



FEED & BIOFUEL

BIOMASS PELLETING TECHNOLOGIES

SUSTAINABLE ENERGY FOR THE FUTURE

A large, detailed photograph of a pile of biomass pellets, which are cylindrical and light brown in color, occupies the bottom half of the page. The pellets are piled together, creating a textured surface.

ANDRITZ

ENGINEERED SUCCESS

ANDRITZ FEED & BIOFUEL

ANDRITZ Feed & Biofuel is one of the world's leading suppliers of process solutions, technologies and services for the animal feed, aqua feed, pet food, and biofuel industries. The technologies and services focus on maximum utilization of raw materials, increased production efficiency and sustainability as well as lowest possible total cost of ownership, while achieving the highest levels of safety, quality and control, from feedstock to final product.

HOW
CAN WE HELP
FUEL YOUR
BUSINESS?

Boosting your business

ANDRITZ equipment combined with our extensive process knowledge, experience in the field, and local service experts ensures your process requirements are met with maximum return on investment.

ANDRITZ supplies solutions for a single piece of processing equipment, a processing step, or stack, from brown to green field installation, focusing on delivering the most impactful solutions for biomass processors.

In addition, ANDRITZ can supply complete plant solutions in all regions.

When managed correctly, biomass is a sustainable fuel that can deliver a significant reduction in net carbon emissions as compared to fossil fuels. The amount of CO₂ neutral fuel produced with equipment from ANDRITZ replaces almost five million tons of oil per year.

SEVERAL DIFFERENT RAW MATERIALS CAN BE USED FOR BIOMASS

WOOD-BASED BIOMASS AND RESIDUES

- Sawdust
- Chips
- Logging residues
- Logs
- Bark

WIDE RANGE OF AGRO RESIDUES

- Wheat straw
- Paddy straw
- Bagasse
- Cotton stalks
- Garden waste and many more

RAW MATERIAL SOURCES

- Timber industry
- Sawmills
- Paper industry
- Furniture industry
- Building industry
- Agricultural by-products

SOME OF THE ADVANTAGES OF PELLETING

- Simple handling
- Reduced transport cost
- Better storage capabilities
- Homogenous fuel of identical standard
- Environmentally friendly
- CO₂ neutral fuel

GRINDING AND PELLETING

ANDRITZ makes grinding and pelleting equipment for converting forestry and agricultural by-products into uniform, densified fuel pellets for large-scale power and heat generation, and for heating private homes.

KEY PROCESSING MACHINERY

With the goal to fight climate change, industries and private households are striving towards a carbon neutral future. Sustainable biomass fuels play a key role in the renewable energy mix required to achieve the target of net zero CO₂ emissions established throughout the globe.

ANDRITZ design solutions are centered around highly advanced key machinery for wood grinding and pelleting, including chippers and dryers for the processing of wet and/or green wood prior to the pelleting process.



- A** Sawdust
- B** Bark
- C** Wood chips
- D** Straw

Process flow for wood-based biomass processing

PRE-GRINDING SIZE REDUCTION

Raw material intake: Wood chips
Wood chips supplied in sizes of 50+ mm must be reduced in a chipper and hammer mill before entering the drying process. The use of the 43" hammer mill in the pre-grinding stage boosts particle size distribution using an energy-efficient rotor design and comes with replaceable wear liners for the grinding chamber.

