

# METSÄ FIBRE ANNUAL REVIEW 2019



**Metsä**

# TOWARDS SUSTAINABLE EXCELLENCE

In 2019, our delivery volumes to our customers were three million tonnes of pulp and 1.8 million cubic metres of sawn timber. We are the world's leading producer of bleached softwood market pulp and a major producer of sawn softwood. We aim to strengthen our position further in both the pulp and sawn timber business. To achieve this objective, we initiated the pre-engineering projects of the Kemi bioproduct mill and the Rauma pine sawmill.

## **Review of Metsä Fibre's year 2019 by CEO Ismo Nousiainen**

In 2019, the demand for market pulp grew slightly from the previous year. This growth mostly affected softwood pulp. In China, the production of paper and paperboard was strong during the second quarter, while the production of printing and writing paper declined in Europe. As a result, the demand for softwood pulp grew in China and fell in Europe. New pulp capacity built in previous years also reached full production during the year, which increased supply and kept producers' stocks at a high level. The market situation led to a significant drop in the price of pulp, and the average market prices for both long-fibre and short-fibre pulp were lower than in the previous year.

The demand for spruce sawn timber remained normal on our main markets in Europe and China throughout the year, whereas the demand for pine fell. The supply of sawn timber increased as a result of the new production capacity in Russia and, especially, the increased sawing volumes in Southern Sweden and Central Europe, resulting from insect and storm damage. The oversupply kept the market situation challenging and the prices of sawn timber low. In fact, the average prices for sawn timber were lower than in the previous year.

The decline in global market prices of pulp and sawn timber had a negative impact on the operating result, even though we were able to increase sales volumes from the year before.

The development of our business operations is based on continuous improvement and timely, cost-efficient investments. The demand for pulp and sawn timber will increase in the future. The pulp market is indeed expected to continue on a path of steady growth, particularly in developing markets, such as China, where the growing middle class will increase the demand for consumer products. Also, products based on renewable wood raw material will increasingly replace fossil-based materials in the future.

## **A forerunner with the courage to renew itself**

In accordance with our strategy, we want to be the world's best and most profitable in converting northern wood raw material into valuable bioproducts. Our operations are based on continuous improvement, and in 2019, we continued the company's purposeful development.

The prefeasibility study concerning the modernisation of the Kemi pulp mill, which began in May 2018, was completed, and in April 2019, we kicked off the pre-engineering phase for the construction of a new bioproduct mill in Kemi. The pre-engineering project aims to bring about favourable conditions for building a mill that produces 1.5 million tonnes of softwood and birch pulp a year as well as numerous other bioproducts in Metsä Group's current mill area in Kemi. If realised, the value of the investment would be EUR 1.5 billion, which would make it the biggest investment ever in the history of the European forest industry. The investment decision on the construction of the bioproduct mill will be made earliest in the summer of 2020.

In April 2019, we also commenced a pre-engineering project for building a new pine sawmill in Rauma. Our objective is to create favourable conditions for building the world's most modern and efficient pine sawmill, in which the standard of new technology and data use will be markedly higher than in current sawmills. If realised, the value of the investment would be approximately EUR 200 million. The investment decision on the possible construction of the saw will be made during the first half of 2020.

We aim to use 100% of our wood raw material, and we continue to develop the efficient utilisation of our side streams, converting them into new products within our unique bioproduct concept. During the year, we started the development of two new bioproducts.

## **Excellent performance in all operations**

Reliable deliveries and consistent quality are of key importance to our customers. We take care of the capacity of our production units by means of continuous improvement, carried out in the form of investments as well as regular major repair and maintenance measures.

In Joutseno, we began to expand the debarking department, which will increase the mill's capacity in softwood debarking by a third. The value of the investment is approximately EUR 30 million and the work will be completed in the spring of 2020. We also renewed the electrostatic precipitator of the recovery boiler in Kemi and kicked off a project for the further reduction of the particulate emissions of Joutseno's lime kiln. These investments represent the continuous improvement of our environmental performance.

Our investments in the sawmills during the year focused on the improvement of production efficiency and capacity, and they were carried out in conjunction with annual maintenance shutdowns and as direct investments. Among other improvements, we deployed next generation X-ray equipment at the Merikarvia, Renko and Vilppula sawmills. We also carried out pilot projects to test new sawing technology, such as the use of computer vision, related to the Rauma pre-engineering phase.

## **Exceeding expectations**

We aim to exceed our customers' expectations. This requires close cooperation with customers, the continuous improvement of the quality of our operations and investments in new technology. During the year, we began work aiming to develop the sales and supply chain of sawn timber. This work allows us to strengthen our customer-driven operating model and ensure a high level of delivery reliability. We want our customers to be able to make the best possible products out of our products for their own customers, in a manner that is effective environmentally and from the perspective of materials and costs.



Sustainability and responsibility are an integral part of everything we do. We use northern wood from sustainably managed forests for the resource-efficient production of products which can replace fossil-based raw materials.

In 2019, we took part in the global EFQM Excellence Award competition in which we won the award for Outstanding Achievement for Sustainability and achieved the Recognised for Excellence 6 Stars rating. The award was presented as recognition for the excellent work we have done to promote sustainability and continuous improvement. During the year, we also received the EcoVadis Gold recognition, which is the highest level of recognition granted for sustainability work. The gold-level recognition was presented to us due to our work related to the environment, working life practices, fair and just business practices, and supply chains.

## The best personnel

We want to ensure that the best talent in our industry works for us and applies for our vacancies. In 2019, we started a new apprenticeship training programme in which we, this time around, recruited 25 people to train for a vocational degree.

