NORTHERN BIOPRODUCTS TO THE WORLD

Metsä Group produces renewable products from northern forests that provide a substitute for the use of fossil-based raw materials. We use the best raw material in the world responsibly and wisely. We focus on wood supply and forest services, wood products, pulp, fresh fibre paperboard, as well as tissue and greaseproof papers. All our business areas have good growth and profitability outlooks. Metsä Group’s investments in 2015–2018 totalled EUR 2 billion, most of which related to investments in Finland.
YEAR 2018

SALES
EUR MILLION
5,709
+13% 2017: 5,040

INVESTMENTS
EUR MILLION
272

COMPARABLE OPERATING RESULT
EUR MILLION
849
+50% 2017: 566

PRODUCTION IN 8 COUNTRIES AND
36 PRODUCTION UNITS

COMPARABLE RETURN ON CAPITAL EMPLOYED
%
16.8
+37% 2017: 12.3

80% OF THE ENERGY USED IN PRODUCTION IS RENEWABLE

100% TRACEABLE WOOD

88% CERTIFIED WOOD

METSÄ GROUP

SALES* EUR 5.7 BILLION
RENEWABLE ENERGY 28.4 TWH
PERSONNEL 9,300

METSÄLIITTO COOPERATIVE | GROUP’S PARENT COMPANY | OWNED BY 103,000 FINNISH FOREST-OWNERS

METSÄ FOREST
WOOD SUPPLY AND FOREST SERVICES
Sales EUR 2.0 billion
Personnel 840
Holding Metsaliitto Cooperative 100%

METSÄ WOOD
WOOD PRODUCTS
Sales EUR 0.4 billion
Personnel 1,500
Holding Metsaliitto Cooperative 100%

METSÄ FIBRE
PULP AND SAWN TIMBER
Sales EUR 2.5 billion
Personnel 1,200
Holding Metsaliitto Cooperative 50.1%
Metsä Board 24.9%
Itochu Corporation 25.0%

METSÄ BOARD**
PAPERBOARD
Sales EUR 1.9 billion
Personnel 2,400
Holding Metsaliitto Cooperative 41.2%
share of votes 61.9%

METSÄ TISSUE
TISSUE AND GREASEPROOF PAPERS
Sales EUR 1.0 billion
Personnel 2,800
Holding Metsaliitto Cooperative 100%

* Internal sales eliminated
**Listed on Nasdaq Helsinki

METSÄ SPRING | INNOVATION COMPANY

CERTIFIED WOOD

OF THE ENERGY USED IN PRODUCTION IS RENEWABLE
YEAR 2018 HIGHLIGHTS

NEW TEXTILE FIBRES FROM WOOD

Metsä Spring Oy, Metsä Group’s innovation company, is building an industrial demo plant to produce new, wood-based textile fibres at the Äänekoski bioproduct mill area together with Itochu Corporation from Japan. The aim is to test the new technology to convert pulp into environmentally friendly fibres used in clothing, for example. When the mill starts up at the end of 2019, the preconditions that exist in Finland for building a larger textile fibre plant to provide ecological alternatives to cotton and oil-based materials will be explored.

INVESTMENTS IN TISSUE AND GREASEPROOF PAPERS

Several investment projects were completed at Metsä Tissue that improve the market position of tissue and greaseproof papers and the profitability of the operations. A new converting line was built at the Raubach mill in Germany, which will meet the growth in demand in Western European markets. Metsä Tissue also renewed the baking paper machine at the Düren mill in Germany and built a new tissue paper converting line at the Žilina mill in Slovakia.

WOOD TRADE AT A RECORD HIGH

Metsä Group has a wood supply organisation that covers the whole of Finland and is made up of over 300 experts who procure wood and provide forest management services. In 2018, the demand for wood was clearly greater than in previous years, and as a result, a record number of wood transactions were carried out. The growth of procured wood from 32 million to 36 million cubic metres just shows that our wood supply professionals can handle even the biggest of challenges.

