



FEED AND BIOFUEL

FEEDING AND FUELING THE PLANET

LET'S FEED YOUR BUSINESS

ANDRITZ

ENGINEERED SUCCESS



**HOW
CAN WE HELP
GROW YOUR
BUSINESS?**

TABLE OF CONTENTS



THE ANDRITZ GROUP – A WORLD MARKET LEADER

ANDRITZ is an international technology group and a globally leading supplier of plants, equipment, and services for a broad range of industries.



DEDICATED TO FEEDING AND FUELING THE PLANET

ANDRITZ is vital to ensuring a reliable global supply of aqua feed, animal feed, pet food, and biofuel. With full process lines we continuously support leading producers in achieving the highest levels in safety, quality, and control from feedstock to final product.



YOU KNOW YOUR PRODUCT. WE KNOW PRODUCTIVITY

ANDRITZ equipment is designed to provide animal feed producers with a way to maximize production capacity while also achieving the best quality feed under the safest possible conditions.



THE FUTURE OF AQUA FEED STARTS HERE

At ANDRITZ, we go to extreme lengths – and depths – to give you total control over your aqua feed production. Whatever fish or crustacean species you aim to feed, no one has more expertise than ANDRITZ.



FLAWLESS QUALITY FOR THE MOST DEMANDING CUSTOMERS

As a longtime partner to hundreds of premium pet food producers worldwide, ANDRITZ provides comprehensive processing solutions and aftermarket services to keep your operations ahead of the curve.



BOOSTING YOUR BUSINESS FROM FIELD TO FUEL

When it comes to fueling the future of your business, our commitment covers your operation's entire lifecycle – from the first feedstock analysis through decades of nonstop biofuel production.



KEEP YOUR BUSINESS GROWING WITH OUR GLO- BAL SERVICE NETWORK

At ANDRITZ, we supply the necessary machines to complete the entire line of feed and biomass production plants globally. We are your partner for the lifetime of your equipment, whether originally supplied by ANDRITZ or any other manufacturer.



WHAT REALLY SETS US APART IS OUR PEOPLE

We have gathered the most comprehensive team of experts from all around the globe to create a network of knowledge and skills that make us the most valuable asset we can be for our customers in the feed and biofuel industries.

The ANDRITZ GROUP

– a world market leader

ANDRITZ is an international technology group and a globally leading supplier of plants, equipment, and services for a broad range of industries. The Group has a leading position worldwide in these business areas:

FEED AND BIOFUEL

One of the world's leading suppliers of technologies, systems, service, and advanced industrial equipment for the animal feed, aqua feed, and pet food industries, and for the biofuel pelleting industry.

HYDRO

Electromechanical equipment for hydro-power plants (turbines and generators); pumps (e.g. for water transport and irrigation); turbo-generators for thermal power stations.

PULP & PAPER

Systems and equipment for production of pulp, paper, tissue, and board; energy boilers; plants for production of nonwovens and plastic films.

METALS

Presses for metal-forming; systems for production and processing of stainless steel, carbon steel, and non-ferrous metal strip; industrial furnaces; resistance welding equipment.



Pulp mill



Francis turbine for hydropower plants



Service and repair of
SEPARATION disc filter solution



HEADQUARTERS

Graz,
Austria



Hot stamping TechCenter



ANDRITZ GROUP OVERVIEW:

- Headquarters: Graz, Austria
- Employees: approx. 25,000
- Global presence:
250 production sites and service/sales companies worldwide.

SEPARATION

Equipment for solid/liquid separation for municipalities and a variety of other industries; including systems and equipment for the production of feed and biofuel pellets.

ANDRITZ also offers technologies for many other sectors including automation, steam boiler plants, biomass boilers and gasification plants for energy generation, flue gas cleaning plants, plants for the production of panel boards (MDF), thermal sludge utilization, and biomass torrefaction plants.

The cornerstone of today's international technology Group ANDRITZ was founded in 1852 when a small iron foundry was set up in Graz, Austria.

Dedicated to feeding and fueling the planet

ANDRITZ is vital to ensuring a reliable global supply of aqua feed, animal feed, pet food, and biofuel. With full process lines accounting for half the world's production of aqua feed and biomass alone, we continuously support leading producers in achieving the highest levels in safety, quality, and control from feedstock to final product. How can we help grow your business?

LET'S FEED AND FUEL YOUR BUSINESS

The future of food and energy is full of ambitious ideas such as novel nutrient blends, unique feed properties that boost conversion rates, and high capacity process lines that virtually eliminate waste. To seize upon these opportunities, feed and biofuel producers demand a partner they can trust to deliver the right production capacity with the right service and expertise today – and for decades to come.

As a partner with more than 180 years of industry experience, no one knows more about these opportunities than ANDRITZ. From initial feedstock analysis to grinding, conditioning, and drying. From extrusion and pelleting all the way through to the largest parts and service supply chain on the planet. Together with leading producers in all major markets worldwide, our knowledge, services, and solutions continue to drive the evolution of tomorrow's feed and biofuel production.



ANDRITZ / Your qualified and
experienced partner



YOUR EXPERIENCED PARTNER

When choosing products and solutions from ANDRITZ, you will have a qualified and experienced partner with the ability to assist from start to finish. We are a full-service supplier for our customers and offer a simple and efficient "one-stop-shop" concept, which means we cover the entire process and supply all the machines for the line.

Our solutions are tailor-made to meet the specific requirements and needs of our customers.

WE OFFER:

- Turnkey projects
- Single unit machines
- Technical consultancy
- Engineering services
- Local aftermarket service and support





**HOW
CAN WE HELP
FEED YOUR
BUSINESS?**

You know your product. We know productivity

LET'S FEED YOUR BUSINESS

At ANDRITZ, our aim is to give every animal feed miller the optimal combination of feed quality, safety, and capacity utilization. Whether you're looking to achieve a unique nutrient blend, lower operating costs, or achieve complete feed traceability, we have your needs covered from raw material intake

to bulk loading of finished feed. Whatever your ambitions, our market-leading solutions and aftermarket services can help you get there. So put our process knowledge to work, and let's talk productivity. Find out how our worldclass solutions can feed the future of your business. Contact us today.



PASSION

Times and technologies change,
but our passion is always there



ANDRITZ: Iceland's top feed factory rises from the sea

LIFLAND

Lifland, Grundartangi, on the coast of an inlet just north of Reykjavik.