We also continued our long-range work to improve safety at work. During the year, our accident frequency grew compared to the previous year and was 8.7 (LTA1 in 2018: 5.9). This is not a satisfactory level, and to remedy the situation, we will ensure the high-quality implementation of our safety management system in all our operations. Safety is something that concerns us all, and this is why we also continued our cooperation aiming to improve safety at work with our customers and partners.

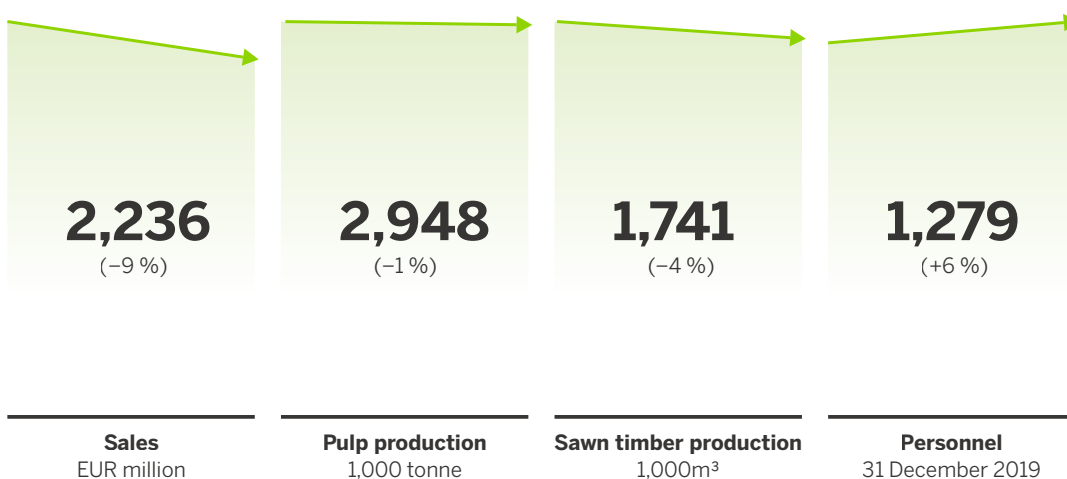
Metsä Fibre's operations are based on our company's strengths: excellent delivery reliability enabled by a stable wood supply and our modern production units, our solid know-how in the pulp and sawn timber business and the strong market position based on it as well as our corporate culture of continuous improvement. The market for our bioproducts continues to grow and we will continue to invest in the continuous improvement of our operations.

I would like to thank our customers, personnel and partners for a strong year of development.



Ismo Nousiainen  
CEO  
Metsä Fibre Oy

## 2019 key figures



# 2019 highlights



## Kemi bioproduct mill project progressed to pre-engineering phase

The Kemi pulp mill related prefeasibility study, launched in May 2018, was finalized during the spring 2019. Building a new bioproduct mill to Metsä Group's current mill site in Kemi was chosen for future development. Target for the ongoing pre-engineering is to create conditions for building a bioproduct mill with annual production capacity of 1.5 million tonnes of softwood and hardwood pulp. In addition to pulp, the mill would produce various other bioproducts and the new mill would include fossil free operations. The final investment decision is expected to be made earliest in summer 2020.



## Pre-engineering project of Rauma pine sawmill was started

Metsä Fibre started a pre-engineering project to build a pine sawmill at its mill site in Rauma. The estimated annual production of the sawmill would be approximately 750,000 cubic meters. The new sawmill would be the most modern and efficient unit in its field in the world. The level of technology and utilization of data will be raised clearly higher compared to current sawmills. The final investment decision related to Rauma sawmill is expected to be made in early 2020.



## Recognition for corporate environmental and social responsibility

Metsä Fibre was awarded a gold medal in recognition of CSR achievement. EcoVadis Gold rating was given to Metsä Fibre for the work company has done related to environment, labor & human rights, ethics, and sustainable procurement. In the overall score, Metsä Fibre is in the top 3% of companies assessed by EcoVadis in the manufacture of pulp, paper and paperboard industry.



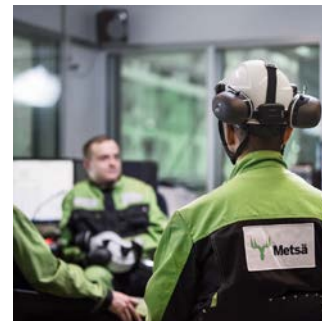
## Outstanding achievement in sustainability

Metsä Fibre was awarded for the company's sustainability work by the EFQM Global Excellence Award. The company won the Outstanding Achievement for Sustainability Award and reached the EFQM rating Recognised for Excellence 6 Stars. EFQM organisation gave the Outstanding Achievement in Sustainability Award to Metsä Fibre for the excellent work the company has done in promoting and continuously developing sustainability. Metsä Fibre received special thanks for the ways it takes sustainability into account in its investments and action plans, and for the way sustainability is reflected in the corporate culture at all levels of the organisation.



## Renewal of pulp product brand and customer promise

Metsä Fibre's Botnia brand was replaced by the Metsä brand in all pulp products, services and biochemicals. The pulp branding is new, but the products and product range are exactly the same, with the same Northern wood raw material and guaranteed Metsä Fibre quality. New customer promise was also launched besides the brand renewal. Our new customer promise is Exceeding Expectations – a commitment that reflects our strategic aim and ambition.



