

# Sustainability Report 2019





# A catalyst for changing the game

## INTRODUCTION

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## A CIRCULAR ECONOMY FORERUNNER

## ECONOMIC IMPACTS

## CLIMATE CHANGE MITIGATION

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We at Kotkamills are committed to developing our business in a sustainable manner. Our sawmill produces ecological wood products from trees grown in certified forests. The by-products of production are used in Absorbex® base kraft papers and in our plastic-free board offering. The packaging boards produced by our Consumer Boards segment are a plastic-free alternative for use in food packaging.

### Resource-efficient integrated mill

Our roots date back to the founding of the Kotka sawmill in 1872. It brought together the community, playing a role in what the city of Kotka is today. Home to a population of more than 53,000 people, the city is part of the Kymenlaakso region and sits close to the Port of Kotka, a major Finnish sea port serving foreign trade activities.

Over the years, we have expanded from the sawmill to three business lines operating as an integrated mill. At Kotkamills, we efficiently use raw wood material in the various stages of the production chain. We use the sawdust and wood chips created when sawing timber as a raw material for our paper and board products to produce saw dust pulp for Absorbex® kraft paper and the wood chips for CTMP for AEGLE® and ISLA® board products. Refining the by-products into raw materials suitable for our other production processes is logistically efficient, economically profitable and environmentally friendly. Recycled packaging board is repulped at our recycled fibre plant and then used in the production of laminating paper.

### Continuous improvements

Pulp and paper industry processes traditionally consume high volumes of energy and water. Our Board Machine that was installed in 2016 and a new effluent treatment plant to improve the cleanliness of wastewater have helped to facilitate a marked improvement in the environmental performance of the company's facilities by significantly reducing its consumption of water and electricity compared to its former paper production process. We are continuously improving our production processes to enable major savings – financially and environmentally – through circular economy solutions.



## Ecologically sustainable and high-quality products

Traditional single-use coffee cups have a plastic coating that prevents the absorption of liquids or grease. ISLA® food board utilises a water-based dispersion coating during the board production phase. The cups, plates and straws made from the board do not contain plastics or harmful waxes. Of course, being plastic-free also means that these cups, plates and straws are easily recyclable.

Another product line that continues to bring in strong business for the company as the market is growing is our range of AEGLE® folding boxboard. The properties of the plastic-free, non-fluorinated barrier board suit a range of packaging needs, including greasy or frozen foods, pharmaceuticals and cosmetics.

We also believe that the increasing pace of urbanisation will increase the need for our Absorbex® laminating paper and our high-quality sawn timber for demanding joinery and construction end uses.

## People come first

In all that we do, people come first. The solutions we create answer to people's needs. We listen to people, we are alert to change in the world and collaborate closely with our stakeholders.

We develop new products and solutions by combining expertise – working together across our own organisation and with external partners. Internally, our "people first" attitude means giving people space, which lets them express the entrepreneurial spirit that fuels our development and renewal. It is also important to be in constant dialogue with our neighbourhood and to support wellbeing activities, especially in the city of Kotka.

We advance change for good by making the more sustainable option the easy one. At Kotkamills, we are able to answer people's demands today and deliver solutions that are sustainable for tomorrow. The state of the environment obliges people to make the more responsible choices. Change is supported through legislation and tighter restrictions on, e.g., the use of single-use plastics.

Companies must respond to the change in order to succeed – and even to survive. We are here to enable and accelerate change.

Markku Hämäläinen, CEO

# Kotkamills was one of the main partners of Bürgerfest

Bürgerfest, a two-day citizens' festival hosted by Federal President Frank-Walter Steinmeier, was held in Berlin in August. Finland was the partner country in 2019, and Kotkamills was one of the main company partners of the event.

Visitors were intrigued with Kotkamills' circular economy story. During the event Kotkamills had an exhibition tent in the area, and Kotkamills CEO Markku Hämäläinen had the honour of attending a reception held by the Federal President.

German Federal President Frank-Walter Steinmeier (left) and Kotkamills CEO Markku Hämäläinen met at the Kotkamills tent at the Bürgerfest citizens' festival.





# Kotkamills Group







# Company

**Kotkamills Group specialises in the production of consumer board, laminating paper and wood products.**

Kotkamills Group Oyj is a Finnish limited liability company established on 5 February 2015. Kotkamills Group Oyj and its subsidiaries form the Kotkamills Group (hereinafter, the “Group” or the “company”). In addition to the parent company, the Group comprises Kotkamills Oy and its subsidiaries Kotkamills Absorbex Oy and Kotkamills Wood Oy.

Kotkamills Oy was established in 2010. The multinational equity investment company OpenGate Capital owned the operations of Kotkamills Oy until 2015 when the Finnish equity investment company Funds purchased the majority of the company’s shares. The state-owned Finnish Industry Investment Ltd, Elo Mutual Pension Insurance Company, and investment company Nordic Mezzanine Oy became the other new owners along with the company’s senior management.