ECO-BARRIER – A BIO-BASED COATING FOR PAPERBOARD

Metsä Board launched a new eco-barrier paperboard with a non-plastic treatment that improves grease resistance. This paperboard is an ecological alternative to take-away food and food packaging. The coating contains only bio-based ingredients and natural minerals, and the paperboard is recyclable, compostable and biodegradable. The light paperboard is safe to use in direct contact with food. In addition to being environmentally friendly, the new paperboard has remarkable benefits in terms of production efficiency.
Metsä Fibre began a pre-feasibility study on a significant investment in the bio-economy, the renewal of Kemi pulp mill. In the study, two alternatives are being evaluated: building a completely new bioproduct mill or modernising the existing one. Compared to the current mill, the new bioproduct mill would produce more renewable bioproducts and would be clearly larger in terms of capacity, impact on employment and wood consumption. To be completed by summer 2019, the prefeasibility study examines in particular the availability of wood, the infrastructure of the Kemi mill area and traffic connections. If the bioproduct mill would be the preferred option, the final investment decision is planned to be made in 2020 at the earliest.

Metsä Group’s Pro Nemus visitor centre was opened at Äänekoski bioproduct mill area. Pro Nemus features how Finnish wood is transformed into various products by combining virtual reality, industry and genuine nature.

The start-up of Metsä Wood’s birch plywood mill in Pärnu in autumn 2018 was an important milestone in the company’s extensive investment programme. The applications for birch plywood include transport and concrete formwork industries, which are growing as a result of accelerated urbanisation. In addition to the plywood mill, which employs 200 people, Metsä Wood is also investing in Kerto® LVL production in Punkaharju. The demand for Kerto LVL is reinforced by the increasing use of wood in construction. Fast, light and environmentally friendly material provides great opportunities for construction.
STRATEGY OF PROFITABLE GROWTH

The world’s population is growing and competition for energy and natural resources is becoming tighter, which is why resources must be used more efficiently. As a forerunner of the bioeconomy, the changes in the operating environment create versatile opportunities for Metsä Group.

Metsä Group is in a phase of strong, profitable growth. Our business is based on renewable raw materials and recyclable products, in which wood from northern, sustainably managed forests and our profound expertise provide a competitive advantage. We focus on wood supply and forest services, wood products, pulp, paperboard as well as tissue and greaseproof papers.

We develop our operations sustainably, always in line with economic, social, as well as ecological aspects. We improve the growth of forests, expand our industrial operations sustainably and contribute to the shift from fossil products to renewables. The way we see it, wood is the solution to many challenges in the future.

NORTHERN WOOD

Climate change concerns us all, and our future must be based on the use of renewable resources. Northern wood is the world’s best renewable raw material and the core of our business. We ensure that the wood we use comes from sustainably managed forests. Forests, that grow more than they are used. Most of the wood we use comes from our Finnish owner-members’ forests.

COMPETITIVE PRODUCTION

As a result of systematic investment programmes, our production units are cutting edge of the industry, be the measure environmental performance, energy efficiency or profitability. We invest in fossil free mills and world-class resource efficiency. We develop our operations efficiently all business areas together as a unified Group.

PRODUCTS AND NEW INNOVATIONS

Our carbon storing products made from renewable raw materials offer sustainable solutions for global challenges. We aim to provide our global customers with a first-class experience through close cooperation and with the best digital tools.

We focus on market-based product development by expanding our current product portfolio and investing in new business opportunities through our innovation company Metsä Spring, for example.

PEOPLE

Our operations are based on continuous improvement, which gives our personnel the opportunity to increase their own competence and discover new strengths. The majority of our personnel’s development is made up of on-the-job learning which we support through job rotation and encouraging multi-skilling. Good leadership is the cornerstone of our success.
PURPOSE
Advancing bioeconomy and circular economy by efficiently processing northern wood into first-class products.

VISION
The preferred partner in developing sustainable business.

VALUES

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<tr>
<th>RELIABILITY</th>
<th>COOPERATION</th>
<th>RENEWAL</th>
<th>RESPONSIBLE PROFITABILITY</th>
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METSÄ GROUP SUSTAINABLY FROM THE FOREST 2018
OUR 2030 SUSTAINABILITY OBJECTIVES

Sustainability is part of everything we do. The foundation of our sustainability work consists of four themes covering all our operations. With the strong commitment to our new strategic sustainability 2030 objectives we are building a path to low-carbon society. Our sustainability work supports reaching the global Sustainable Development Goals (SDGs) set by the United Nations.