## Collaboration in safety and sustainability

Metsä Fibre and Ahlstrom-Munksjö started safety cross-audits in both companies' production facilities. The collaboration also includes sharing best practices and trainings. Goal for the both companies is to improve the overall safety within Pulp and Paper industry, because the safety has no boundaries. In addition to safety collaboration, Metsä Fibre and Ahlstrom-Munksjö have started sustainability cooperation, which includes audits and visits as well as trainings on environmental performance, supply chain sustainability and sustainable forest management.

# FINANCE

Metsä Fibre is a leading producer of bioproducts, biochemicals and bioenergy. We are the world's biggest producer of softwood market pulp and a major producer of sawn timber. Our strategic goal is to be the world's best and most profitable in converting northern wood raw material into valuable bioproducts. In accordance with our mission, we create sustainable growth from our renewable wood raw material. Metsä Fibre is part of Metsä Group.

## Key figures

	2019	2018	2017	2016	2015
<b>Sales</b> EUR million	2,236	2,469	1,876	1,351	1,445
<b>Comparable operating result</b> EUR million	249	669	320	219	337
<b>Investments</b> EUR million	63	62	436	548	250
<b>Return on capital employed</b> %	12	35	24	20	42
<b>Equity ratio</b> %	57	55	48	57	67
<b>Net gearing ratio</b> %	10	1	35	23	-36



# Production

<b>Pulp production</b> (1,000 tonne)	<b>2019</b>	<b>2018</b>	<b>2017</b>	<b>2016</b>	<b>2015</b>
Joutseno	638	675	655	619	658
Kemi	566	593	598	604	585
Rauma	600	557	568	585	602
Äänekoski	1,143	1,148	666*	510	507
<b>Total</b>	<b>2,948</b>	<b>2,973</b>	<b>2,487</b>	<b>2,318</b>	<b>2,352</b>

\*) The previous Äänekoski mill in production until 8/2017, and the new bioproduct mill as of 8/2017. 2017 production figure represents the combined production at Äänekoski in 2017.

Metsä Fibre has four pulp mills: the Joutseno, Kemi, Rauma and Äänekoski pulp mills, which have a combined annual pulp production capacity of 3.3 million tonnes. In 2019, we delivered three million tonnes of pulp to our customers, and we are the world's leading producer of bleached softwood market pulp.

<b>Timber production</b> (1,000 m <sup>3</sup> )	<b>2019</b>	<b>2018**</b>	<b>2017</b>	<b>2016*</b>	<b>2015</b>
Kyrö	221	228	232	219	200
Lappeenranta	238	243	253	234	216
Merikarvia	214	220	223	227	205
Renko	290	308	310	322	259
Vilppula	491	510	514	481	452
Metsä Svir	288	281	274	263	251
<b>Total</b>	<b>1,741</b>	<b>1,790</b>	<b>1,806</b>	<b>1,746</b>	<b>1,583</b>

\*) Metsä Group's Finnish sawmills were integrated into Metsä Fibre on 1 November 2016.

\*\*\*) Eskola sawmill figures 1-6/2018, the sawmill business in Eskola was sold to Haapajärven Ha-Sa Oy

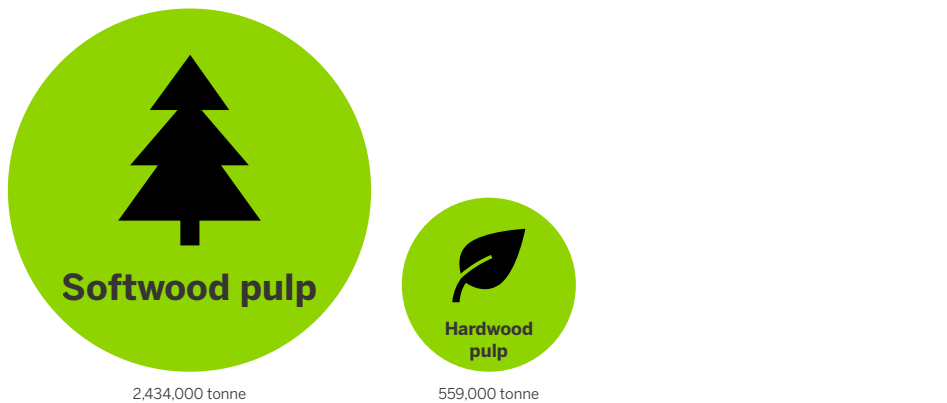
Metsä Fibre has five sawmills in Finland (in Kyrö, Lappeenranta, Merikarvia, Renko and Vilppula) and one in Russia (in Svir). Our combined annual production capacity for sawn timber is 1.9 million m<sup>3</sup> of sawn softwood. In 2019, we delivered 1.8 million cubic metres of sawn timber to our customers.

# Sales

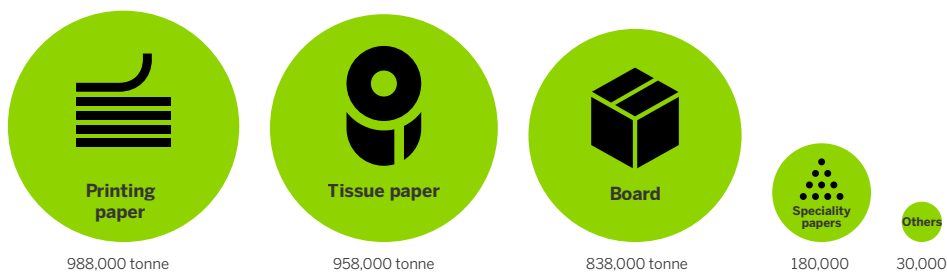
## Pulp sales

The most important end uses of Metsä pulp comprise paperboards, tissue papers, printing papers and speciality products. Most of the pulp we produce is used in Finland and in Asia.