DRYING

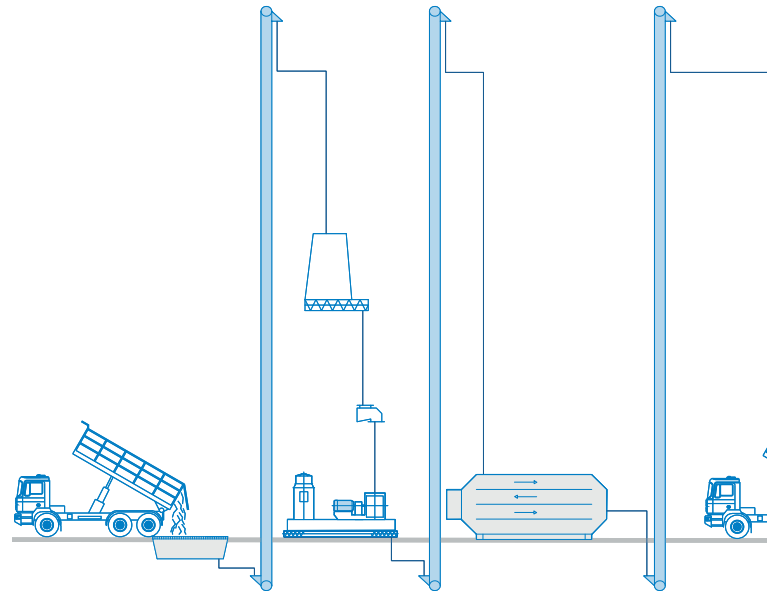
Raw material intake: Sawdust
A rotary drum drying or low temperature belt drying system dehydrates raw materials before they enter into the fine-grinding process. To ensure the product is dried evenly, the raw material is conveyed pneumatically through a stream of hot gases and dried in a convective process until it reaches a residual moisture content of approximately 10–12%.

FINE-GRINDING

By finely grinding the raw materials in the 43" fine grinding hammer mill, it is possible to achieve the most homogeneous pelletizing raw material. The large surface area and the open fibers of the ground product facilitate steam absorption in the cascade mixer. Steam and high temperature soften the lignin in the wood, which allows pelleting to take place without the addition of binders. The 43" hammer mill variable hammer speed optimizes the grinding process by carrying the wood meal on to a cyclone or filter for separation.

PELLETING

ANDRITZ offers four types of biomass pellet mills. All four ensure high output and effective control over pellet quality. The dimensions of these pellet mills have been fixed to withstand great force



CHIP INTAKE

CHIP GRINDING

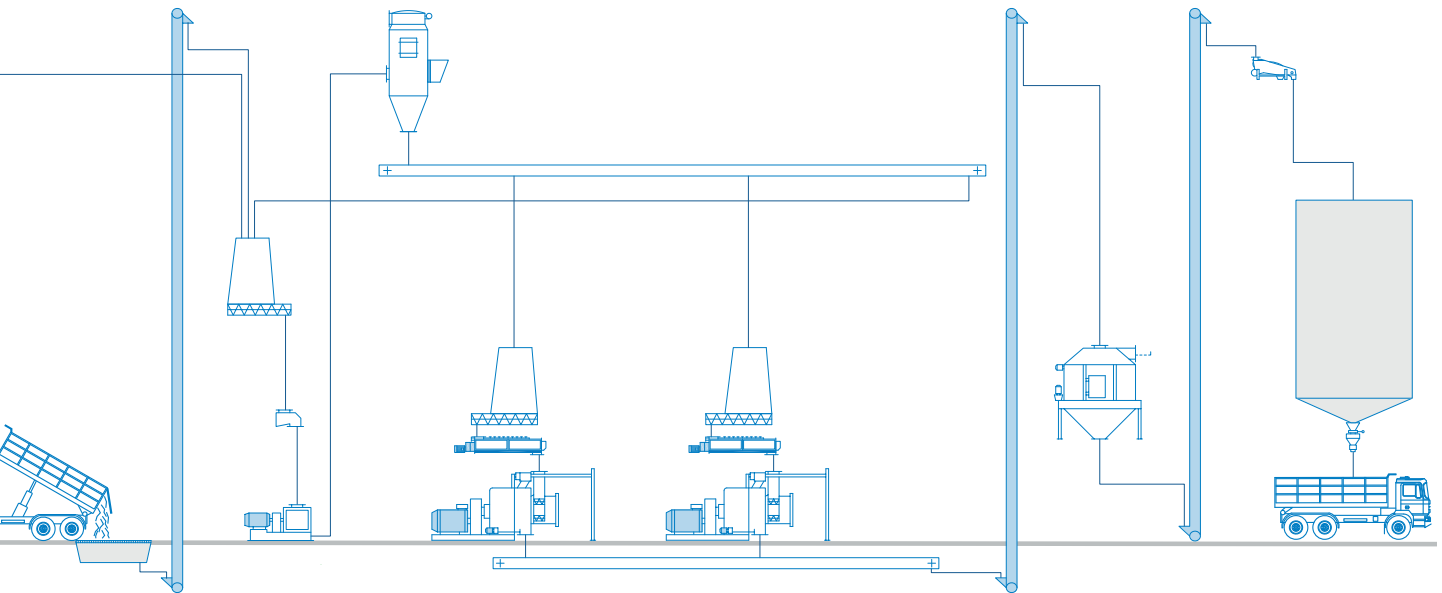
DRYING

SAWD

and come with replaceable wear parts. The level of process control obtained by using the ANDRITZ pellet mill guarantees high flexibility and optimum energy utilization. The energy consumed to operate the pellet mill and heat the steam corresponds to 2.5-3% of the wood energy content.