In 2006, an Icelandic compound feed company decided to make a major investment in the future. The goal: To build the country's most modern, flexible and productive feed mill for a wide range of livestock. With support from ANDRITZ, this 100-year-old company is now successfully leading the way into a new era of growth.

When Thorir Haraldsson decided to modernize his operation, he knew he needed an engineering partner he could trust. "I contacted a number of suppliers," explains Haraldsson, Director of the Lifland animal feed mill, "and ANDRITZ was the only one able to come to our site to design, deliver and commission a complete process line factory from the ground up. No one else had all the capabilities I needed."

TAILORING THE DESIGN

The ANDRITZ team arrived in Grundartangi, on the coast of an inlet just north of Reykjavik. Together with Haraldsson, they discussed the

barley, wheat and vitamin formulations Lifland intended to use. Raw material storage, silo sizes, and cooler systems were defined, and ANDRITZ proceeded to design a state-of-the-art feed facility, including all of the elevators, conveyor systems and ancillary equipment necessary for a fully integrated factory.

Regrettably, in 2008 the global financial crisis struck Iceland with full force, putting the project's finances on hold. Through it all, a strong collaborative partnership ensued, knowing that new financing would eventually be secured and the project moved ahead as planned.





THE RISE OF A MODERN FEED MILL

When the team of engineers and electricians arrived from Denmark, Lifland had constructed a new quay in Grundartangi harbor from crushed lava stones, and less than a year later, in October 2010, the completed plant was inaugurated with a celebration of 400 visitors, including several government ministers. Together, Lifland and ANDRITZ built Iceland's largest feed mill, capable of producing 12 tons of feed per hour.

With the help of training and commissioning assistance from ANDRITZ, Lifland's technicians were soon producing at full capacity. An advanced double cooler system made it possible to change recipes in minutes – a significant advantage for processing a broad range of feed products for Icelandic horses, cows, sheep, pigs, broilers, and layers. By the end of the first year, Lifland had produced a full 24,000 tons of feed.

GROWING CAPACITY, ENHANCING CONTROL

Fortunately, Haraldsson had the foresight to request a facility with sufficient space to expand, and in 2015 an additional process line

was designed and installed. Other fine-tuning and upgrades were done simultaneously on the first line, which had been operating around the clock, five days a week. "This meant that any maintenance work had to be completed on the weekends," says Haraldsson. "With the second line, we can now produce almost twice the volume while working just two 16-hour shifts per week."

Thanks to the combination of high performance, low energy consumption, and rapid changeover times, the Lifland factory's products are now extremely competitive in terms of price and quality. The new line is used primarily for broiler and layer feed, while the first line continues to change recipes for additional products including, most recently, cattle feed.

"I'm very pleased with how this partnership worked out. When I first stood here and pointed to where I planned to build, the ANDRITZ staff looked at me and said, 'But it's just the sea! Where is the land?' Here we are today in that same spot, producing 40,000 high-quality tons per year in the middle of a fast growing new seaport. It's a very exciting time."

THORIR HARALDSSON

Director, Lifland animal feed mill, Iceland





**HOW
CAN WE HELP
FEED YOUR
BUSINESS?**

The future of aqua feed starts here

LET'S FEED YOUR BUSINESS

At ANDRITZ, we go to extreme lengths – and depths – to give you total control over your aqua feed production. Whatever fish or crustacean species you aim to feed, no one has more expertise in designing,

commissioning, and servicing the right combination of technologies to build and sustain a healthy, growing aqua feed business. Find out how our vast expertise and patented aqua feed processing technologies can feed the future of your business. Contact us today.



VERSATILITY

We accomplish your goals by taking your challenges on headfirst

ANDRITZ: Solid relationships help one of Ecuador's largest shrimp feed producers reach jumbo proportions

Empagran, the parent company of ABA Balanceados and pioneers in the development of aquaculture diets, is a fully integrated aquaculture company dedicated to the entire shrimp production chain. They manufacture feed for shrimp and tilapia, which they have been raising for over 45 years.

In order to cover the full production cycle of their shrimp, Empagran bought the feed manufacturing plant ABA Balanceados in 1998, which is located just a few kilometers away from their shrimp pools, the Somar packing plant and their headquarters in Guayaquil. Shortly after the January 1998 purchase, an expansion of the ABA plant was completed, allowing Empagran to produce 162,500 40Kg bags of feed per month.

At the time of this first expansion, ANDRITZ extruders were chosen for their ability to perfect a dense pellet that will not lose its structure underwater. Production manager, Mauricio Vernaza explains, "Since shrimp are bottom feeders, the pellet must hold together long enough to be discovered by crustaceans roaming the bottoms of the grow-out pond and they must also be dense enough that they do not float. Sinking must occur in just a matter of seconds or shrimp food quickly becomes bird food."

Equally as important as sound "sinkability" of the pellet, is the nutritive quality of shrimp feed. Shrimp feed is complex because it must be nutritionally balanced as well as properly sized for healthy growth at each stage of shrimp development from larvae to adult. "We are



continuously improving our nutritional formulas thanks to direct interaction with shrimp and tilapia farms and research groups in the field, with whom we verify the direct results of feed conversion." ANDRITZ extruders allow ABA to produce the right-sized pellet to match the life cycle and nutritional needs of the shrimp.

"The quality and certifications we have been awarded due to our extensive research and development have led to very high demand for our pelletized and extruded shrimp and fish feed. We sell approximately 85% of the feed we produce to farms throughout Ecuador and many other countries, with the remaining 20% used for the feeding of our own stock."



This growth has prompted the addition of another new plant. The new ABA plant will provide growth areas in the extrusion product line to meet the growing demand for Empagran feed.

Having enjoyed a long and prosperous working relationship of approximately 20 years with ANDRITZ, Empagran will once again install the ANDRITZ extruder.

ANDRITZ was chosen because of their product quality and knowledge and because Empagran's familiarity with their products means less operational training will be needed and implementation will be faster. "However, it is not only because they are a leading brand

known for their quality," Vernaza stated unequivocally, "they also have excellent post-sales services. Logistics are never a problem with ANDRITZ – with other companies, located in other countries, there are language and time challenges that Empagran does not encounter with ANDRITZ because they have representatives and product centers nearby to coordinate and manage projects locally."