Read more from Metsä Group’s Sustainability Report 2018

WE BRING THE FOREST TO YOU

- Increasing the amount of carbon stored in forests and products
- Safeguarding biodiversity

WE CREATE WELL-BEING

- Responsible corporate culture
- Accident-free work environment

SUPPORTING THE UN SUSTAINABLE DEVELOPMENT GOALS (SDG)
WE WORK FOR A BETTER CLIMATE AND ENVIRONMENT

- Fossil free mills
- Resource efficient production

WE OFFER SUSTAINABLE CHOICES

- Fossil free raw materials
- Sustainable supply chain
Sustainable products are in demand

Metsä Group’s business areas create a strong value chain where wood is used efficiently. The side streams generated in the production are utilised either as material or in energy production. Products made from renewable raw materials can replace the use of fossil raw materials.

Sales by area

- **Americas**: 7%
- **EMEA**: 74%
- **APAC**: 19%

**Metsä Forest**
- Renewable and sustainably grown raw material
- The wood is fully traceable; certified and/or controlled

**Metsä Wood**
- Strong, lightweight wood products of a consistent quality
- Construction with wood products is fast, and the products store carbon

**Metsä Fibre**
- Premium pulp, sawn timber and other bioproducts
- Fibre expertise, services and long-term cooperation create added value for customers

**Metsä Board**
- Pure, safe and lightweight paperboards
- Lightweight paperboards have a smaller environmental impact and generate less waste

**Metsä Tissue**
- Tissue papers that improve hygiene and well-being
- Greaseproof papers that reduce food waste and the consumption of energy and water
Metsä Forest wants to be a forest owner’s best partner – from wood trade to forest management and investment services. We are responsible for purchasing, harvesting and measuring wood, as well as for its transportation to the Group’s production units and other selected customers.

We procured more than 36 million cubic metres of wood in 2018, the majority of which was supplied by Finnish forest owners. We make around 35,000 wood trades per year in Finland. We are Finland’s biggest purchaser of wood and a forerunner in digital services for forest owners – now and in the future.
WOOD PRODUCTS WITH INDUSTRIAL EFFICIENCY

METSÄ WOOD manufactures industrial-scale wood products for the construction, industrial and distribution sectors.

Metsä Wood produces engineered wood products, which store carbon for decades to come. Our main products are Kerto® LVL, and birch and spruce plywood.

Made from spruce veneer, Kerto LVL is the best choice for fast, light and environmentally friendly construction. Our core competence is industrial-scale manufacturing. The element and module manufacturers in our Kerto LVL partner ecosystem develop their products based on our versatile material.

Birch plywood products are suitable for various uses in the vehicle and concrete formwork industries, which demand industrial durability. Our spruce plywood boards with special surface treatments are easy to use on-site.
BIOPRODUCTS TO GROWING MARKETS

METSÄ FIBRE is the world’s biggest producer of softwood market pulp and Finland’s biggest producer of sawn timber.

Metsä Fibre is a producer of bioproducts made from northern wood raw material. Bleached softwood and birch pulps have been developed for the manufacturing of premium paperboard, tissue and printing papers as well as speciality products. Metsä Fibre also produces sawn timber, biochemicals and renewable energy. Our fibre expertise, services and long-lasting cooperation create added value for our customers.

Our sawmills use the best properties of the high-quality wood raw material and, with the help of cutting edge production technology, sawn timber can be customised according to the individual wishes of each customer.

We are a forerunner with courage for renewal. Good examples of this include the next-generation bioproduct mill in Äänekoski as well as the prefeasibility study on the renewal of the Kemi pulp mill.
METSÄ BOARD is a leading European producer of premium and lightweight fresh fibre paperboards.

Metsä Board’s product range includes folding boxboard and food service paperboards, as well as white kraftliners. Lightweight, safe and environmentally friendly fresh fibre paperboards are suitable for food, cosmetics, pharmaceutical and electronic appliance packaging, as well as for various kinds of retail sales racks and packaging.

The product range is complemented by a range of expert services in packaging analysis and design, technical expertise as well as in research and product development.

Metsä Board grows profitably and globally together with brand owners, converters and merchant customers in businesses that benefit from safe and sustainable paperboards.
CONVENIENCE WITH HIGH-QUALITY TISSUE AND GREASEPROOF PAPERS

METSÄ TISSUE produces tissue and greaseproof papers that make everyday life a touch softer, easier and cleaner.

Metsä Tissue’s consumer brands – Lambi, Serla, Mola and Tento – offer a comprehensive range of toilet papers, household towels and paper handkerchiefs. SAGA multipurpose greaseproof papers are designed for cooking and baking at home and in large professional kitchens and bakeries.