Kotkamills Oy operates as an independent limited liability company, which has its domicile in Helsinki. The CEO of the company is Markku Hämäläinen and the Board of Directors is chaired by Hannu Puhakka.

**The company employs some 500 people. Most of the employees work in Finland, but about 2% of them are employed in branch offices in Germany and Spain.**

The company’s key stakeholders include employees, customers, owners, suppliers and subcontractors, interest groups, the authorities and the media. The company actively maintains open and constructive cooperation with all the stakeholders.

The Group specialises in the production of consumer board, laminating paper and wood products. Its operations are divided into two business segments: Consumer Boards and Industrial Products. The Group’s main brand names are ISLA® and AEGLE®, the consumer board brands, and ABSORBEX®, the laminating paper brand. The Group’s production plants are located in Kotka. The production of thin saturated base kraft paper was discontinued at Taininonkoski in Imatra on 22.1.2019; since then, Kotkamills has subcontracted the production. In addition, the company has branch offices in Germany and Spain.

The Group’s key business risks are related to changes in the general competitive situation, demand and supply in the paper, paperboard and wood product markets, the economic cycles and the geopolitical situation. The Group’s business operations are dependent on the reliability of materials management, production plants, logistics and information systems, and on the cost development of energy, fibre and other raw materials, transport and labour. Risk management is discussed in more detail in the financial statements and Board of Directors’ report for 2019.

## NextGen Cup Challenge

Kotkamills was announced as one of the winners in the global innovation initiative NextGen Cup Challenge, launched in February by the NextGen Consortium that aims to address single-use food packaging waste globally by advancing the design, commercialisation, and recovery of food packaging alternatives. The Consortium works across the value chain – with brands, municipalities, material recovery facilities, and manufacturers.

[> Link](#)



## World Circular Economy Forum

Circular and bioeconomy solutions to the plastics problem and its controversial nature were discussed at the World Circular Economy Forum organised in Helsinki by Sitra in June. Kotkamills' CEO Markku Hämäläinen gave a presentation and participated in the panel discussion.

[> Link](#)

SITRA

## Evaporation plant a global leader in energy efficiency

In August Kotkamills announced its project cooperation with energy and water services provider Adven. At the turn of 2020–2021, Kotkamills' paper and board mill will adopt a closed-cycle solution to boost chemical recovery. The new solution will reduce the environmental load by thousands of tonnes.

[> Link](#)



## 4evergreen alliance

Cepi, the European association representing the paper industry, announced in November a new alliance called 4evergreen. Kotkamills joined as a TierOne member. The alliance engages and connects industry members from across the fibre-based packaging value chain and boosts the contribution of fibre-based packaging in a circular economy.

[> Link](#)



## WorldStar packaging Awards 2019

Adara Pakkaus Oy and Kotkamills collaborated in the creation of a container specifically for the collection of plastic-free and easily recyclable paper cups made of ISLA® board. In May the container designed by Adara Pakkaus Oy's Kaisa Pietilä was awarded in the WorldStar Packaging Awards 2019 Competition. The competition is one of the major events of the World Packaging Organisation (WPO) and is the pre-eminent international award in packaging.

[> Link](#)

## Towards plastic-free events

In July Kotkamills and the Finnish ice hockey club KooKoo teamed up to reduce the plastic waste at KooKoo's home games to as close to zero as possible. Kotkamills' plastic-free AEGLE® and ISLA® barrier boards enable the reduction.

[> Link](#)

## FachPack trade fair

FachPack is the most important European trade fair for packaging, technology and processing. In September Kotkamills was there, showcasing its unique water-based dispersion coated barrier boards and introducing new plastic-free food service packaging solutions.

[> Link](#)

2019

2020



# Kotkamills management policy

In its operations, the company seeks to be a professional, responsible and active player in its industry.

We know our customers, we keep our promises and we are a flexible supplier.

We care about people, the environment and results. We perform our work with quality in mind, and we are committed to continuously reducing the environmental impacts caused by our operations and to preventing the contamination of the environment.

In all our operations, we take into account the principles of continuous improvement and sustainable development, environmental aspects, safety and effective laws and regulations. We require the same of our stakeholder groups as well.

We are initiators and innovators. We continuously carry out systematic development work to find new solutions and to meet customer requirements. We accept challenges and continuously develop our work methods. We reform and renew together.

We pay special attention to the workplace atmosphere and to occupational and product safety, and we aim at open interaction and communication, taking our employees and our stakeholders into account.



Paperboard machine 2, commissioned in 2016.



## Kotkamills recognised for positive safety development

Kotkamills is a member of the Finnish Institute of Occupational Health's Zero Accident Forum, a national network of workplaces that strive for continuous improvement of occupational health and safety and the sharing of best practices.

The Zero Accident Forum awards level classifications to its member workplaces. In March, Kotkamills' integrated mill was awarded the classification "Heading for the World's Forefront" for its overall positive safety development.