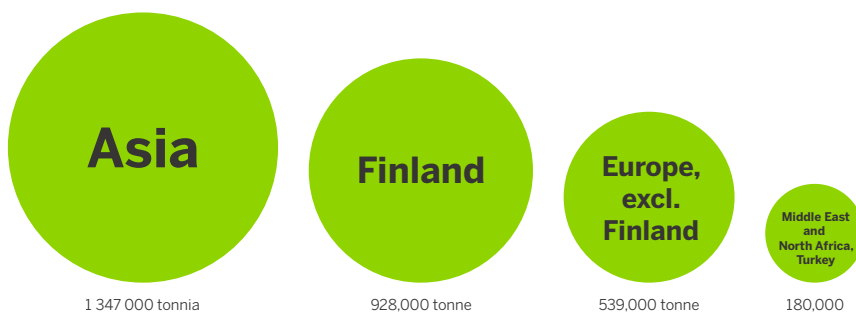
We develop our pulp grades in close cooperation with our customers to ensure that our products meet their requirements for the properties of the fibre and paper. Our pulp selection is complemented by our diverse expert services, which allow us to support our customers' processed and business operations.



## End use of Metsä pulp



## Pulp sales volumes by market areas





# Sawn timber sales

We produce premium sawn timber from northern pine and spruce, and serve customers around the world. Our most important export markets for sawn timber are Europe, Asia and the Middle East. We export some 90% of our spruce sawn timber and 85% of our pine sawn timber.

Our sawn timber is delivered mainly to distributors for use in industrial planing, the woodworking industry as well as the door and window industry. Our efficient production lines ensure a high-quality, smooth and even sawn surfaces, precise dimensions and excellent drying results.



1,097,000 m<sup>3</sup>



716,000 m<sup>3</sup>

## End use of sawn timber



834,000 m<sup>3</sup>



381,000 m<sup>3</sup>



290,000 m<sup>3</sup>



181,000 m<sup>3</sup>



109,000 m<sup>3</sup>

## Sawn timber sales volumes by market areas



635,000 m<sup>3</sup>



508,000 m<sup>3</sup>



471,000 m<sup>3</sup>



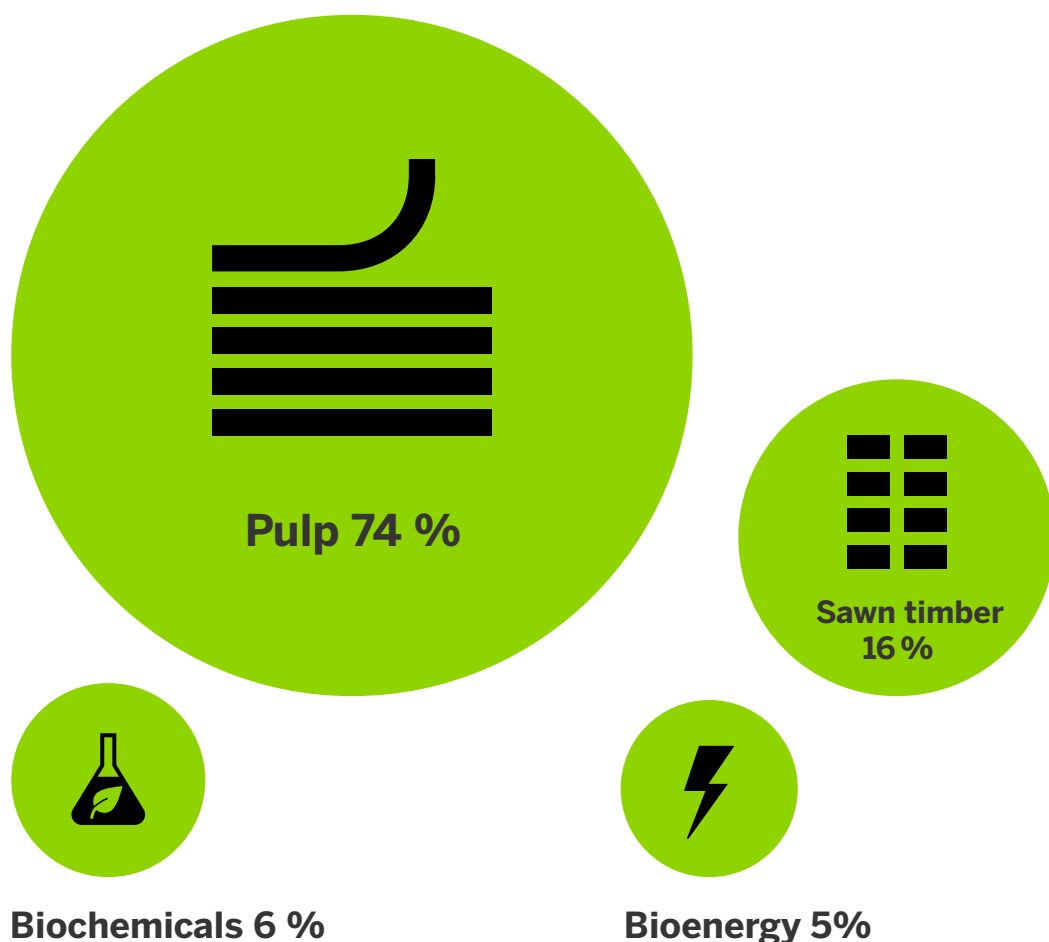
199,000 m<sup>3</sup>

## Other bioproduct sales

Metsä Fibre is a leading producer in the world market of chemicals derived from northern wood. We produce crude tall oil and crude turpentine as a by-product of pulp production. These are used in diverse applications by a variety of industries. In addition, we continuously develop and expand our selection of our bioproducts produced from the side streams of pulp production.

