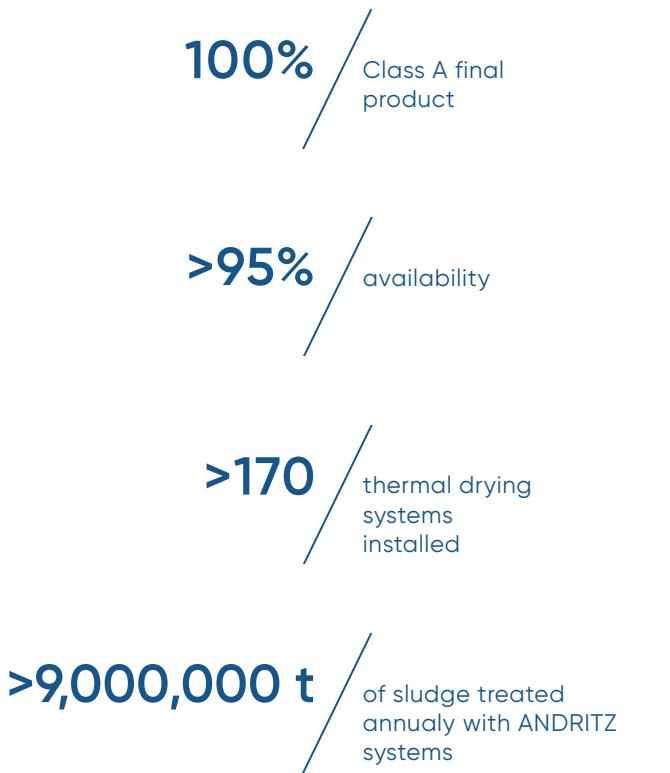
To reduce cost of ownership, we provide an equally wide range of ways to conserve energy and minimize environmental impact. For some, this means capturing

low-grade waste heat to power a belt drying system. For others it's all about producing Class A biosolids for profitable fertilizer products, or, in a recent project in Shanghai, dramatically reducing the volume of sewage sludge disposal to meet new regulatory demands. In Istanbul, the result was a fully automated paddle drying plant with the highest efficiency and lowest possible emissions.

Whether it's a single dryer or a full turnkey solution, we support you with all the test runs optimization, and technology needed to make the most of your waste streams – every step of the way.



Reuse of waste heat for drying process



"We clean two million cubic meters of sewage every day. ANDRITZ's drying system, fueled by digester gas, has helped us achieve substantially higher throughput at lower costs - all while meeting our requirements for environmental sustainability."

BAILONGGANG,
Shanghai China



Solving the world's municipal wastewater challenges

Over the years, we've built up a 10,000-strong reference list from all over the world. From developing to developed countries; smaller plants to some of the world's largest, our breadth of experience is extensive. Here are a few examples:



QUEENSLAND, AUSTRALIA – QUEENSLAND URBAN UTILITIES

CHALLENGE

To improve the extremely poor capture capacity of an inlet works with eight 15 mm mechanically raked bar screens. The aim of the screen replacement was to install a highly efficient, reliable, and low-maintenance screening system with 11,600 L/s hydraulic capacity.

SOLUTION

Eight in-channel, travelling belt, perforated panel Aqua-Screen P fine screen, together with field instrumentation and associated engineering.

RESULT

With safety and reliability as top priorities, Queensland Urban Utilities needed a close and experienced collaboration partner. From conceptual and technical design support to supply, on-site delivery, site inspections, testing, and commissioning, ANDRITZ not only met these needs, but exceeded expectations every step of the way.



CHANGI, SINGAPORE – PUBLIC UTILITIES BOARD OF SINGAPORE

CHALLENGE

Design, supply and install the world's largest drying plant, serving a new water treatment facility initially sized to treat 800,000 m³ of water per day.

SOLUTION

Five lines of DDS 110 drum dryers, each line capable of evaporating up to eleven tons of water per hour.

RESULT

The first stage of the drying plant has met all of its targets, including throughput, efficiency, and high treatment standards. Using the biogas created in the digestion process, the dryers are also completely self-sufficient in terms of thermal energy. Further plans are now in place to expand the treatment facility's capacity in stages up to a full 2.4 million cubic meters of water per day.



BRIGHTON, UK – SOUTHERN WATER

CHALLENGE

To serve 300,000 Brighton area residents with a complete solution capable of handling 95 MLD of wastewater and treating it to full European Directive standards. The plant, including anaerobic digestion, dewatering, and sludge drying, would include a massive 16,000 m² green roof – the largest of its kind in the UK. It would also need to produce renewable energy.

SOLUTION

Two D6LX dewatering centrifuges and one DDS 50 drum dryer, including a state-of-the-art PLC and SCADA control system.

