Metsä Fibre
Strong fibre expertise
**Key figures 2013, continuous operations**

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>1,313 million euros</td>
</tr>
<tr>
<td>Result before tax</td>
<td>197 million euros</td>
</tr>
<tr>
<td>Personnel, year end</td>
<td>Around 900</td>
</tr>
<tr>
<td>Pulp capacity</td>
<td>2,460 million tonnes per annum</td>
</tr>
<tr>
<td>Wood consumption</td>
<td>12.5 million m3</td>
</tr>
<tr>
<td>Energy self sufficiency, electricity</td>
<td>144 %</td>
</tr>
</tbody>
</table>
Our pulp mills are located in Finland

**Joutseno**
- Capacity: 690,000 tonnes
- Wood consumption: 3.4 million m³
- ECF-bleached softwood pulp
- Personnel: 133

**Rauma**
- Capacity: 650,000 tonnes
- Wood consumption: 3.4 million m³
- ECF-bleached softwood pulp
- Personnel: 120

**Kemi**
- Capacity: 590,000 tonnes
- Wood consumption: 2.9 million m³
- ECF-bleached softwood and hardwood pulp
- Personnel: 169

**Äänekoski**
- Capacity: 530,000 tonnes
- Wood consumption: 2.4 million m³
- ECF-bleached softwood and hardwood pulp
- Personnel: 171

**Metsä Svir sawmill**
- Capacity: 250,000 m³
- Wood consumption: 500,000 m³
- Raw material: Spruce
- Personnel: 142
We operate in the international market

Pulp deliveries 2013

We are a Finnish forest industry company and we operate in the international market.

Our main market area is Europe. One quarter of Metsä Fibre’s pulp is sold to Asia.
Leading Bleach Softwood Kraft Market Pulp Producers in the World 2013/Q4 (excl. fluff, excl. dissolving pulp)

Metsä Group
International Paper
APP/Sinar Mas
Mercer International
Arauco
Ilmil Holding
Södra
Stora Enso
Canfor
Domtar

Source: Pöyry Management Consulting
Metsä Fibre’s end products

**Printing paper**
- Botnia Nordic Strong
  - Reinforcement pulp produced from northern softwood gives magazine paper desirable strength characteristics.

**Tissue paper**
- Botnia Nordic Pine
  - Made from northern softwood, this softwood kraft pulp is a versatile material for high-quality tissue and soft papers.

**Board**
- Botnia Nordic Birch
  - Made from northern hardwood, this short-fibre birch pulp is a special product suited for the manufacture of high bulk paperboard goods.

**Speciality products**
- Botnia Nordic Pine & Birch
  - Special pulp grades are suited for the manufacture of various specialty products, such as baking, release and thermal papers, and other special applications like CMC.

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We manage the entire value chain

- Fibre expertise
- Logistics and warehousing
- Partnership with key customers

12.2.2014

Metsä Fibre
The first next-generation bio-product mill in the world
The first next-generation bio-product mill in the world

- The biggest investment in the forest industry in Finland
  - EUR 1.1 billion
  - Annual pulp production 1.3 million tonnes (currently 0.5)
  - Use of wood 6.5 million m³ annually (currently 2.4)
  - Over 2,500 jobs in the whole value chain in Finland
  - Internal financing approximately 40 per cent

- Advantages
  - Efficient production of high-quality pulp
  - Integrated production of new bio-products
  - Resource-efficient way of using all production side streams

- Helps Finland to reach its targets for the use of renewable energy
  - Electricity generation 1 400 GWh/a
  - District heating and steam 7 000 GWh/a
  - Wood energy 1 200 GWh/a
## Demand for market pulp by region and end-product

<table>
<thead>
<tr>
<th>Demand</th>
<th>Printing and office papers</th>
<th>Tissue</th>
<th>Paperboard</th>
<th>Speciality products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole world</td>
<td>40%</td>
<td>30%</td>
<td>10%</td>
<td>20%</td>
</tr>
<tr>
<td>Europe</td>
<td></td>
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<tr>
<td>China</td>
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<tr>
<td>Rest of Asia</td>
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<td></td>
<td></td>
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<tr>
<td>North America</td>
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Bio-product mill – more than a traditional pulp mill

- Wood is refined into bio-materials, bio-energy, bio-chemicals and fertilizers sustainably and with great resource efficiency
  - Raw materials and side streams will be utilized 100 per cent as products and bioenergy
  - The mill will not use fossil fuels
  - Energy efficiency will be emphasized when choosing equipment and machinery
  - The operating model will be based on an efficient partner network
    - New products will be created in collaboration with various experts joining the network
    - Creates opportunities especially for small and medium-sized enterprises to produce innovative bio-products with high added value
Modern, energy-efficient pulp mill as the core
Bio-product mill’s product portfolio

Current products as the core:
- Bio-materials: high-quality pulp
- Bio-chemicals: tall oil and turpentine
- Bio-energy: bio-electricity, process steam, district heating, wood-based fuels

Potential new products:
- Bio-materials: custom-made pulp, lignin upgrades, new fibre products
- Bio-chemicals: raw materials for bio-plastics, fertilizers and process chemicals
- Bio-energy: bio-oil, methanol, bio-gas, product gas, ethanol
Maximal energy and resource-efficiency

- The bio-product mill will increase the share of renewable energy in Finland by approx. 2 percentage points
- Energy efficiency and clean technology (cleantech) will be emphasized when choosing equipment and machinery
  - The mill’s emission levels will be lower than allowed by Äänekoski mill’s current environmental permit
  - All production side streams and waste will be utilized as efficiently as possible
  - Material efficiency will be top in class
Wood supply
The amount of wood in the Finnish forests increases continuously.
The use of domestic wood can be increased sustainably

Source: Finnish Forest Research Institute
Aiming for operation in 2017

- Environmental Impact Assessment (EIA) and environmental permit process will be initiated immediately with the aim of completing them during the first quarter 2015
- The final investment decision will be made during spring 2015, so that the new mill could be operational in 2017
Joutseno Mill
Production process
Production

- Production capacity 690 000 tonnes ECF bleached softwood pulp

- Pulp grades:
  - Botnia Nordic Pine+ JNO
  - Botnia Nordic Strong+ JNO

- Exports 90%

- Market pulp 90 %

- Wood consumption 3.5 million m3 / year
Bio-Products

- Tall oil 19 000 t/a
- Turpentine 1 200 t/a
- Electricity sales 290 GWh (In 2012 households and agriculture in Lappeenranta used 252 GWh)
- Bark sales 150 GWh (in addition to the bark used in gasifying process)
48 MWh gasification plant

- Started in 2012.

- The gasification plant improves the efficiency of renewable energy usage by replacing the natural gas used with biofuel made from bark.

- Joutseno Mill is the first carbon dioxide-neutral facility in Finland during normal operations.

- The technology in the gasification plant is a new application in the Finnish pulp industry. In bark drying, this innovative and comprehensive solution uses surplus heat from the mill.

- The plant considerably improves the mill’s energy-efficiency and further improves the mill’s environmental performance.
48MWh gasification plant
Thank you!