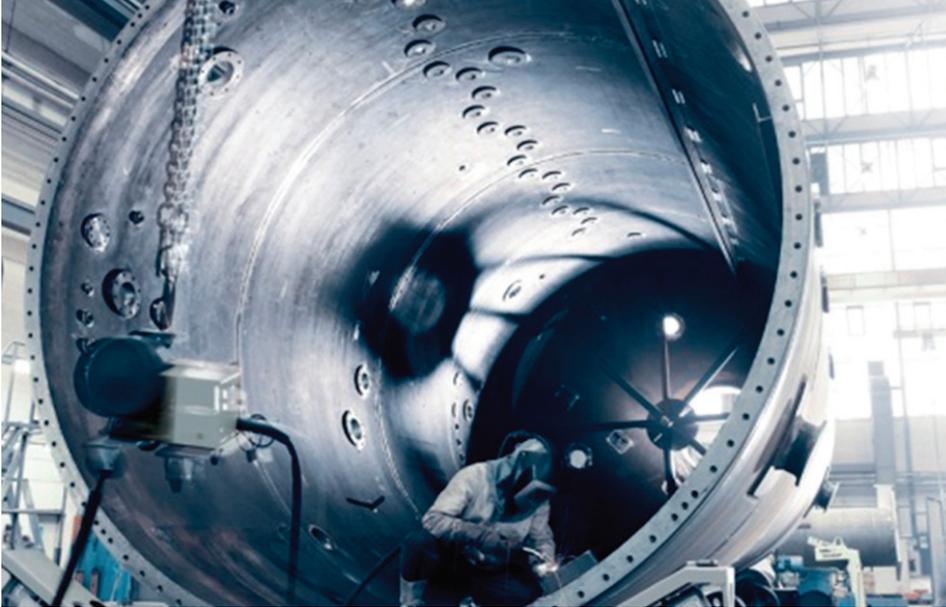


ANDRITZ Feed & Biofuel Technologies

Company profile

ANDRITZ GROUP

World market leader



◀ SEPARATION and Feed & Biofuel Technologies

▼ HYDRO



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



▲ PULP & PAPER

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.



▲ METALS

SEPARATION and Feed & Biofuel Technologies

Equipment for solid/liquid separation for municipalities and various industries; systems and equipment for production of feed and biofuel pellets.

In addition, ANDRITZ offers technologies for certain other sectors including automation, machinery for nonwovens and plastic films, steam boiler plants, biomass boilers and gasification plants for energy generation, flue gas cleaning plants, plants for the production of panelboards (MDF), thermal sludge utilization, and biomass torrefaction plants.

ANDRITZ GROUP overview:

Headquarters: Graz, Austria

Employees: approx. 25,000

Global presence: 250 production sites
and service/sales companies worldwide

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

Headquarters: Graz, Austria



ANDRITZ Feed & Biofuel Technologies

Your experienced partner

ANDRITZ Feed & Biofuel Technologies is one of the world's leading suppliers of technologies, systems and services for advanced industrial equipment for the animal feed, aqua feed and pet food industries, and for the biofuel pelleting industry.



We are strongly committed to excellent performance and quality of our products and to being a strong partner for our customers. We have delivered products and plant solutions since the 1960s and have gained extensive knowledge and insight into the demands of the specific feed and biofuel markets.

Our focus is on innovation and keeping up with new technological developments. We always strive to provide our customers with the newest technologies that will ensure better and more efficient production, mini-

mizing operation costs, maximizing energy efficiency and environmental protection, and giving our customers a competitive advantage.

” Product and plant solutions since the 1960s

Products and solutions

Single units and process solutions

When choosing products and solutions from ANDRITZ Feed & Biofuel Technologies, you will have a qualified and experienced partner with the ability to assist you all the way from the start to the finished product. We want to be a complete partner and supplier for our customers and therefore 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 products and 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





Feed technologies

From raw material intake to finished feed bagging

ANDRITZ Feed & Biofuel Technologies provides processing machines and equipment from raw material intake to finished feed bagging. Our pelleting and extrusion plants are designed with special attention to food safety and traceability, and in addition, hygiene and regulations requirements are also in high focus.