RESULT

The Brighton plant, the sixth in a series of installations, now runs in excess of 98% availability, producing Class A granulate at 100% ATEX/NFPA conformity. In addition to its proven performance and reliability, the solution was chosen for its particularly high quality granulate, which is recycled as fertilizer in accordance with strict local regulations.



OCEAN COUNTY, NEW JERSEY – OCEAN COUNTY UTILITIES AUTHORITY

CHALLENGE

Turn municipal waste from 600,000 local residents into thousands of tons per year of one of the market's most sought-after fertilizer pellets.

SOLUTION

Three 2 m belt filter presses, two DDS 40 drum drying systems, and a 24-hour fertilizer plant, operated and maintained by ANDRITZ.

RESULT

Turning away from ocean dumping and landfilling of sludge, OCUA now sells some 8,500 tons annually of OCEANGRO® fertilizer pellets. Starting with three wastewater treatment plants, with a combined total flow of 80 MLD, the OCEANGRO® program has since won accolades including the Wave Award from the New Jersey Association of Environmental Authorities, and first place in the U.S. EPA National Clean Water Act Recognition Awards.

Intelligence for machine and process control

Metris addIQ control systems

With Metris addIQ, you have a well-proven, intelligent control solution for industrial processes and machines. Our solid/liquid separation specialists use their in-depth expertise to provide scalable solutions that are individually tailored to regional and application requirements. Whether you're automating new equipment or upgrading to extend the lifecycle of existing systems, we find the ideal solution for you.

Our tailored turnkey systems from a single supplier can improve entire plants or individual machines. By providing state-of-the-art automation technologies and digitalization, we ensure best-in-class performance. Automating machine and plant equipment measurably reduces gaps in many different production process steps. By using automation from ANDRITZ, you can reduce downtime thanks to features such as predictive analysis that allow you to optimize productivity.

Metris addIQ covers all levels of automation, starting at basic automation (machine, process, and plant control), to upgrades, and add-ons for process optimization. Together, you have a full range of optimized solutions that help reduce maintenance efforts and ensure preventive service for your machines and plants. These are all delivered from a single source and always individually tailored to your business demands. addIQ control systems are part of Metris, the ANDRITZ brand for digital solutions.



ANDRITZ offers a broad and constantly growing range of innovative products and services in the industrial digitalization sector under the brand name Metris, helping customers to enhance plant efficiency and profitability, optimize the use of resources, achieve constant and highest product quality, reduce production downtime, and maximize user-friendliness.



Your full-service provider

With ANDRITZ, you gain access to one of the world's largest OEM manufacturers for solid/liquid separation systems, including such well-known brands as 3Sys Technologies, Bird, Delkor Capital Equipment (Pty) Ltd., Escher Wyss dryers, Frautech, Guinard Centrifugation, KHD Humboldt Wedag, Krauss-Maffei centrifuges, dryers, and filters, Lenser, Netzsch Filtration, Rittershaus & Blecher, Royal GMF Gouda, Sprout Bauer, and Vandenbroek.

Whether you need spare parts, rentals, local service, repairs, upgrades, or modernization of your equipment, ANDRITZ is your true full-service provider. From initial consulting through to service agreements, process optimization, and training programs, we are always looking for ways to minimize downtime and increase predictability in operations while raising your overall production efficiency. Wherever you operate, our network of 550 service specialists and global service centers ensures we'll always be there to support you for many life cycles to come. Let's sit down and see how we could take your operations to the next level.



LOCAL SUPPORT

Responsive local service centers and field service technicians



REPAIRS & UPGRADES

Optimization of machine and process performance, repair work, retrofitting, and modernization



SECOND-HAND & RENTALS

Certified second-hand and rental machines



TRAINING

Operator training and tailored seminars for operating and maintenance personnel



OEM SPARE PARTS

Filter cloths, spare and wear parts from OEMs or with OEM level quality, all readily available



SERVICE AGREEMENTS

Preventive maintenance, contracts for spare parts, maintenance, inspections, repairs, upgrades, operation, and equipment monitoring



PROCESS OPTIMIZATION

Automation tools and process expertise to boost your profit



LAB AND ON-SITE TESTS

Lab and testing capabilities for process optimization and machine upgrades



WHAT'S YOUR SEPARATION CHALLENGE?

ANDRITZ Separation is the world's leading separation specialist with the broadest technology portfolio and more than 2,000 specialists in 40 countries. For more than 150 years, we have been a driving force in the evolution of separation solutions and services for industries ranging from environment to food, chemicals, and mining & minerals. As the OEM for many of the world's leading brands, we have the solutions and services to transform your business to meet tomorrow's changing demands – wherever you are and whatever your separation challenge. **Ask your separation specialist!**

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