



Wood Shredding Line
Jämtkraft Case Study





Increased recycled wood use from 20% to 75%, reduced fuel costs, and improved boiler performance for efficient district heating to 50,000 residents.



Two-stage shredding that handles diverse biofuels at 70 tons per hour with a consistent P63 output.



Winter mode and dust suppression systems provide reliable operation in extreme Swedish weather.

AZORTUM



Background

For over 130 years, Jämtkraft has kept the city of Östersund warm and supplied with reliable district heating, even through the harshest Nordic winters. As the region continues to grow, so does the demand for efficient and sustainable heating solutions.

To meet this demand, Jämtkraft built a new combined heat and power (CHP) plant to replace worn-out boilers from the 1980s. This new facility required a high-capacity wood shredding line capable of processing a wide range of biofuels to keep 50,000 residents warm and supplied with electricity.

Their existing shredder couldn't meet the higher throughput requirements, suffered frequent downtime, and struggled to handle the diversity of fuel types needed for the new plant.



Meeting Östersund's Growing Energy Demands

Jämtkraft's new shredder line had to meet three critical requirements.

First, it needed exceptional fuel flexibility, with the ability to process almost every type of biofuel available on the market, from dry sawdust and bark to wet forest residues, such as tips and branches from thinnings or clear cuts. The line also had to handle waste wood, off-spec boards unsuitable for carpentry, and pulpwood not fit for the pulp industry, ensuring each fuel type could be processed efficiently.

Second, it had to deliver consistent output quality, producing a uniform P63 chip size and maintaining stable moisture levels, so that the boilers run smoothly and emissions are low, particularly during peak winter demand.

Finally, the system had to ensure high uptime and operational safety in the challenging Nordic climate, performing reliably through freezing winters and dry, dusty summers while remaining safe to operate and easy to maintain for operators.



→ Area 2800 sqm

→ Installed power 1560 kW

Output materials:

- Biofuel (P63)
- Fe-metal





Designing for Flexibility, Consistency, and Uptime

Jämtkraft partnered with Azortum to design, deliver, and install a high-capacity wood shredding line tailored to their operational needs and local climate conditions.

The solution included →



1

Two-Stage Shredding for Maximum Flexibility

A combination of pre-shredding and fine-shredding stages allows for quick adjustments to output fraction size. Operators can switch between coarser and finer shredding by changing shredder programs and screen sizes, enabling the plant to handle fluctuating fuel quality and market availability.

2

Advanced Material Handling & Monitoring

Mechanical sensors at loading points detect potential blockages early, automatically stopping the line to prevent downtime. This improves operational safety and protects equipment.

3

Designed for Harsh Winters and Dry Summers

WINTER MODE: Built to keep the line running through Sweden's cold, snowy winters, when fuel demand peaks and uninterrupted shredding is essential. By addressing freezing, one of the biggest operational challenges, it ensures the plant maintains full capacity precisely when it's needed most.

WEATHER-PROTECTED INSTALLATION: Half of the shredder line is housed indoors, reducing snow and ice exposure. Electrical systems are installed in heated marine containers or equipped with individual heating units for reliable performance in sub-zero temperatures.

DUST CONTROL: A misting system and aspiration unit reduce airborne dust during summer operations when input material is dry, improving safety and working conditions.

A photograph of an industrial facility, likely a wood processing plant. The scene is dominated by large, vertical metal pipes and a complex network of steel beams and ladders. In the foreground, a large metal structure is being lifted by a crane, with a license plate-like label 'SAEBA11' visible. Below the structure, a white container with the 'AZ' logo and the word 'AZORTUM' is visible. The lighting is warm and industrial, with a blue circular graphic overlay on the left side of the image.

Operational Impact

- **Throughput:** 70 tons/hour at P63 fraction.
- **Increased Fuel Range:** Capable of processing materials that other operators reject, allowing sourcing of lower-cost materials without compromising output quality.
- **Higher Waste Wood Utilisation:** Supports Jämtkraft's target of increasing recycled wood use from 20% to 75%.

Collaboration Built on Trust

From the first meeting, which we held in the middle of a snow blizzard, Jämtkraft and Azortum established a relationship built on trust, open communication, and shared objectives.

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We chose to work with Azortum, because they had good flexibility, high capacity, and a high focus on the working environment for the operators and the guys running the plant,

Daniel Iversson,
Biofuel Project Manager at Jämtkraft.



In his words, Jämtkraft chose Azortum because of:

- Proven flexibility in design and delivery.
- High capacity performance tailored to their needs.
- Strong focus on operator safety and working environment.
- Ongoing after-sales support and upgrades



The new shredding line ensures Jämtkraft can meet the growing heating and electricity demands of Östersund while maintaining high efficiency, operational safety, and sustainability.



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