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# Metsä Group's Äänekoski bioproduct mill



*Unloading pine pulpwood at the Äänekoski bioproduct mill*

Metsä Group's Äänekoski bioproduct mill started up in September 2017. Costing EUR 1.2 billion, it is Finland's biggest-ever industrial investment.

The new mill's main parameters are as follows:

- Wood intake – 6.5 million m<sup>3</sup>
- Number of mill employees – 150
- Estimated number of jobs across the value chain – 2 500
- Pulp production capacity – 1.3 million tonnes per year
- Energy self-sufficiency – 240 percent.

This fact sheet describes how this innovative mill aims to be a “forerunner of the sustainable bioeconomy”.

## Metsä Group - a forest owners' cooperative

Metsä Group started as a private company, Metsäliitto Ltd, in 1934, but it became a cooperative in the aftermath of the Second World War with capital from tens of thousands of small forest owners. By the end of the 1950s the cooperative had acquired sawmills, timber impregnation plants, plywood mills and a pulp mill.

Metsä Group was formed in 2012 to give the cooperative's companies a single identity. The Group now purchases 30 million m<sup>3</sup> of industrial roundwood annually, a large proportion of which comes from members of the cooperative. Of the total, 21.8 million m<sup>3</sup> is used for industrial purposes in the group's plants, and the remainder (8.2 million m<sup>3</sup>) is sold to other processors, mainly independent Finnish sawmills.

## Contribution to the Bioeconomy

The Äänekoski bioproduct mill has unprecedented energy efficiency and makes the fullest possible use of all wood and residues. When in full production, this enormous pulp mill will achieve 240 percent energy self-sufficiency, enabling it to sell heat and "green" electricity to other industries and the national grid.

The Äänekoski bioproduct mill will build on existing value chains in the forest sector. The City of Äänekoski is working to attract partners and will itself be a buyer of green electricity and steam for district heating from the mill. Metsä Fibre is concentrating on the company's core product and is building a network of synergetic partners. In this way, the mill will form the centre of an industrial ecosystem (see table).

**Table: Present and planned side-stream products from pulp and paper production at the Äänekoski bioproduct mill**

Product	Manufacturer
1. Precipitated calcium carbonate	Specialty Minerals Nordic
2. Tall oil and turpentine	Metsä Fibre
3. Fertilizers	Biolan, Kekkilä, Soilfood Fortum
4. Bioenergy (electricity and heat)	Metsä Fibre
5. Textile fibres from pulp	Under development
6. Sulphuric acid	Metsä Fibre
7. Product gas	Metsä Fibre
8. Lignin-based products	Under development
9. Carboxymethyl cellulose (CMC)	CP Kelco
10. Bio-methane	Eco Energy SF

*Note: Sawlogs supplied to sawmills, and their respective bio-products, are not included.*

The Äänekoski bioproduct mill will use 6.5 million m<sup>3</sup> of pulpwood and chips annually. Eighty-six percent of its roundwood is independently certified as sustainably managed and the remainder is, at a minimum, traceable to its origin.

Wood is mainly procured within a 150 km radius of the mill, although some is also imported from the Russian Federation and the Baltic states. Transport is mainly by rail, but a new concept of 30-metre-long trucks is also used, achieving a fuel reduction of 10 percent. A national infrastructure project has been fast-tracked to upgrade Highway E4 to facilitate the transport of finished products to export harbours.



*Metsä Group's mills are owned by private forest holders*

## Digital services

Three hundred Metsä Wood employees in 100 offices provide various online services to facilitate wood mobilization, including wood sales agreements with forest owners. The Track & Trace service allows customers to track their orders during manufacturing and delivery.



*Textile samples made from wood derivative fibres*

## Significant bioenergy production

Metsä Group produces 14 percent of Finland's total renewable energy (heat and electricity), with 23 of the Group's 35 production units featuring bioboilers and bioenergy production. Metsä Group operates according to the principle of cascaded wood use, whereby industrial roundwood is used primarily for forest products, and residues are used for energy only after recycling and recovery.

The Äänekoski bioproduct mill will use 0.75 terawatt hours in its operations and will sell 1 terawatt hour of green electricity to the grid. All this energy will be generated from biobased fuels.

The Äänekoski bioproduct mill will increase the share of renewable energy in Finland by more than 2 percent.



*Äänekoski bioproduct mill*

## Research and Development

Metsä Group is receiving funding from the European Union Bio-based Industry Consortium for three projects: LigniOx (lignin-based concrete plasticizer); Biomotive (composite-fibre automobile parts); and Bioefficiency (efficient, low-emission, biomass-based cogeneration plants).

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