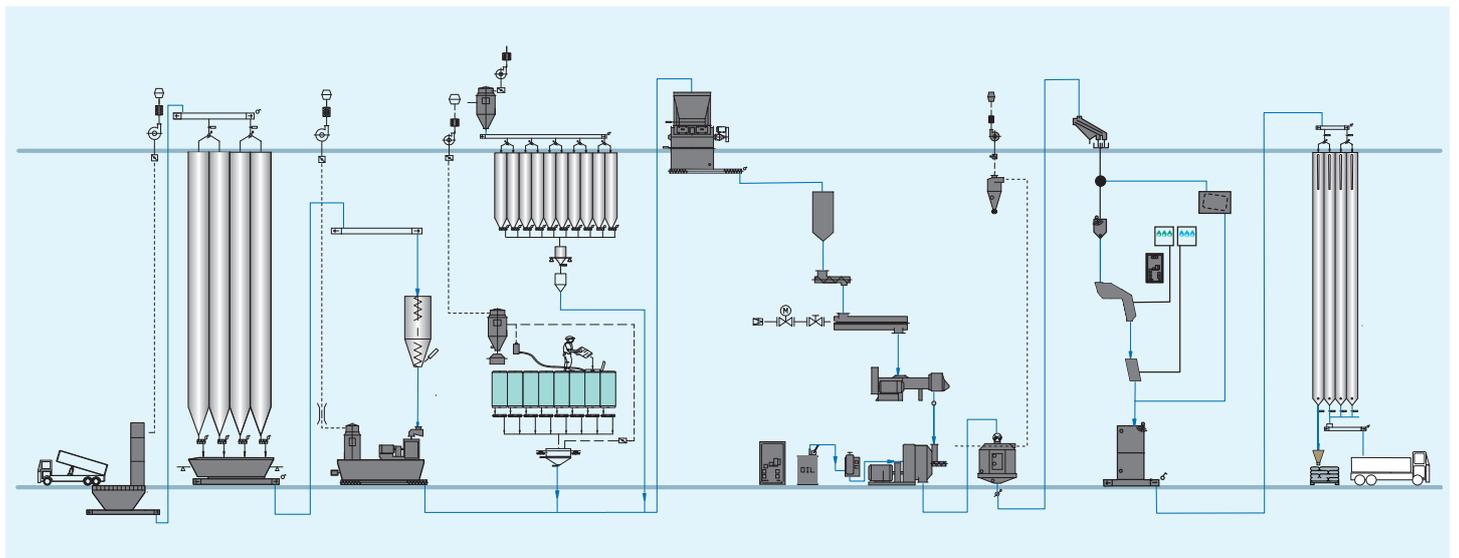


Animal feed processing

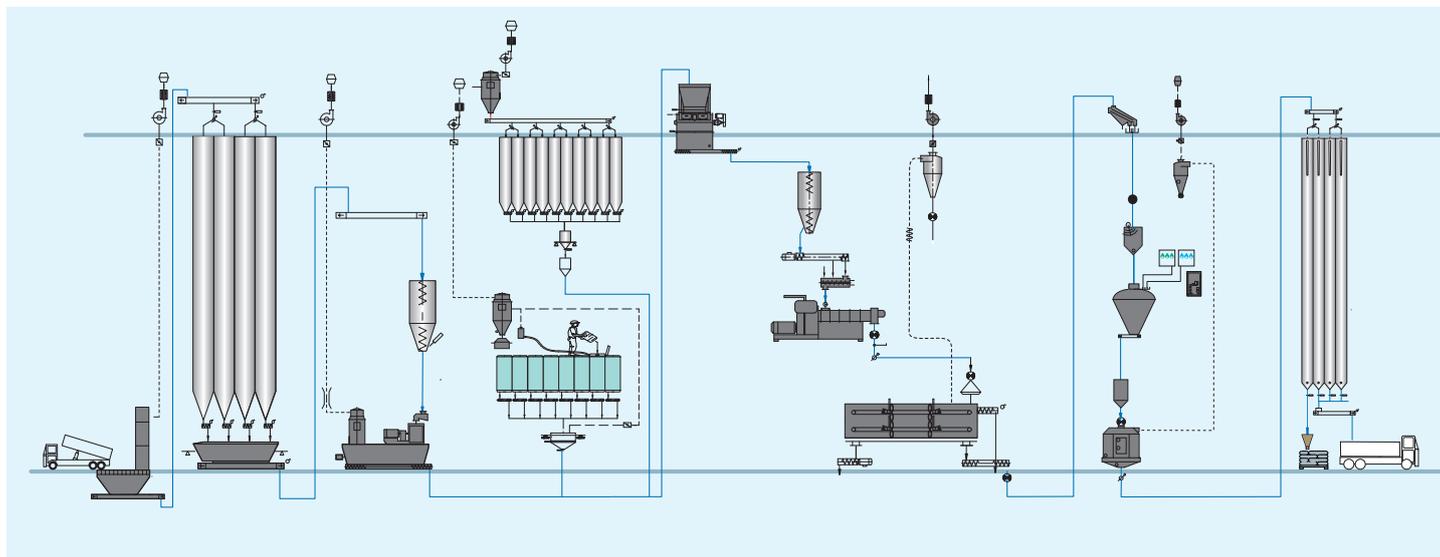
Industrially produced animal feed is undergoing continuous processing and quality improvement to keep up with the effectiveness of the agricultural industry as well as the continuously increasing focus on food safety and traceability.