"With ANDRITZ I am comfortable knowing there is someone covering my back, someone responsive, who will return my calls to work on challenges when they are presented. But the biggest reason we chose ANDRITZ is that they are a good group of people who are always so easy to work with, and together, we are a team."

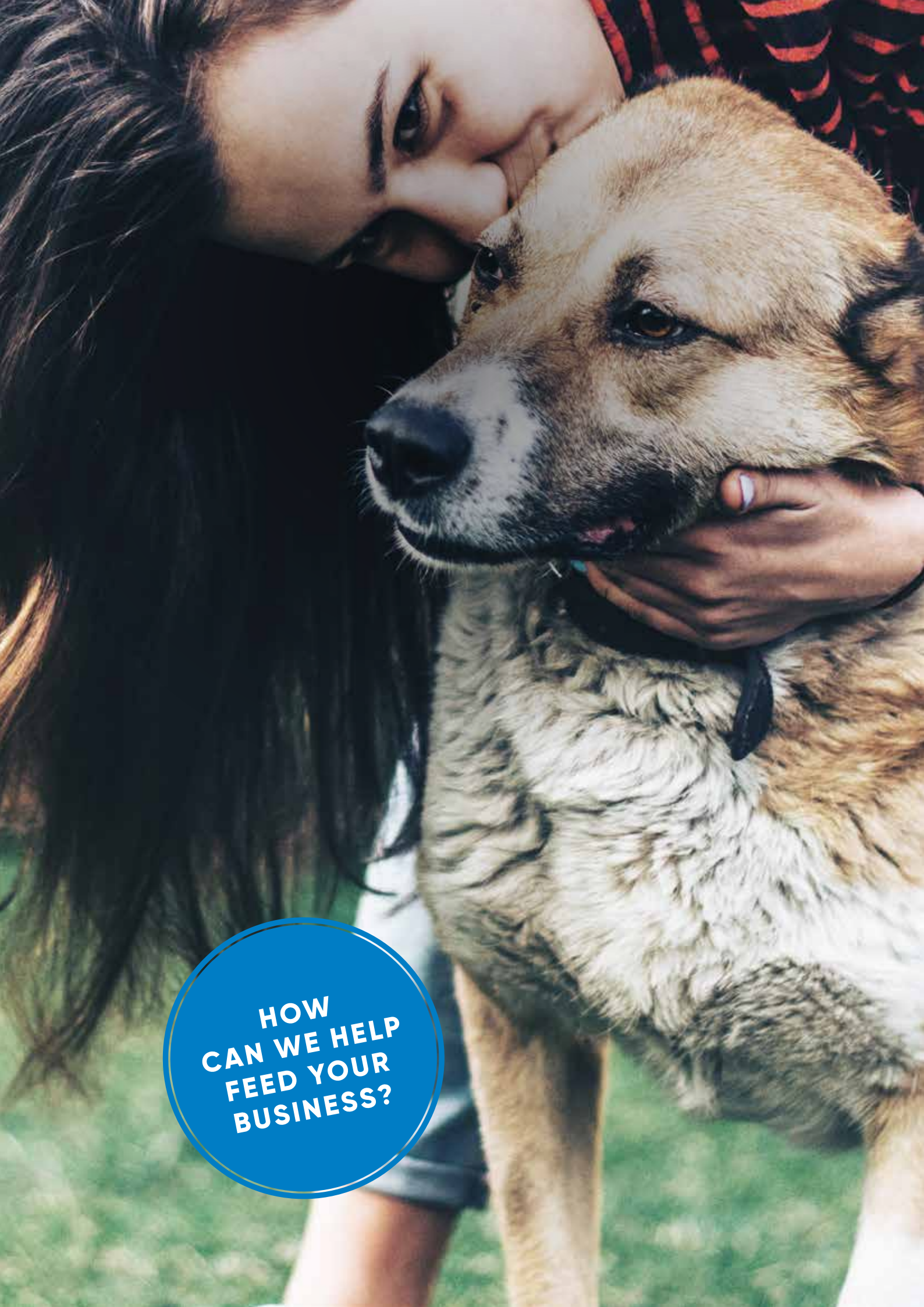
The new production line is now in the commission period with the full operational launch planned to occur later this month, April 2018. The new production line will add up to 25,000 tons of feed per year over the next three years. Currently, ABA is the biggest and most automated plant in Ecuador, and even though it has the capacity to produce any kind of feed, it has specialized in making feed for shrimp its primary focus.



"With ANDRITZ I am comfortable knowing there is someone covering my back, someone responsive, who will return my calls to work on challenges when they are presented. But the biggest reason we chose ANDRITZ is that they are a good group of people who are always so easy to work with, and together, we are a team."

MAURICIO VERNAZA

Production manager, ABA Balanceado, Ecuador.



**HOW
CAN WE HELP
FEED YOUR
BUSINESS?**

Flawless quality for the most demanding customers

LET'S FEED YOUR BUSINESS

The growing demands of today's pet food market require increasingly specialized knowledge, together with advanced processing technologies. As a longtime partner to hundreds of premium pet food producers worldwide, ANDRITZ provides comprehensive

processing solutions and aftermarket services to keep your operations ahead of the curve. All to guarantee easy, safe, and efficient operations that can quickly adapt to the next market trend. Find out how our world-class processing solutions and services can feed your business. Contact us today.



PERSPECTIVES

By exploring new paths, we discover the most promising technologies for the future



Making the means to please picky eaters

Industry estimates put the global pet population somewhere around 400 million and as human populations continue to skyrocket, so will the number of household pets. The nutritional and digestive requirements for these animals varies greatly depending, not only on the species of the pet being fed, but also upon their age, activity level, temperament, and health. Additionally, pet owners expect their pet's food to come in many different shapes, colors, and flavors and the

demand for high-quality pet food, with a pleasing visual appearance as well as the right nutritional benefits, require advanced, multi-functional equipment.

ANDRITZ manufactures the advanced machines and technologies that enable pet food processors to meet the changing nutritional needs of a wide variety of animal breeds while also realizing the demands of discerning pet food consumers and their owners.



Just like human fingerprints, no two dogs' nose prints are alike.

ANDRITZ is unlike any other pelleting supplier, unique in their ability to make an imprint on your business.