We have made a commitment to utilise our wood raw material as efficiently and diversely as possible. Our mills produce more bioenergy than they need, and we sell the surplus production to the national grid. The material side streams accumulating from the main production of pulp offer a wide range of possibilities for the development and conversion of innovative bioproducts.

## Share of bioproducts 2019, % of sales



### Tall oil

Crude tall oil is used as a raw material in the production of adhesives, rubbers and inks as well as pharmaceuticals and bio-fuels. It is also used as a binding agent in cement and asphalt.

### Turpentine

Crude turpentine is a compound used, in a processed form, in fragrances, cosmetics, paint, varnish and solvents, and in household and industrial detergents.

A significant share of all renewable energy produced in Finland is generated in connection to pulp production when black liquor, consisting of wood and cooking chemicals, is combusted in the recovery boiler. At the same time, the cooking chemicals used in the pulp process are converted into a reusable form. In addition to our own production, we supply bioenergy in the form of district heat to local communities and electricity to the grid.

# SUSTAINABILITY

Sustainability and responsibility are in the core of all our operations, and we serve as a forerunner of the sustainable bioeconomy. We use northern wood from sustainably managed forests for the resource-efficient production of products which can replace fossil-based raw materials. We ensure environmental, energy and materials efficiency as well as the high quality of our products, and we aim for sustainable excellence through continuous improvement. Our operations support the achievement of the UN's Sustainable Development Goals.



In 2019, our work towards sustainability was acknowledged: we were awarded the EcoVadis Gold rating and the Outstanding Achievement for Sustainability award in the EFQM quality competition.





# Use of wood

All of the wood we use, meaning 100% of it, is traceable and comes from certified or controlled forests. This allows us to ensure the legality of the wood supply as well as the acceptability and sustainability of the supply chain. A tracing system allows us to trace the origin of the wood we purchase all the way up to an individual felling site.

The northern wood used by Metsä Fibre is bought from sustainably managed forests in areas where the forests grow more than they are used. 90% of the wood used by Metsä Fibre is certified – an excellent figure in our line of business.

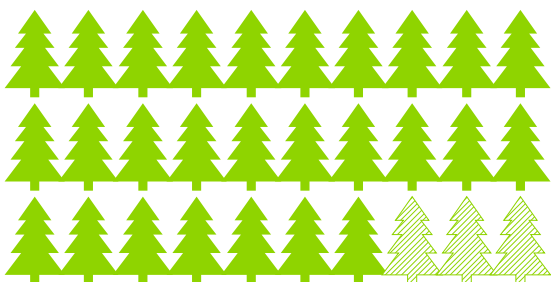
Forest regeneration is always part of sustainable forest management, and we require environmental values to be considered in all forestry measures. A forest is always regenerated after a felling, and Metsä Group uses domestic tree species and seedlings in forest regeneration. The diversity of forest nature is also protected in many ways.

	2019	2018	2017	2016	2015
<b>Total wood consumption</b> million m <sup>3</sup>	19	19	17	13	13
<b>Share of certified wood</b> %	90	92	92	90	87

## Forest certification

### 90%

of the wood used by the Metsä Fibre's production units comes from certified forests



### Around 10%

of the world's forests are certified

### Only 25%

of the (industrially) recoverable forest assets are certified

### 92%

of the wood used by the Metsä Fibre comes from certified forests

# Environmental performance

## Emissions into water

Our sustainability goals include enhancing the use of process water throughout Metsä Group by 25% by 2030. To achieve this goal, we engage in long-term and systematic work in line with the principles of continuous improvement. The steady operation and good usability of production units as well as scheduled preventive maintenance and maintenance shutdowns play a key role in increasing the efficiency of water use. We use and recycle water as efficiently as possible within our processes and actively look for new targets where the water flow can continue to be improved.

The sawmills' production processes generate nominal volumes of wastewater, which is treated in municipal wastewater treatment plants. The exception to this is the Svir sawmill, which has its own wastewater treatment plant.

	Process water volume 1000 m <sup>3</sup>	Total suspended solids, t	Chemical oxygen demand (COD), t	Biological oxygen demand (BOD), t	Phosphorus P t	Nitrogen N t	AOX t
Joutseno	18,105	1,016	7,208	163	10	146	95
Kemi	17,727	486	7,748	116	6	152	47
Rauma	15,952	290	10,827	110	4	60	96
Äänekoski	22,891	505	7,639	133	7	87	126
<b>Total</b>	<b>74,675</b>	<b>2,297</b>	<b>33,422</b>	<b>522</b>	<b>26</b>	<b>445</b>	<b>363</b>
<b>2018</b>	72,207	1821	30,616	483	27	426	341

## Emissions into air

Our sustainability goals include fossil-free mills by 2030. The reduction in the use of fossil fuels is also visible in the mills' sulphur dioxide emissions. Even today, most of the fuels used in our production are bio-based, and the majority of them are production side streams. By utilising the side streams generated in the process as carefully as possible, we can also find new solutions for our production units' resource, energy and environmental efficiency.