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.

Animal feed processing flow



Aqua feed and pet food processing flow



Aqua feed processing

The fish farming industry is experiencing substantial growth in all regions of the world, creating a higher demand for high-quality fish feed. The key to successful fish farming lies in correctly adapted feed formulas, controlled homogenous content, and exact physical properties.

It is essential to consider the feed characteristics for the specific species of fish. The extruder accounts for this key process in the complex production line. ANDRITZ offers unique extrusion programs for the production of all kinds of feed for fish and shell fish. The extrusion program ensures that the feed has the right physical properties – giving it the appropriate sinking abilities for the different species of fish.

Pet food processing

The pet food market is a large market undergoing constant development. The increasing consideration for the health and well-being of pets has set new standards

and higher demands in the pet food industry. Pet food is expected to come in many different shapes, colors, and flavors to a greater extent.

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

“ One of the world's leading suppliers of production plants, technologies, systems and services for the animal feed, aqua feed and pet food industries, and for the biofuel pelleting industry.



Biofuel and waste pelleting

Competence in pelleting of recycling products

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 each and 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 wet and dry green wood prior to the pelleting process.

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.

Advantages of pelleting:

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

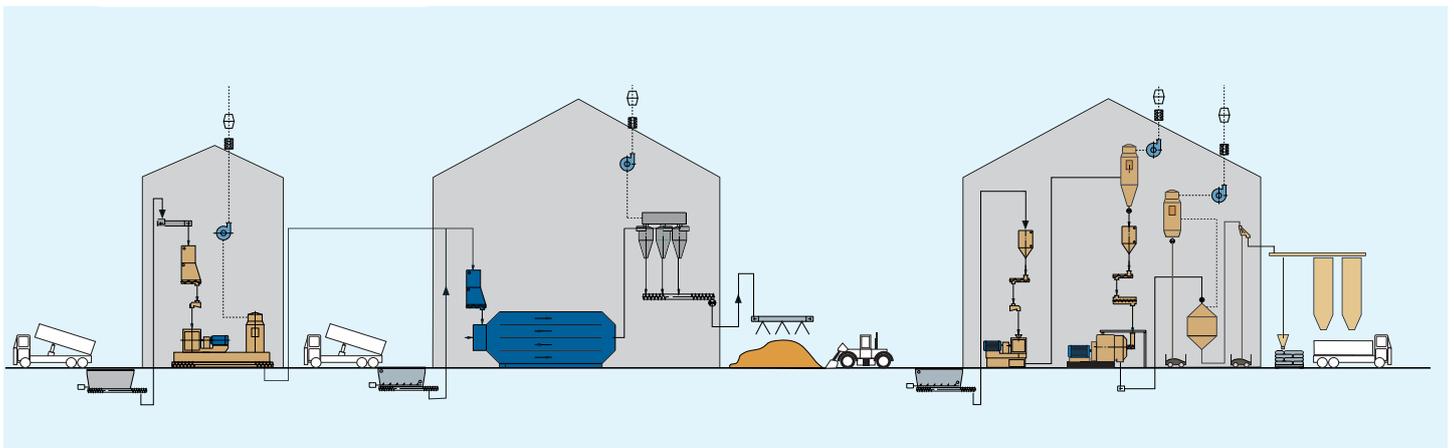
Raw materials used for biomass pelleting:

- Wood sawdust
- Bark
- Wood chips
- Straw

Waste pelleting technologies

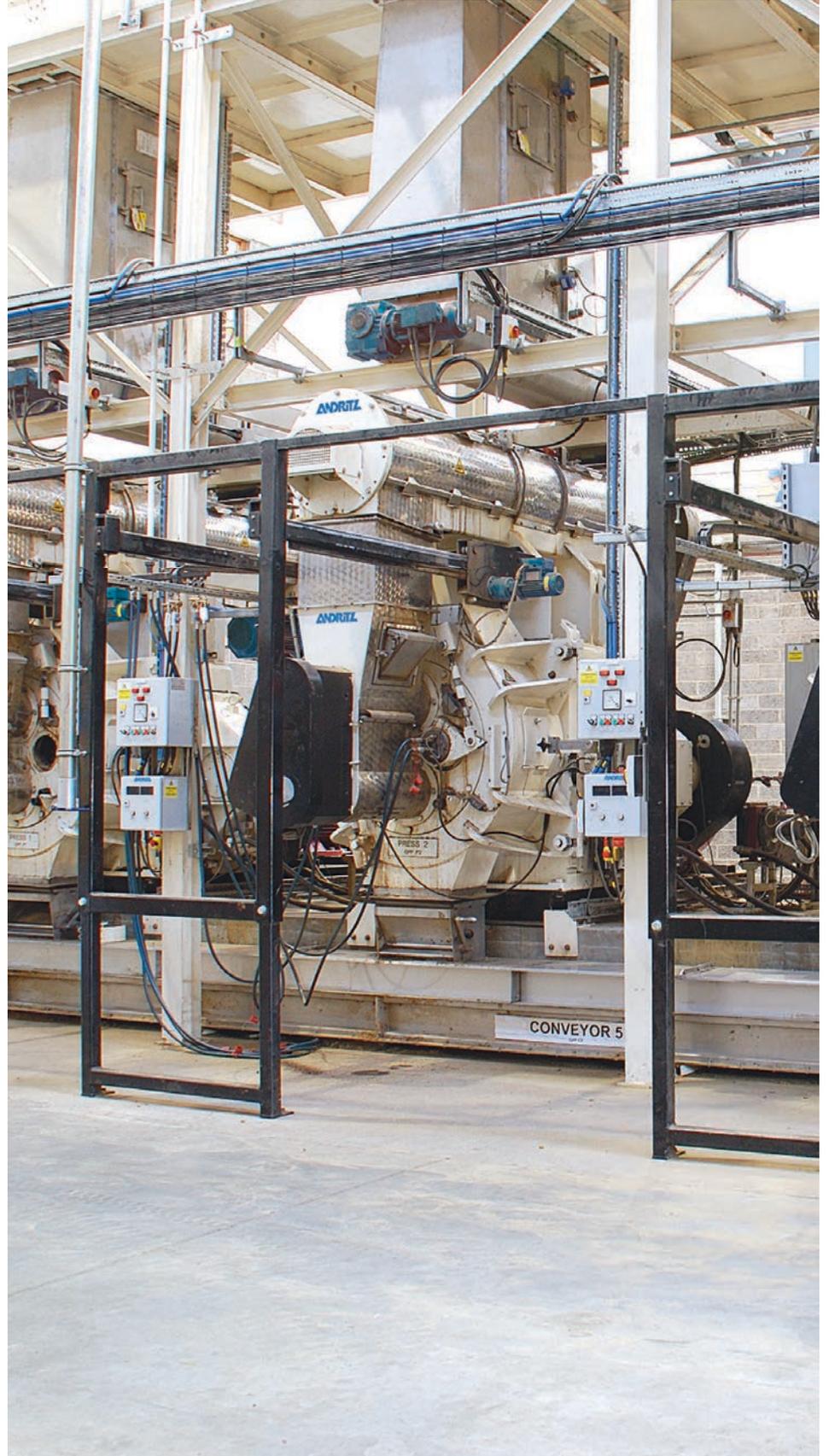
In recent years, the increasing focus on renewable energy has strongly enhanced the interest in plants producing pellets from waste material such as plastics, paper/labels, cardboard, sludge, industrial waste, chemicals, and stabilizers.

Renewable energy can also be based on liquid biofuels – for example bioethanol. Bioethanol can be made from several different types of foods, such as sugar beets, corn, and potatoes, but can also be made from straw, wood, and wood chips.