Feed technologies; from raw material intake to finished feed bagging

ANDRITZ provides processing machines and equipment from raw material intake to finished feed bagging. Our pelleting and extrusion plants are designed to surpass food safety and hygiene regulations while maintaining traceability.



ANIMAL FEED PROCESSING

Industrially produced animal feed is undergoing continuous processing and quality improvement to keep up with the effectiveness of the agricultural industry as well as the continuously increasing focus on food safety and traceability.

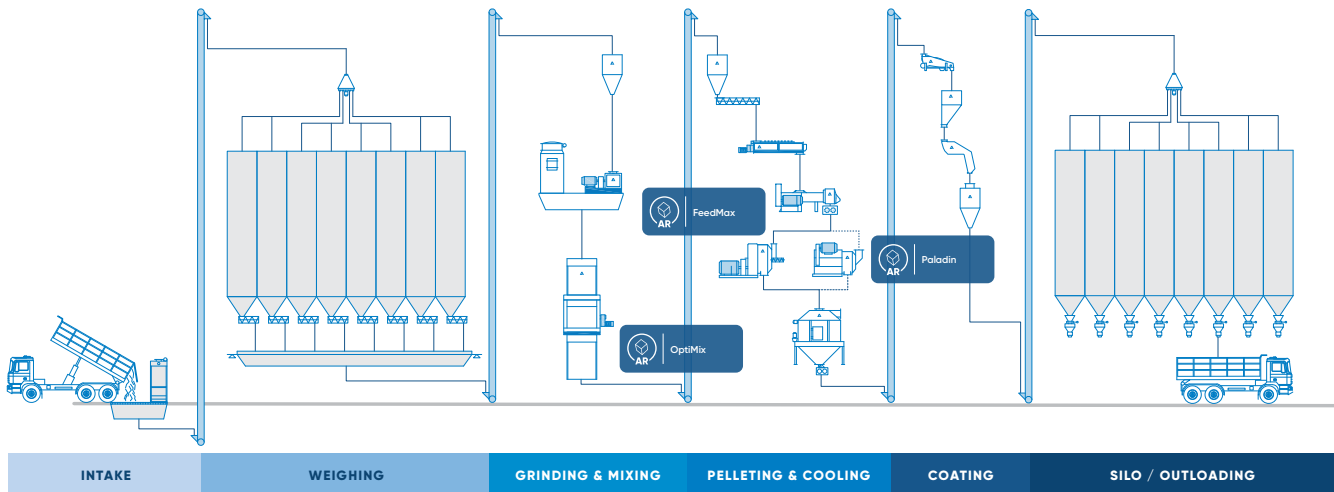
ANDRITZ animal feed processing technologies appeal to both commercial feed millers and farmers. Our pelleting technologies enable our customers to create their own unique recipes and combinations of ingredients – making sure that the animals have the right amount of vitamins and protein.

AQUA FEED PROCESSING

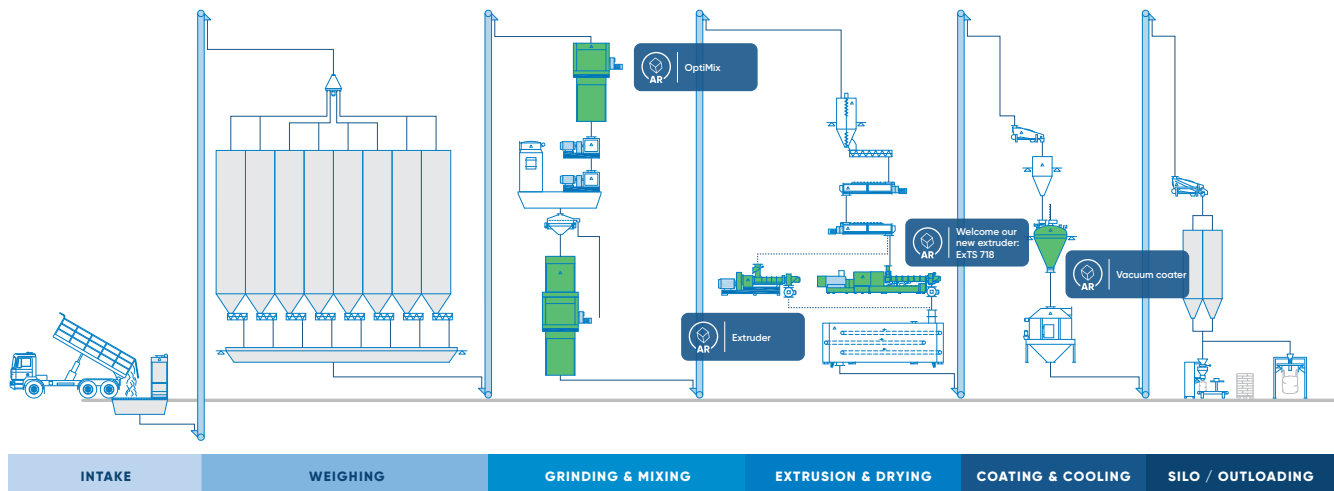
The fish farming industry is experiencing substantial growth in all regions of the world, creating a demand for high-quality fish feed. The key to successful fish farming lies in correctly adapting feed formulas to achieve homogeneous content with exacting physical properties. It is essential to consider the feeding characteristics for each specific species of fish.

The ANDRITZ extruder adapts to achieve the specific processing steps necessary in this elaborate production line. ANDRITZ offers

ANIMAL FEED PROCESSING FLOW



AQUA FEED AND PET FOOD PROCESSING FLOW



unique extrusion programs for production of all kinds of feed for fish and shellfish. The extrusion program ensures that the feed has the right physical properties – giving it the appropriate sinking abilities for each different species of fish.

PET FOOD PROCESSING

The pet food market is a large segment undergoing constant research and development with increasing attention on the health and well-being of pets. Pet owners' standards are higher than ever, and they expect superior products that come in many diffe-

rent shapes, colors, and flavors. The demand for high-quality pet food that looks appealing as well as having all the right nutritional benefits requires advanced, multi-functional equipment. ANDRITZ offers the latest machines and technology that enable our customers to meet these increasing demands from pet owners.

To view our machines in a more direct and lively way, we added augmented reality to our processing flows. Check it out.

HOW TO

Download our ANDRITZ AR APP in the AppStore/PlayStore



Scan the marked icons and experience the enhanced content.