The Katrin product line, designed for industrial-scale kitchens and professional use, includes hand towels, toilet papers, facial tissues, paper napkins and industrial wipes, as well as dispensers, soaps and accessories. Metsä Tissue also manufactures products for customers’ private labels.

Metsä Tissue’s growth is driven by the systematic development of product brands.
MAKING THE MOST OF WOOD

Metsä Group is a forerunner in sustainable bioeconomy. Our operations are based on efficient circulations and resource-wise utilisation of our renewable raw material, northern wood.

We use every part of the tree as effectively as possible for the purpose which creates the most value. Every production side stream is important and barely nothing goes to waste.

Circular economy works best in industrial ecosystems. These networks consist of partners manufacturing products for various end-uses. Thanks to this variety of requirements someone’s waste can be another’s valuable raw material. Industrial ecosystems create conditions for developing applications where wood can be used in a new innovative way.

Wood is a versatile material which, in addition to traditional wood products, can be used in textiles and the electronics industry, for example. Renewable wood is one of the best building blocks for resource-wise bioeconomy.

OVER 90% OF OUR PRODUCTION SIDE STREAMS ARE USED AS MATERIAL OR IN THE PRODUCTION OF RENEWABLE ENERGY

All products in **BOLD** are manufactured by Metsä Group.

All other products are manufactured within the industrial ecosystem.
Each part of the wood is used for the highest value products.

- **Sawn timber and wood products**
  - Construction, industrial applications, retail

- **Pulp**
  - Chemical industry
  - New bioproducts (in R&D)
  - Tall oil, turpentine
  - Lignin

- **Paper, speciality products**
  - Speciality paper
  - Biocomposites
  - Paper-based textiles (in R&D)

- **Greaseproof paper**
  - Food industry
  - Consumer goods, retail-ready, food service packaging

- **Tissue paper**
  - Households, industry, hotels, healthcare

- **Paperboard**
  - Media, publishing, construction, food industry

- **Electronics**
  - Musical instruments, electronics, car industry

- **Traffic fuel**
  - Household, professional kitchens

- **Biogas**
  - Renewable energy* used in own production

- **Sulphuric acid**
  - Chemical industry
  - Perfumes, solvents, paints, tyres, pharmaceuticals

- **Ash, lime, dreg**
  - Glues, filler materials, chemicals

- **Lignin**
  - Chemical industry

- **Energy**
  - Heat
  - Biogas

- **Renewable energy**
  - Heat, electricity

- **Product gas**
  - Fertilizers, soil improvement

- **Agriculture, silviculture, gardening**

- **New bioproducts**
  - Household, industry, society

- **Households, professional kitchens**

- **Traffic fuel**

- **Buildings, windows, doors, furniture, mouldings, packaging, panels**

- **Media, publishing, construction, food industry**

- **Consumer goods, retail-ready, food service packaging**

- **Households, industry, hotels, healthcare**

*used in own production
Metsä Group creates value, both economic and social, to stakeholders through its operations at a local, national and international level.

We provide jobs for over 9,300 employees and our purchases indirectly enable thousands of jobs, for example, in the harvesting and transportation sectors.

In addition, our contribution to Finnish exports is significant and we also produce renewable energy for Finland.

We strive to operate responsibly and be an important member of society. We also expect our partners to act sustainably.

RESOURCES AND COMPETENCES

SECURE SUPPLY

COOPERATIVE OWNERSHIP
- Steady wood flow secured by 103,000 forest-owner members
- Covering about 50% of Finland’s privately owned forests

PERSONNEL
- 9,310 employees in 29 countries
- Retention rate 97%

EFFICIENT USE OF RESOURCES

WOOD
- Procuring 36 million m³ of wood with 100% traceability

WATER
- 99.6% surface water – no impact on water scarcity

ENERGY
- 80% of the energy used in production was renewable

PRODUCTION
- 36 production facilities in 8 countries in Europe using the best available techniques

STEADY OUTLOOK FOR FUTURE

FINANCIAL
- In liquidity and undrawn credits EUR 1,940 million
- Capital employed EUR 5,208 million
- Equity ratio 53.1%