” ANDRITZ offers complete heavy-duty solutions for the production of solid and liquid biofuel and waste pellets



ANDRITZ aftermarket

Service and maintenance

Our excellent aftermarket services and support are what sets us apart from our competitors. At ANDRITZ, we work together with our customers to maximize performance, efficiency, and value of their equipment. We have a broad range of analytical tools, maintenance programs and repair services to help you reach a cost-effective solution. Whether it involves tuning, repair, replacement, optimization or upgrade of your equipment, we have the right solution for you.

We offer

We offer a broad range of aftermarket services, which includes:

- Services, support, and follow-ups
- Spare and wear parts
- Repairs
- Process optimization
- Training of plant operators

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

Maintenance programs

Regular maintenance on a preventive basis has proved to be cheaper than waiting for breakdowns to occur. ANDRITZ'S preventive maintenance program defines all daily, monthly, and annual maintenance procedures, such as cleaning, oiling, and machine part replacements. We will assist you with the planning of annual maintenance work, which includes assessment of maintenance shutdown and inspections. ANDRITZ offers a complete portfolio of contract maintenance services. The contracts range from regularly scheduled inspections of key machinery and components to preventive maintenance at prearranged intervals to turnkey agreements for maintenance and repairs for which everything can be covered at a fixed price. All of our contracts are customized to meet the specific requirements and needs of your feed plant.

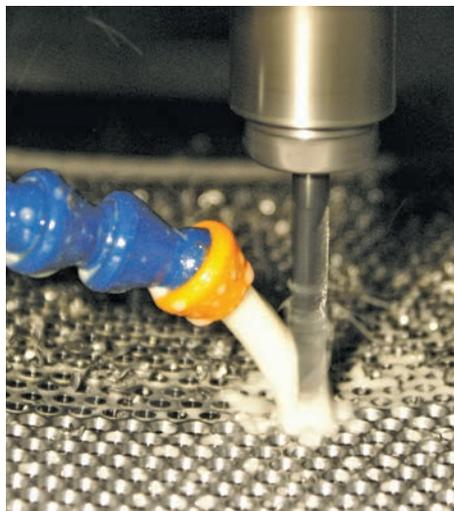
Rebuilds, upgrades and optimization services

To achieve higher capacity, better product quality, lower costs, and extended equipment life cycle, we provide rebuilds, upgrades, and optimization services for installed equipment. As an extension to our service capabilities, we manufacture and stock a full range of engineered wear products in a warehouse near your company.

Field services

We offer excellent field services, where our service specialists come to your plant to provide assistance. The depth and experience of our field service specialists is unmatched. This experience is backed by the full knowledge and technical support that only the equipment manufacturer can provide. Our ANDRITZ service technicians are engineers, electricians, and mechanical experts – all competences to ensure a high-quality service on your equipment. Given the increasing complexity and developments of modern machinery and technology, it is reassuring for our customers to know that our specialists are trained and kept up-to-date about the equipment on a regular basis.

▼ Together, we make a difference



◀ We have a broad range of analytical tools, maintenance programs, and repair services to help you reach a cost-effective solution.



Repair services

ANDRITZ makes a considerable investment in sustaining its global service network to ensure that all customers are supported by highly qualified personnel with the best tools available. Among other things, we have fully equipped machine shops to refurbish dies and rolls to the highest OEM standard. We always use genuine replacement parts that are certified to our strict quality requirements – this is to ensure the reliability and durability of our customers' equipment.

Service and maintenance

There are many benefits of keeping up with service and maintenance of your equipment:

- Maximizing production
- Reliability and cost efficiency
- Reduced life cycle costs
- Short and effective shutdowns
- Improved energy efficiency



Where to find us

Global supplier – local presence

ANDRITZ is truly a global organization – but also with local presence. We are represented all over the world. The global market for feed technologies is served from five main locations:

- Esbjerg, Denmark
- Sanshui, Guangdong Province, China
- Geldrop, Netherlands
- Muncy, PA, USA
- Humenné, Slovakia

In addition, we operate from several strategic regional sales, engineering, and service locations in China, Vietnam, India, Australia, Mexico, Venezuela, Brazil, Chile, France, the UK, and Germany – and are also represented locally by agents and distributors in many other markets.



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