**HOW
CAN WE HELP
FUEL YOUR
BUSINESS?**

Boosting your business from field to fuel

LET'S FUEL YOUR BUSINESS

When it comes to fueling the future of your business, our commitment covers your operation's entire life cycle. From the first feedstock analysis in the field, through non-stop biofuel production. For Georgia Biomass, this meant

building the world's largest biomass plant, backed up by a new ANDRITZ dedicated service center in their own backyard. Find out how our world-class processing solutions and services can fuel your business. Contact us today.



PARTNERSHIP

Reliability, integrity, and respect are the fundamental elements of our philosophy as your partner

Biofuel and waste recovery pelleting

ANDRITZ offers complete heavy-duty solutions for the production of solid and liquid biofuel and waste pellets. We have the ability to manufacture and supply every key processing machine in the pellet production line – from log intake to finished pellets.



We design solutions based on highly advanced key machinery for wood grinding and pelleting – including chippers and dryers for the processing of both wet and dry, green wood prior to the pelleting process.

ADVANTAGES OF PELLETING:

- Simple handling
- Reduced transportation cost
- Better storage capabilities
- Homogeneous fuel of identical standard
- Environmentally friendly product

WASTE PELLETING TECHNOLOGIES

The increasing focus on renewable energy has strongly increased the interest in plants producing pellets from waste material such as plastics, paper/labels, cardboard, sludge, industrial waste, chemicals, and stabilizers.

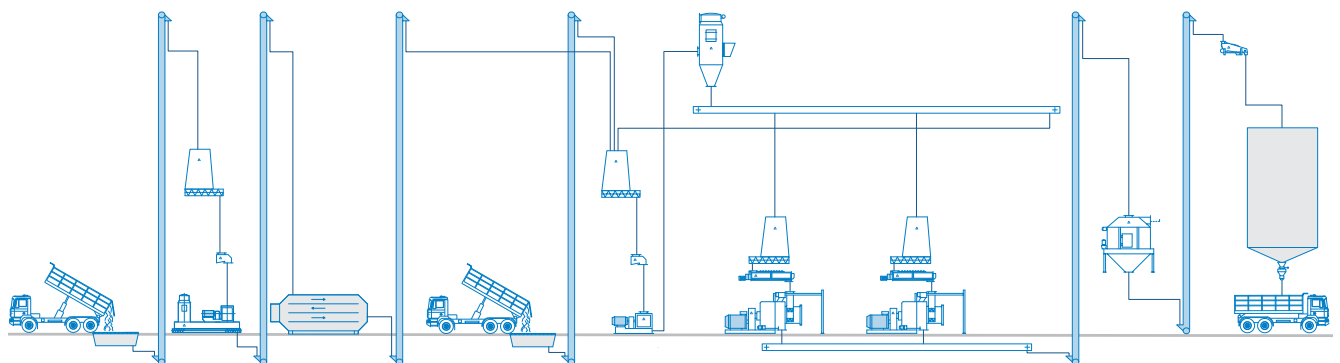
BIOMASS PELLETING TECHNOLOGIES

Bioenergy is the result of converting biomass into useful forms of energy – most often by making wood pellets that can be used to generate heat.

RAW MATERIALS USED FOR BIOMASS PELLETING:

- Sawdust
- Bark
- Wood chips
- Straw

Other renewable energy sources can come from liquid biofuels such as bioethanol. Bioethanol is produced from several different types of foods, such as sugar beets, corn, and potatoes, but also from straw, alfalfa, wood, and wood chips.



More than 50% of the biofuel pellets produced worldwide are made using ANDRITZ pellet mills.



ANDRITZ: Boosting efficiency at the world's largest biofuel production plant

Georgia Biomass, located in the Southeastern region of the United States, is the leading supplier of sustainable wood pellets and the largest, most modern facility of its kind in the world.

The company's product, made from Southern Yellow Pine, is exported to several European countries currently attempting to reduce their use of fossil fuels by utilizing renewable energy sources such as solar power, wind power, and sustainable wood pellets.

The Southern Yellow Pine, a conifer native to Georgia, grows at a very rapid rate as compared to many other species. Because this variety of pine matures in approximately 30 years, it is

an ideal renewable resource for power generation, industrial applications, and residential heating.

During Georgia Biomass' design phase, the ANDRITZ hammer mill and pellet mill were identified as the best equipment for meeting the extreme production needs Georgia Biomass would face and from the wood yard to pellet production, ANDRITZ technology can be found throughout the plant.

"This is a large operation," says Mark Gaddy, Chief Operating Officer. "We have ten double stacks of ANDRITZ hammer mills and 22 ANDRITZ PM-30 pellet mills, 21 of which are running at all times. We also use ANDRITZ conditioners and coolers. These are very robust and effective products."

The pelleting operation begins when dried wood chips arrive at the ANDRITZ hammer mills. The wood chips processed at the plant come from a mix "long wood" or harvested trees and "alternate feed stock" or re-claimed wood that is residual from other processes such as lumber production.

Conditioning follows the grinding process. ANDRITZ conditioners inject low-pressure steam into the wood particles, not only adding heat but also activating the lignin in the wood fibers, improving the stability and overall quality of the finished product.

The final stage of the process takes place in the ANDRITZ coolers, finishing and further increasing the durability of the pellet. Strength is a critical factor in this process, as these small finished pellets have a long journey aboard rail cars bound for Savannah and then outbound transportation overseas.

Since commencing operations in April 2011, the Waycross plant has created more than 90 direct jobs locally and 300 more indirect jobs. "Safety, environmental compliance and sustainability are paramount," declares Gaddy. "To achieve the highest standards, we need the right processes and equipment, but above all, we must have the right partner."

"ANDRITZ has been by our side since the start," Gaddy states. "It is a really successful long-term relationship. Scaling up a pelleting process for a plant of this size certainly creates some challenges. Together we have continuously improved quality and production rates. ANDRITZ has always been there to help us test new approaches, solve issues, and find creative solutions. The key challenges have been addressed, and as a result, the plant is running at full capacity."

Mark Gaddy emphasizes that, apart from the reliable equipment itself, ANDRITZ has delivered a unique level of service. "They've really gone above and beyond the call of duty," he says. "We are running 24/7/365, and sometimes we need immediate service on a weekend or holiday. ANDRITZ has always met our needs, which has included a member of the ANDRITZ staff jumping into a truck and bringing the parts right to our door – on Christmas Eve. That service means a lot to us."