RENEWING THE INDUSTRY
- EUR 290 million in investments and research and development in 2018
• Local communities
• Schools and universities
• Cooperative’s owner-members
• Other forest owners
• NGOs

• Customers and consumers
• Associations
• Corporate networks
• Media
• Authorities, legislators and political decision-makers
• Own personnel
• Shareholders
• Investors and analysts
• Research organisations
• Subcontractors and suppliers

92% permanent employees
over 1,000 summer jobs
EUR 635 million in wages, salaries and benefits
EUR 640 million to Finnish forest owners from wood sales
EUR 400 million to harvesting and transportation entrepreneurs in Finland
~30 million seedlings delivered to forest owners annually

The value of exports from Metsä Group’s Finnish mills is EUR 3.4 billion, corresponding to 5% of Finnish exports
Producing over 15% of the renewable energy in Finland
Partnering in circular economy: 94% of production side streams utilised
96% of wood and 85% of other purchases from production countries in Europe
Ensuring biodiversity by leaving at least two high biodiversity stumps per hectare in forests
EURO 74 million paid as interests to Metsäliitto Cooperative’s owner-members

Reducing the dependence on fossil resources:
• Wood products that store carbon
• Pulp for recyclable products
• Paperboards for safe packaging
• Tissue papers for improving hygiene

Sales EUR 5.7 billion:
7% from Americas | 74% from EMEA | 19% from APAC
EUR 69 million as interest expenses
EUR 79 million of dividends to shareholders other than Cooperative’s owner-members
CERTIFICATION INDICATES SUSTAINABLE FOREST MANAGEMENT

Metsä Group procures wood from sustainably managed Northern forest areas where forest growth exceeds use. We always know the origin of the wood. 88% of the wood we use was certified according to PEFC™ and/or FSC® systems in 2018. The majority of the wood we use comes from Finland which is known as a forerunner in sustainable forest management.

Forest certification ensures that the forest has been used legally and managed sustainably. It’s proof of sustainable operations throughout the entire value chain, for both the forest owner as well as to the customer. Both forest certification schemes used by Metsä Group have comprehensive requirements for economic, social as well as environmental aspects.

<table>
<thead>
<tr>
<th>NORTH AMERICA</th>
<th>SOUTH AMERICA</th>
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<tbody>
<tr>
<td>35%</td>
<td>2%</td>
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</table>

88% OF THE WOOD USED BY METSÄ GROUP IS CERTIFIED

APPROX. 10% OF THE WORLD’S FORESTS ARE CERTIFIED
DEGREE OF FOREST CERTIFICATION IN METSÄ GROUP’S WOOD SUPPLY AREA

- **FINLAND**: 85%
- **SWEDEN**: 75%
- **NORTHWEST RUSSIA**: 20%
- **ESTONIA**: 75%
- **LATVIA**: 60%
- **LITHUANIA**: 55%
- **WESTERN EUROPE**: 58%
- **CIS**: 8%
- **ASIA**: 4%
- **AFRICA**: 1%
- **OCEANIA**: 6%
We succeed together

We are proud of our skills at Metsä Group. Every one of us has the chance to be successful in our work and develop professionally. Our success is supported by clear goals and supervisory work in line with our values.

Renewal, cooperation, reliability and responsible profitability are the values that guide our work. We renew actively, learn from each other and carry the responsibility for our own work and competence.

We achieve results together, responsibly, for the good of our customers. We want to be a step ahead. By challenging ourselves and our partners continuously, we are building the future Metsä together.
FROM FOREST TO BROCHURE

The covers of Metsä Group’s 2018 reports are made from folding boxboard produced at Äänekoski, Finland.

The wood used in Metsä Group’s products is traceable all the way to the stump. The value chain, traceable to the forest, guarantees the sustainability and safety of our products.

Metsä Group Sustainably from the forest 2018 brochure
Metsä Group Annual Review 2018
Metsä Group Sustainability Report 2018
Metsä Board Annual Report 2018
Metsä Fibre Annual Review 2018

PUBLISHER

Metsä Group
These publications and further information are available online at www.metsagroup.com.
Metsä Group’s annual reporting comprises this brochure, the Annual Review and the Sustainability Report all available in English.

The Annual Review include a Corporate Governance Statement. In addition, Metsä Board Corporation and Metsä Fibre Oy publish their own annual reports. Please send your feedback to communications@metsagroup.com or on social media @MetsaGroup.
Make the most of Metsä