### Pulp mills

	Sulphur dioxide (as SO <sub>2</sub> ) t	NOX (as NO <sub>2</sub> ) t	CO <sub>2</sub> from fossil sources 1000 t	CO <sub>2</sub> from biomass 1000 t	Particles t	TRS (as S) t
Joutseno	311	886	22	1,597	267	5
Kemi	161	1,129	67	1,387	72	24
Rauma	11	823	80	1,308	105	6
Äänekoski	12	1,727	0	3,131	27	12
Energy Unit	131	165	67	217	3	0
<b>Total</b>	<b>625</b>	<b>4,730</b>	<b>237</b>	<b>7,640</b>	<b>473</b>	<b>47</b>
<b>2018</b>	240	4,038	169	6,711	510	48

\*) Energy Unit (former Äänevoima Oy) producing energy to the Äänekoski integrate and district heat to the city of Äänekoski.

### Sawmills

	Sulphur dioxide (as SO <sub>2</sub> ) t	NOX (as NO <sub>2</sub> ) t	CO <sub>2</sub> from fossil sources 1000 t	CO <sub>2</sub> from biomass 1000 t	Particles t
Kyrö	2.84	19	0.5	24	20
Lappeenranta	0.25	27	0	28	5
Merikarvia	0.04	26	0.63	28	19
Renko	0	26	0.43	33	6
Vilppula	25	93	2.78	85	12
Metsä Svir	0.17	33	0	29	2
<b>Total</b>	<b>28</b>	<b>224</b>	<b>4</b>	<b>227</b>	<b>64</b>
<b>2018</b>	38	229	6	210	73

### Total

	Sulphur dioxide (as SO <sub>2</sub> ) t	NOX (as NO <sub>2</sub> ) t	CO <sub>2</sub> from fossil sources 1000 t	CO <sub>2</sub> from biomass 1000 t	Particles t	TRS (as S) t
<b>Company total</b>	<b>653</b>	<b>4,954</b>	<b>241</b>	<b>7,867</b>	<b>573</b>	<b>47</b>
<b>2018</b>	278	4,267	175	6,921	583	48



# Waste

Our goal is to utilise production side streams fully by 2030 and to achieve a state in which our production will not generate landfill waste. Already, an extremely large portion of production side streams can be put to use as various by-products and energy. At the moment, the green liquor dregs generated in the pulp process is the only category for which there is not yet a clear use. We are actively looking for applications in which it could be used and the topic is also the subject of research projects.

	Landfill waste t	Hazardous waste t
Joutseno	9,107	106
Kemi	8,490	70
Rauma	13199	39
Äänekoski	17,534	64
<b>Total</b>	<b>48,329</b>	<b>279</b>
<b>2018</b>	38,792	261

	Landfill waste t	Hazardous waste t
Kyrö	0	<b>18</b>
Lappeenranta	0	<b>30</b>
Merikarvia	66	<b>8</b>
Renko	33	<b>13</b>
Vilppula	160	<b>4</b>
Metsä Svir	7	<b>0.2</b>
<b>Total</b>	<b>266</b>	<b>73</b>
<b>2018</b>	57	59

	Landfill waste t	Hazardous waste t
<b>Company total</b>	<b>48,595</b>	<b>352</b>
<b>2018</b>	38,849	320

# Energy

The self-sufficiency rate of Metsä Fibre's mills in terms of electrical energy totals 177%, and we are a significant producer of bioelectricity. In 2019, Metsä Fibre accounted for 10% of the electricity produced from renewable energy sources in Finland, and 14% of renewable energy. In addition to our own production, we produce bioenergy for the grid as electricity and as district heat for nearby communities.

Alongside increasing the share of bioenergy, we are focusing on energy efficiency and the replacement of fossil fuels by renewable fuels. Improving the energy efficiency of our production units is a key part of our investments in production.

## Pulp mills

	Wood based fuel use GWh	Fossil fuel use GWh	Purchased electricity GWh	Purchased heat GWh	Electricity self-sufficiency %
Joutseno	4,033	111	-283	-57	174
Kemi	3,504	235	-162	-430	145
Rauma	3,302	281	-172	-240	145
Äänekoski	7,906	0	-777	-293	216
Energy Unit	548	227	34	-620	
<b>Total</b>	<b>19,293</b>	<b>853</b>	<b>-1,358</b>	<b>-1,640</b>	<b>177</b>
<b>2018</b>	18,458	620	-1,311	-807	174

\*) Energy Unit (former Äänevoima Oy) producing energy to the Äänekoski integrate and district heat to the city of Äänekoski.

## Sawmills

	Wood based fuel use GWh	Fossil fuel use GWh	Purchased electricity GWh	Purchased heat GWh
Kyrö	62	1,9	15	0
Lappeenranta	70	0	17	-0.1
Merikarvia	70	2.4	15	-9
Renko	83	1,6	7	0
Vilppula	216	9	18	-62
Metsä Svir	73	0,2	14	-
<b>Total</b>	<b>573</b>	<b>15</b>	<b>87</b>	<b>-71</b>
<b>2018</b>	577	25	89	-74

	Wood based fuel use GWh	Fossil fuel use GWh	Purchased electricity GWh	Purchased electricity GWh
<b>Company total</b>	<b>19,865</b>	<b>869</b>	<b>-1,271</b>	<b>-1,711</b>
<b>2018</b>	19,035	645	-1,222	-881



# The continuous development

Cooperation between experts ensures the continuous development of environmental performance and yields increasingly good results. Our own personnel's and our partners' skills and commitment to implementing agreed goals play a significant role. The cooperation and investment programmes carried out in 2019 represent concrete examples of this.