"It all comes back to the quality of our equipment and the optimal operating conditions we've learned to create together with ANDRITZ."

MARK GADDY

Chief Operating Officer, Georgia Biomass, Georgia

GEORGIA BIOMASS CERTIFICATIONS

- **Forest Stewardship Council (FSC®) Chain-of-Custody certification**
- **Forest Stewardship Council (FSC®) Controlled Wood certification programs**
- **Programme for the Endorsement of Forest Certification (PEFC®)**
- **Sustainable Forestry Initiative® (SFI®) chain-of-custody certification**
- **European Pellet Council ENplus® A1 Certified Producer**

With production already running at optimal rates, nearly 750,000 metric tons, Georgia Biomass is always looking for new ways to reduce maintenance costs and increase profitability. "Wear parts are a big chunk of our expenses," Mark Gaddy says. "The challenge is to extend the lifetime of these parts to decrease expenses and increase runtime. The ANDRITZ commitment," Gaddy adds, "extended to setting up a machine shop in nearby Savannah to service those parts that can be refurbished, saving us even more time and money."

ANDRITZ has helped us to refine lubrication formulations and optimize running conditions to improve performance. The ANDRITZ system also enables us to monitor and control energy use, which is vital for both sustainability and cost control."

Above all, Georgia Biomass needs to meet its customers' expectations. "They want proven sustainability, safe production, the right quality, dependable supply and on-time deliveries," Mark Gaddy says. "It all comes back to the quality of our equipment and the optimal operating conditions we've learned to create together with ANDRITZ."





**HOW
CAN WE HELP
SERVE YOUR
BUSINESS?**

Keep your business growing with our global service network

LET'S SERVE YOUR BUSINESS

At ANDRITZ, we supply the necessary machines to complete the entire line of feed and biomass production plants globally. We are also your partner for the lifetime of your equipment, whether originally supplied by ANDRITZ or any other manufacturer. We manufacture wear and spare parts and are

the largest die and roll shells producers in the world; covering approximately 25% of die production around the world. Our spare and wear parts are stocked at strategic locations to minimize downtime and maximize productivity. Find out how our world-class processing solutions and services can serve your business. Contact us today.



EVERY DAY

We build and live sustainable partnerships



When it comes to your business, we go full circle

At ANDRITZ, we partner with our customers to maximize equipment performance, efficiency, and value over the entire life of your production plant. With a wide range of value added services you will find a cost effective solution that fits your business needs.

NEW EQUIPMENT AND PRODUCTION LINES

ANDRITZ manufactures the highest quality equipment for every step in the processing line for the production of animal, aqua, and pet food as well as the key equipment necessary for many types of industrial and biofuel applications.

Our engineers specialize in expert installation, testing, and analysis of new equipment as well as full production lines to assure your facility is meeting or exceeding your operational requirements.

MAINTENANCE SERVICES

Once commissioning is complete and your facility is fully operational, we partner with you to create a comprehensive service agreement, thus reducing the risk of unexpected downtime. Scheduled maintenance and mechanical inspection, as well as routine repair and refurbishment services, are a predictable component of your routine, allowing you to mitigate future production losses.



ANDRITZ PROCESS PERFORMANCE SERVICES

Performance Services start with a complete process review to accurately assess the condition of your equipment as well as your processing lines. Based on the review, an ANDRITZ service expert determines the best course of action for extending the lifetime of your equipment and optimizing operational performance. Performance services are customized to meet the individual needs of your equipment and business objectives.

All ANDRITZ solutions are compatible with our automation systems, which allows you to measure performance in real time, diagnose and adjust inconsistencies, and analyze outcomes for peak performance and greatest cost savings.

TRAINING

ANDRITZ provides comprehensive training service to facility personnel so you can be confident that your newly installed equipment continues to function according to its original design intent, meeting project requirements for years. Additionally, on-site refresher courses are available to bring new operators up to speed and to give seasoned professionals a renewed sense of the manufacturer’s recommended maintenance schedules for the most optimized process conditions.

ENGINEERED WEAR AND SPARE PARTS

All the equipment and services provided by ANDRITZ are backed by our superior engineered wear and spare parts manufactured, not only for original ANDRITZ equipment but for other brands and models of equipment on the market.



Your local ANDRITZ parts warehouse



CNC machined counter-sink of a pellet mill die

Our excellent aftermarket services and support are what really sets us apart from our competitors



ANDRITZ:

The hands that help an international animal nutrition powerhouse deliver

De Heus Animal Nutrition is a leading global supplier of nutritional products for animals and the power behind the progress of egg, meat, milk, and fish producers around the world.

De Heus was founded in 1911, and though they are an international company producing seven million tons of feed annually in more than 70 countries located in Europe, Asia, the Middle East, Africa and Latin America, they are still a family-owned company that can trace their roots back to the Netherlands. In fact, half a million tons of the feed produced by De Heus comes from the mill in the Maasbracht, Netherlands and their aftermarket partnership with ANDRITZ helps keep them running.

When De Heus purchased the mill in Maasbracht in 2013, everything inside had to be replaced. Marcel Jeurissen, the plant manager at this long-established mill located along Julianakanal remembers it well and recalls that it was a stressful and exciting time for De Heus. "The company had just purchased the facility, but even so, it had to be up and running in a very short window of time. The equipment was all very old; everything had to be pulled out, new electrical systems and automation were required, but the ANDRITZ machines were there, and we had it up and running on schedule, April 1st, 2014."

"The feed industry is unlike any other manufacturing industry. When you make a car or a refrigerator the parts are the same every time, but we are working with natural ingredients – these ingredients are different each time you encounter them. We have to make constant adjustments, and we have to make progress with these ingredients every day. The world depends on a healthy supply of

food products, and this originates from quality feed. We can only meet this growing demand by exploring new markets and introducing innovative formulas that help farmers get more eggs from one chicken and more meat from one cow."

"This is our mission; providing tailored solutions for every kind of farmer because no two farms are alike. Say a farmer grows his own wheat, and he wants to utilize that resource; De Heus creates a formula that provides his animals with the nutrition they need from the wheat he grows."

De Heus currently produces over 700 of these individual formulas with each one running at approximately 15 tons per hour. Their equipment must run longer hours with less downtime to meet the needs of each individual farm and farm animal.