COOLING

The intense friction applied in the die during the pelleting process causes additional heat to develop. Coolers are in place to reduce critical temperatures before sifting, packing and storing the wood pellets. ANDRITZ coolers utilize the surrounding air to lower the temperature of the pellets, resulting in a pellet temperature 5 to 10°C above room temperature. The diameter of wood pellets and the holding time in the cooler are crucial in determining the size of the cooler needed.



FINAL SIFTING

Finally, the pellets pass through a sifter to remove crumbs and dust which get recirculated back into the process.

PROCESS CONTROL

ANDRITZ offers modularly designed, computerized controls for individual key machines, complete processing channels, and complete plant controls.

**More than 50% of the world's biomass pellets are produced by ANDRITZ.
How can we help fuel your business?**

GRINDING

Multimill B



43"



PELETING

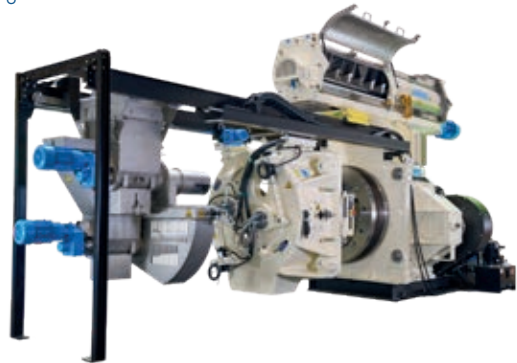
SVPB65



LM



PM30-6



Biomax



By converting wood-based biomass, agro-residues and energy crops into compressed pellets, density can be substantially increased from 60 kg/m³ to 650 kg/m³, which generates significant savings on transport, storage, and handling, as well as a variety of other environmental advantages.

LEADING MARKET SHARE

With over 350 reference plants, ANDRITZ is a leader in biofuel pelleting technology, supplying and supporting biomass pellet producers worldwide. In addition, with a market share of over 50% since pioneering biofuel pelleting in the 1980s, ANDRITZ pellet mills produce more than 50% of all biofuel pellets globally.

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 nonstop biofuel production.



Keep your business growing with our global service network

Our aftermarket sales, service and support set us apart from our competitors. Our partnership does not end with the purchase or installation of our equipment; it extends to ongoing maintenance, service, and support of all ANDRITZ Feed and Biofuel processing equipment, as well as all other manufacturers' product lines.

OUR SERVICES

Our expertly trained team of service professionals are ready to help with:

- After-sales services, support, and follow-ups
- Spare and wear parts, maintenance, and repairs
- Process optimization
- Training of plant operators

FIELD SERVICES

We offer our customers excellent field services, where our service technicians come to your location for assistance. The vast experience of our field service specialists is unmatched – backed by the full knowledge and technical support that only the equipment manufacturer can provide.

BENEFITS

There are several benefits to be gained from continuous upgrades, optimizations, and services on your equipment:

- Maximum production
- Process knowledge and experience
- Reliability and cost efficiency
- Reduced life cycle costs
- Short and effective shutdowns
- Improved energy efficiency



AFTERMARKET

Service and support



GLOBAL SUPPLIER – LOCAL PRESENCE

ANDRITZ Feed & Biofuel Technologies is truly a global organization – with local presence. We are represented all over the world. The global market is served from five main locations: Denmark, China, Netherlands, USA, and Slovakia.

In addition, ANDRITZ Feed & Biofuel Technologies operates from several strategic regional sales, engineering, and service locations in Australia, Brazil, Chile, China, Dubai, France, Germany, India, Mexico, the UK, Venezuela, and Vietnam – and is also represented locally by agents and distributors in many other markets.

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