The development work concerning the operating models of the tertiary phase of the Äänekoski bioproduct mill's wastewater treatment plant was continued successfully in cooperation with chemical suppliers. The project aimed to ensure good treatment results and minimise the consumption of chemicals in the tertiary phase. The development work improved the performance of the wastewater treatment plant in terms of continuous measurements and the plant's controls. The project also improved the personnel's and our partners' know-how in wastewater treatment. This increases the efficiency of operations in the tertiary phase and further improves the management of environmental burdens led into waterways.

The environmental investments to be implemented in Kemi and Joutseno minimise particulate emissions into the air and ensure operations within the permit limits. We carried out the final phase in repairing the recovery boiler's electrostatic precipitator in Kemi, and in Joutseno, we kicked off an investment programme aiming to enhance the treatment of particulate matters led into the air from the lime kiln. The participation of equipment suppliers, maintenance personnel and operating personnel in the investment programme's implementation guarantees that the investments are deployed successfully.

## **Improving environmental performance requires cooperation**

At Rauma, we kicked off preparatory work on the industrial plot pursuant to the Maanpää town plan. The quarrying work is carried out by an external partner. We've paid special attention to managing the operations' key environmental impacts – such as noise, vibration and dust – given that there are residences in the immediate vicinity of the project area. The neighbourhood has furthermore been kept up-to-date on the project's progress with the help of shared neighbourhood events and by providing the neighbours with regular bulletins on what is happening at the site. Responsible operations require minimising environmental impacts continuously as well as reacting swiftly to deviations and being committed to operating in line with common goals and joint agreements.

The wood ashes generated in our sawmills' energy production were delivered to reclamation through cooperation networks. The ashes were used primarily by our partners as recycled material in earthworks. In addition, wood ashes were used as fertilisers to improve the growth of forests.



## Good usability in a key role

The management of environmental burdens requires, above all, a mill's good usability and the functionality of treatment equipment. Our measures aiming to prevent sudden damage include regular preventive maintenance and inspections. Even so, damage may occur before we have the time to carry out a scheduled inspection. This is what happened at Joutseno's wastewater treatment plant, where sludge removal was interrupted due to gasket damage and the permit limit for solids led into waterways was exceeded. In addition to the gasket damage, the permit limit for solids led into waterways in Joutseno was exceeded twice late in the year as the cooling water raised and carried along solids that had settled in the tertiary basin. As a corrective measure, the mill's clean waters and surface waters in yard areas will be redirected in such a way that no extra solids can enter the waterways.

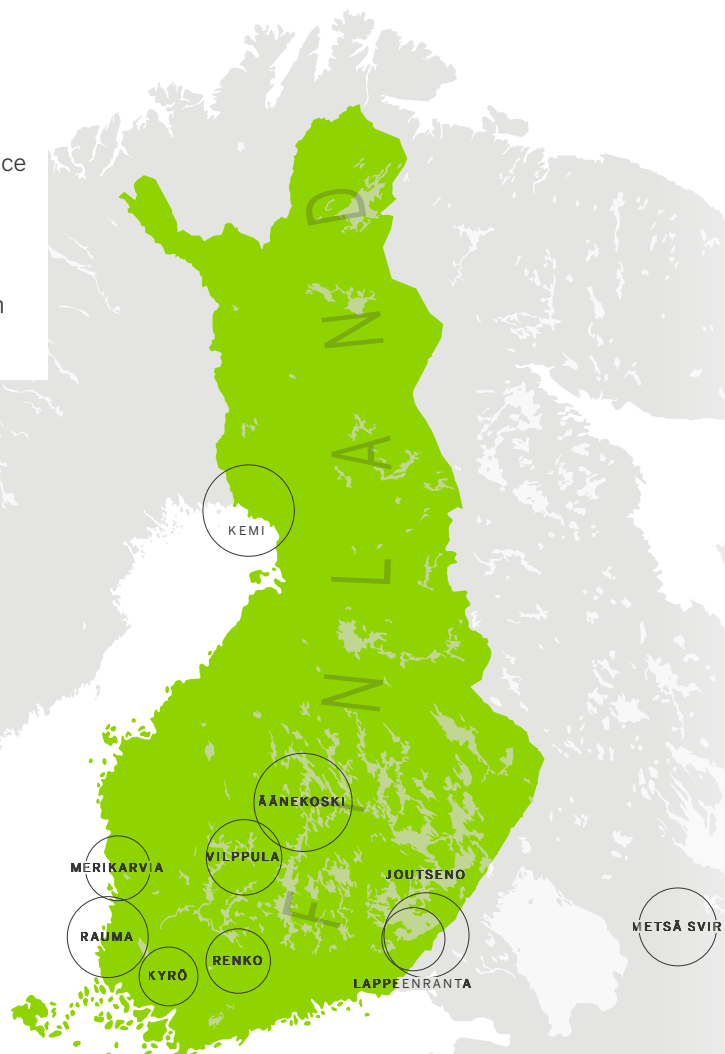
The permit limit for reduced sulphur compounds was exceeded temporarily in Kemi and the permit limit for sulphur dioxide was exceeded twice in Rauma due to the low content of dry matter in black liquor during the recovery boiler's start-up phase.

Our day-to-day work aims to minimise the environmental impact of our operations with increasingly better and proactive environmental work. Any deviations in our environmental performance are investigated and corrective measures are defined for future reference. In accordance with the principles of continuous improvement, we take sustainability into consideration in all our action plans and investments. Our good environmental performance also provides our customers with added value and a competitive edge.