This is why the ANDRITZ equipment was a must for De Heus. The high capacity motors



and the quality construction of their pellet mills, conditioners, and expanders provided an increased range of 20 tons per hour, meaning De Heus could run above capacity while maintaining a high-quality product.

"Running at this capacity makes regular maintenance absolutely necessary to prevent an outage, but when an emergency does happen, ANDRITZ is right there." Jeurissen shared, "An incident occurred just a few weeks ago - we had a broken shaft bearing. This particular piece of equipment usually takes two weeks to deliver, but we couldn't wait that long. We called ANDRITZ for a solution, and while we were on the phone with their customer service representative, they located an available engineer."

Jeurissen exclaimed, "He loaded the parts into his vehicle and drove them straight to the plant in the Netherlands. We were up and running again within 24 hours."

This kind of responsiveness is the main reason De Heus chose ANDRITZ equipment. "The equipment is good, but their aftermarket service is the best in the industry. We know that if we need a part or an engineer, ANDRITZ will not hesitate to send someone - not just to the Netherlands but from Brazil to Vietnam."

**ANDRITZ INSTALLATIONS
AT THE MAASBRACHT PLANT,
NETHERLANDS:**

- 4 x Pellet mills, PM919
- 4 x Conditioner, CM902PH
- 4 x Feed Expanders, FEX34
- 4 x Crumbler, GRM181
- 1 x Paladin, PAL1600

"The equipment is good, but their aftermarket service is the best in the industry. We know that if we need a part or an engineer, ANDRITZ will not hesitate to send someone - not just to the Netherlands but from Brazil to Vietnam."

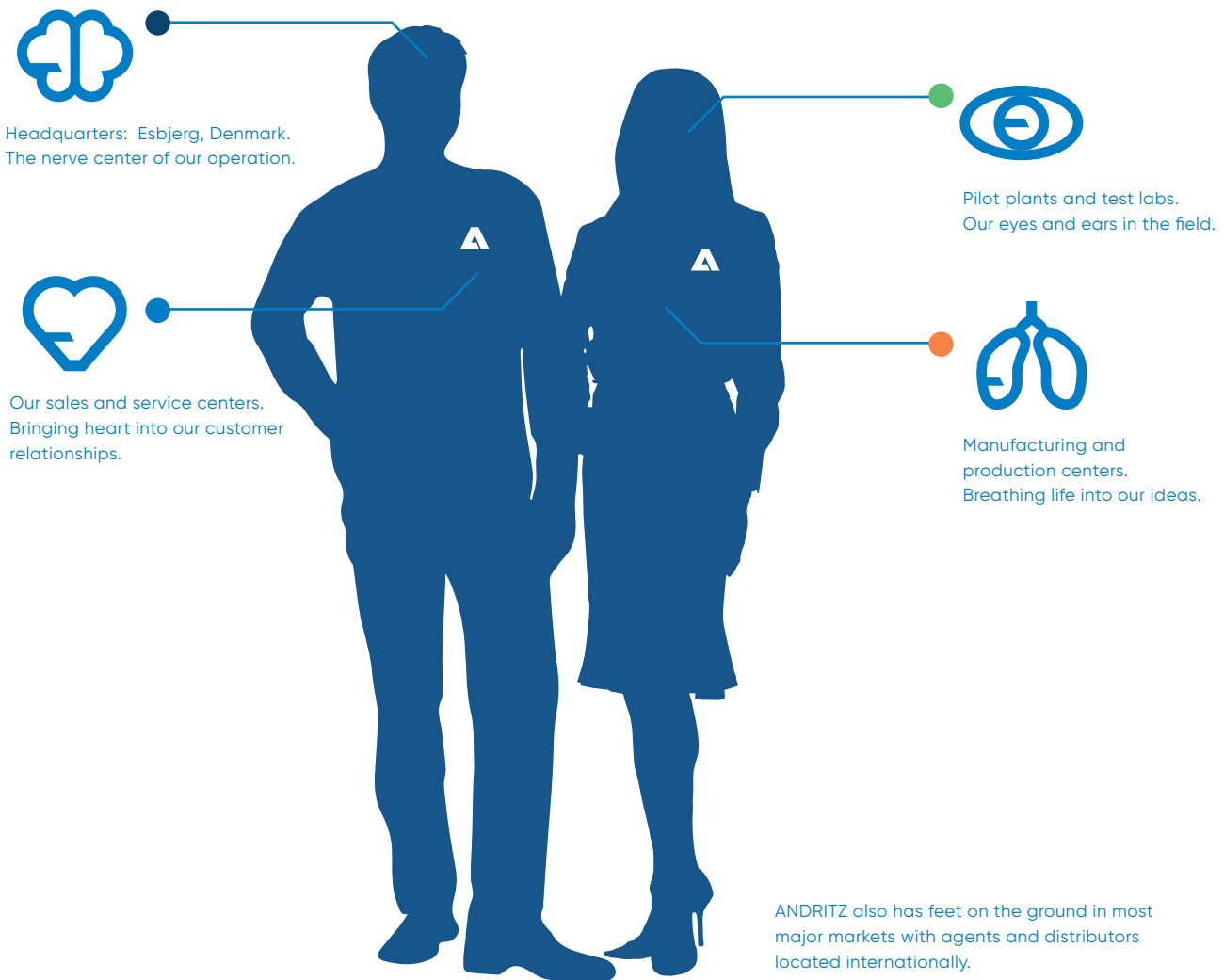
MARCEL JEURISSEN,
Plant manager, Maasbracht, De Heus Animal Nutrition,
the Netherlands.





What really sets ANDRITZ apart is our people

ANDRITZ Feed and Biofuel have gathered the most comprehensive team of experts from all around the globe to create a network of knowledge and skills that make us the most valuable asset we can be for our customers in the feed and biofuel industries.



We are located all around the world

EUROPE

In a network of around 250 global ANDRITZ locations, the location in Esbjerg, Denmark, serves as the headquarters and central administration for ANDRITZ Feed and Biofuel. In addition to housing administrative functions, it also serves as a sales and service hub, engineering and design office and is the primary source of research and development for future technological advancements.