# PERSONNEL

Our operations aim for sustainable excellence. Its achievement requires first-rate safety at work and our goal is indeed zero accidents in all our locations. At Metsä Fibre, safety is an important part of professional skills, and proactive safety work is part of our everyday operations. We invest in the continuous development of our employees' professional skills through both on-the-job learning and training, and we offer summer jobs to dozens of young people as well as apprenticeship training for several people every year.

Metsä Fibre is a leading producer of bioproducts and bioenergy. We produce pulp and other bioproducts as well as bioenergy at four mills in Finland. We produce sawn timber products at five sawmills in Finland and one sawmill in Russia.



# Safety and wellbeing

Safety is of primary importance to us in everything we do, and everyone at Metsä Fibre has the right to a safe workplace. Our goal is zero accidents and we want to make sure that every Metsä Fibre employee and every employee of our partners heads home healthy. Safety is the most important part of professional skills at Metsä Fibre.

Key aspects of safety management include proactive safety work, risk identification and assessment, addressing unsafe working methods, and the entire personnel's commitment. We engage in long-term work to improve safety at work and require occupational safety skills from our suppliers and partners as well. We provide all our employees and the partners working at our mills with induction training on safe ways of working.

<b>Lost-time accident frequency rate</b> per million worked hours	2019	2018	2017	2016	2015
<b>Sawmills</b>	14.8				
<b>Pulp mills</b>	4.7				
<b>Metsä Fibre total</b>	<b>8.7</b>	<b>5.9</b>	<b>5.2</b>	<b>7.2</b>	<b>7.9</b>

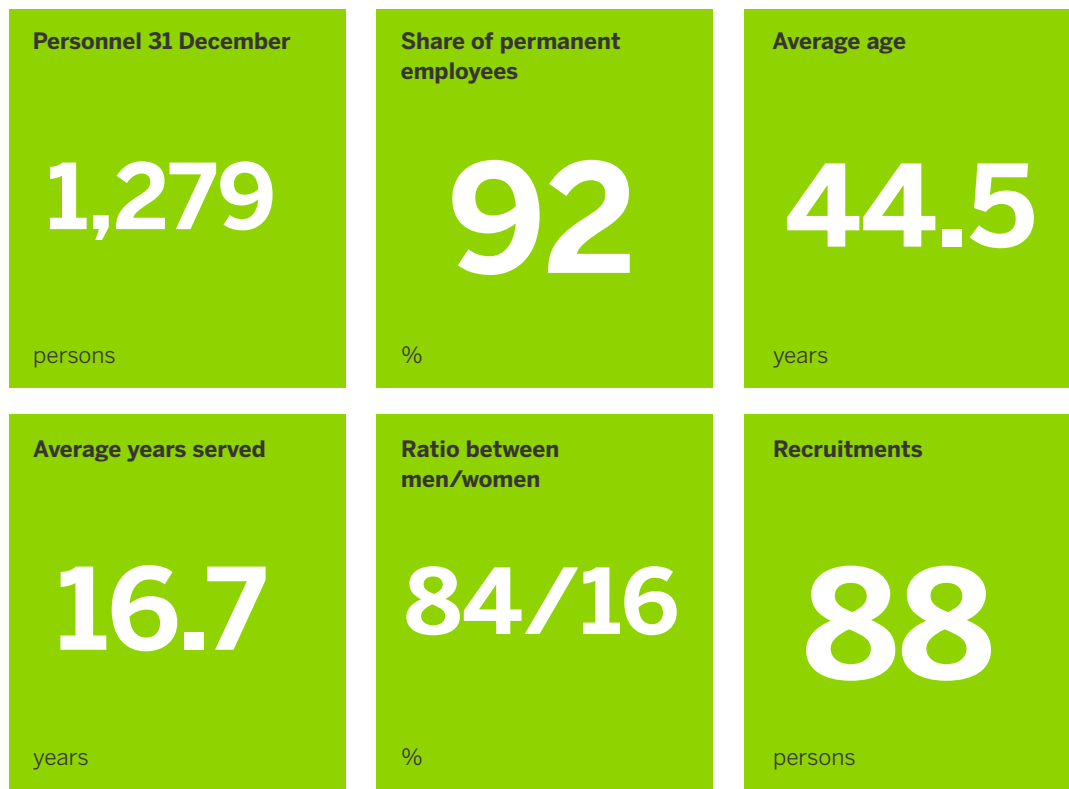
	2019	2018	2017	2016	2015
<b>TRIF</b> total recordable incident frequency per million worked hours	20.2	17.1	17.2	21.6	17.6
<b>Sickness absenteeism</b> % of theoretical working time	4.1	3.7	3.7	3.7	4.1
<b>Work accident absenteeism</b> % of theoretical working time	0.2	0.1	0.2	0.1	0.2

# People in Metsä Fibre

We at Metsä Fibre are proud of our heritage and strong industry expertise. We work in the forefront of the forest industry and focus on developing sustainable solutions for the future. We work together to implement Metsä Fibre strategy for sustainable excellence.

The high quality of our products is based on the extensive expertise of our employees. We invest in the continuous development of our employees' professional skills through both on-the-job learning and training. Each one of us is focused on developing, producing and delivering products and services that meet our customers' needs. We aim for a strong, innovative culture with a winning attitude, and we do it all while paying close attention to safety, responsibility and sustainability.

Our work is guided by our values: reliability, cooperation, responsible profitability and renewal. We develop our operations in cooperation with our stakeholders.





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