Research and testing, both internally and for our customers, is supported by the Danish Technological Institute, the home of the ANDRITZ pilot plant and test lab located in nearby Sdr. Stenderup, Denmark. The European Union is also home to manufacturing facilities in Humenne, Slovakia and Geldrop, Netherlands, specializing in new equipment manufacturing and the manufacturing of dies and rolls for pellet mills, and spare and wear parts for pelleting equipment, respectively.

- Headquarters: Esbjerg, Denmark
- Sdr. Stenderup, Denmark
- Saint Martin Le Beau, France
- Mettman, Germany
- Schio, Italy
- Geldrop, Netherlands
- Warsaw, Poland
- Humenne, Slovakia
- Hull, United Kingdom

NORTH AMERICA

The offices in Muncy, Pennsylvania are the primary location for the manufacturing of new equipment, warehousing replacement parts, and consumables, and providing refurbishment and rebuilds in North America.

Additionally, Muncy is home to a state-of-the-art material testing lab featuring a production size pellet mill and specialized size reduction equipment for producing accurate process data and operating characteristics.

ANDRITZ has two additional locations providing specialized replacement and refurbishment services to milling customers throughout North and South America, one located in the southern part of the United States and the other in the southern part of Canada, achieving our commitment to fast and efficient service.

- Blenheim, Ontario Canada
- Morelia, Mexico
- Savannah Georgia, USA
- Muncy, Pennsylvania, USA
- Muncy, Pennsylvania, USA

SOUTH AMERICA

ANDRITZ has extended its global production network into Pomerode, Brazil. This facility strengthens the service offerings from ANDRITZ to our customers throughout South America and will ensure shorter delivery time on all our products and aftermarket services.

- Pomerode, Brazil
- Santiago, Chile

CHINA

The Foshan office houses experts in sales, service, engineering and design. Both locations; Foshan and Shanghai, manufacture high-quality European process machinery for the milling industries, as well as many other components for most feed and biofuel equipment, not just ANDRITZ machines.

- Foshan, China
- Shanghai, China





- **Headquarter**
The nerve center of our operation
- **Sales and service centers**
Bringing heart into our customer relationships
- **Manufacturing and production centers**
Breathing life into our ideas
- **Pilot plants and test labs**
Our eyes and ears in the field

MIDDLE EAST & AFRICA (MEA)

Several new ANDRITZ offices have been established in the MEA region, offering sales and service expertise to emerging markets in Iran, the Emirates, Oman, and Pakistan as well as the countries throughout Africa, such as Nigeria, Kenya, Ethiopia, Ghana, Uganda, and Rwanda.

- Johannesburg, South Africa
- Ankara, Turkey
- Dubai, United Arab Emirates

ASIA-PACIFIC

ANDRITZ locations in Australia, India, and Vietnam provide local sales, service, engineering, and support to the feed and biofuel customers in their home countries as well as New Zealand, India, Sri Lanka, Nepal, South East Asia, and Bangladesh.

- Carrum Downs, Australia
- Chennai, India
- Ho Chi Minh, Vietnam
- Dhaka, Bangladesh



**Worldwide, more than
25% of the dies and rolls
manufactured for
industrial pelleting
are made by ANDRITZ.**

ANDRITZ

ENGINEERED SUCCESS



GLOBAL SUPPLIER – LOCAL PRESENCE

With sales, service, engineering, manufacturing and production sites located all around the world, ANDRITZ Feed and Biofuel is truly a global organization with a local presence. ANDRITZ is vital to ensuring a reliable global supply of aqua feed, animal feed, pet food, and biofuel. With full process lines accounting for half the world's production of aqua feed and biomass alone, we continuously support leading producers in achieving the highest levels in safety, quality, and control from feedstock to final product.

How can we help grow your business?

ANDRITZ Feed and Biofuel A/S

Glentevej 5-7
6705 Esbjerg, Denmark
p: +45 72 160 300
andritz-fb.dk@andritz.com

AUSTRALIA

p: +61 3 8773 4888
andritz-fb.au@andritz.com

CHINA

p: +86 21 5774 5781
andritz-fb.cn@andritz.com

ITALY

p: +39 (0445) 575 695
andritz-fb.it@andritz.com

TURKEY

p: +90 232 570 38 00
andritz-fb.tr@andritz.com

BANGLADESH

p: +880 22 2226 4800
andritz-fb.bd@andritz.com

DUBAI

p: +971 4 299 5555
andritz-fb.uae@andritz.com

MEXICO

p: +52 443 323 1530 ext 364
andritz-fb.mx@andritz.com

UK

p: +44 1482 825119
andritz-fb.uk@andritz.com

BRAZIL

p: +55 47 3387 9146
andritz-fb.br@andritz.com

FRANCE

p: +33 24 75 06 364
andritz-fb.fr@andritz.com

NETHERLANDS

p: +31 40 2627777
andritz-fb.nl@andritz.com

USA

p: +1 570 546 1253
andritz-fb.us@andritz.com

CANADA

p: +1 519 676 7057
anbosales@andritz.com

GERMANY

p: +49 2104 9197 0
andritz-fb.de@andritz.com

POLAND

p: +48 60 906 1037
andritz-fb.pl@andritz.com

VIETNAM

p: +84 8 6253 9434
andritz-fb.vi@andritz.com

CHILE

p: +56 2 24624608
andritz-fb.cl@andritz.com

INDIA

p: +91 87544 15287
andritz-fb.india@andritz.com

SOUTH AFRICA

p: +27 82 781 0808
andritz-fb.za@andritz.com

[ANDRITZ.COM/FT](https://www.andritz.com/ft)

JOIN US ON SOCIAL MEDIA



All data, information, statements, photographs and graphic illustrations in this leaflet are without any obligation and raise no liabilities to or form part of any sales contracts of ANDRITZ AG or any affiliates for equipment and/or systems referred to herein. © ANDRITZ AG 2021. All rights reserved. No part of this copyrighted work may be reproduced, modified or distributed in any form or by any means, or stored in any database or retrieval system, without the prior written permission of ANDRITZ AG or its affiliates. Due to legal requirements, we must inform you that ANDRITZ AG processes your data for the purposes informing you about the ANDRITZ GROUP and its activities. Find out more details about our data privacy declaration and your rights under the data protection legislation on our website: [andritz.com/privacy](https://www.andritz.com/privacy). ANDRITZ AG, Stattegger Strasse 18, 8045 Graz, Austria.



1900 GB