# Sustainability principles

The company is committed to managing and developing its business operations responsibly in matters related to the economy, the environment, people and society. The Group meets and, if necessary, exceeds the requirements set by customers and national laws and regulations. The Group adheres to its values and principles in all the countries where it operates. Kotkamills affirms its commitment by means of written corporate responsibility principles that incorporate principles concerning ethics, the environment, social responsibility, safety, product safety and the management of the origin of wood and fibre.

The Group's key principles include responsibility in all operations and continuous improvement. The Group sets targets for its business operations, environmental and product safety, corporate security and employee wellbeing, and monitors their achievement. Information about the Group's corporate responsibility targets and their achievement is disclosed to stakeholders. Subcontractors and partners are required to comply with Kotkamills' values and corporate responsibility principles. The Group's management systems have been verified by accredited third parties (ISO, OHSAS and CoC certification).



Kotkamills makes Absorbex® paper from sawdust.



## Together towards plastic-free game events

The Finnish ice hockey elite league, Liiga, has been increasingly environmentally conscious, especially since the beginning of 2019, when it launched the Liiga Environmental Program. The aim of this program is to reduce the environmental impact of the league by taking concrete actions.

Kotkamills and ice hockey club KooKoo signed a partnership agreement in summer 2019. The shared goal is to reduce the plastic waste at KooKoo's home games to as close to zero as possible. The use of Kotkamills' plastic-free AEGLE® and ISLA® barrier boards enables plastic-free game events.

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# A circular economy forerunner





# A circular economy forerunner

Kotkamills is continuously developing its own operations and its cooperation with various stakeholders to optimise resource efficiency and minimise the environmental impacts.

The circular economy business models provide an excellent framework for developing the internal functions of the integrated unit and for building new kinds of collaboration models.

## Resource-efficient integrated mill

Our integrated mill is capable of efficiently utilising wood raw material in the various stages of the production chain. Paper and board production utilise the sawdust and wood chips created when sawing spruce timber into planks.

Turning sawmill by-products into raw materials that are suitable for our other production processes while minimising things like logistical impacts is both economically and environmentally beneficial.

Our pulp mill cooks the sawdust into cellulose pulp, which is then used without bleaching as raw material for Absorbex®. Our chemi-thermomechanical pulp (CTMP) mill grinds the wood chips into semi-chemical pulp, which is then used as raw material for the middle layer of paperboard.

Currently, the black liquor created as a by-product of cellulose pulp production is utilised in the energy production of the mill. We are exploring the potential to refine the tall soap to crude tall oil. We could then get greater value added from black liquor and its capacity to bind carbon could be better leveraged.



# Sawdust binds carbon dioxide

Used correctly, sawdust is an excellent tool in the fight against climate change.

When a tree grows, it binds carbon. One cubic metre of wood removes approximately 0.9 tonnes of carbon dioxide from the atmosphere.

The carbon stays in products manufactured from wood throughout their life cycle. Burning and rotting release the carbon bound in wood back into the atmosphere.

Sawdust is an industrial by-product. Kotkamills uses it in the production of Absorbex® paper, which has its primary uses in high-pressure laminates and surface films for wood-based panels. Their life cycle can be as long as several decades. The carbon is thus prevented from contributing to climate change for a long time.

The majority of sawdust in Finland ends up being burned as bioenergy, either directly or after being pressed into pellets. The carbon bound in the sawdust is then immediately released into the atmosphere, where it will accelerate climate change.

Kotkamills currently uses about 20 per cent of the sawdust produced in Finland, and it is expected that the use of sawdust will increase in the future.

## 1. TO THE SAWMILL

- Spruce logs
- From certified forests in southern Finland
- An average of 1,200 solid cubic metres per day



## 2. FROM ONE LOG

- 46% timber
- 25% wood chips for use as raw material for board products
- 13% sawdust
- 11% bark for energy production by local energy companies
- 5% shrinkage and waste (waste is used in energy production)

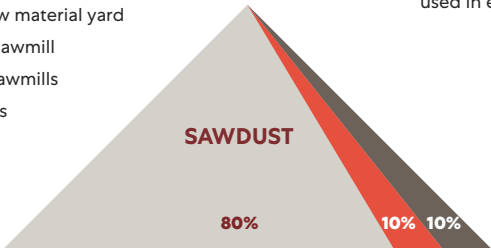


13%



## 3. SAWDUST

- Stored in an asphalted raw material yard
- 10% from the Kotkamills sawmill
- 80% from other Finnish sawmills
- 10% from Russian sawmills
- All from PEFC™ or FSC® certified sources
- An average of 2,000 solid cubic metres per day



## 4a. PULP MILL

- Pulp for the Absorbex® paper machine
- Black liquor for raw material for bioenergy production in a recovery boiler



## 4b. RCP PLANT

Raw materials include corrugated cardboard boxes and other recyclable board products, such as Kotkamills' plastic-free cupstock and recycling boxes



## 5. PAPER MACHINE

- Absorbex® products bind carbon dioxide
- Absorbex® Eco consists of up to 25% recycled fibre
- An average of 470 tonnes per day



## 6. ABSORBEX®

Absorbex® paper, which has its primary uses in high-pressure laminates and surface films for wood-based panels

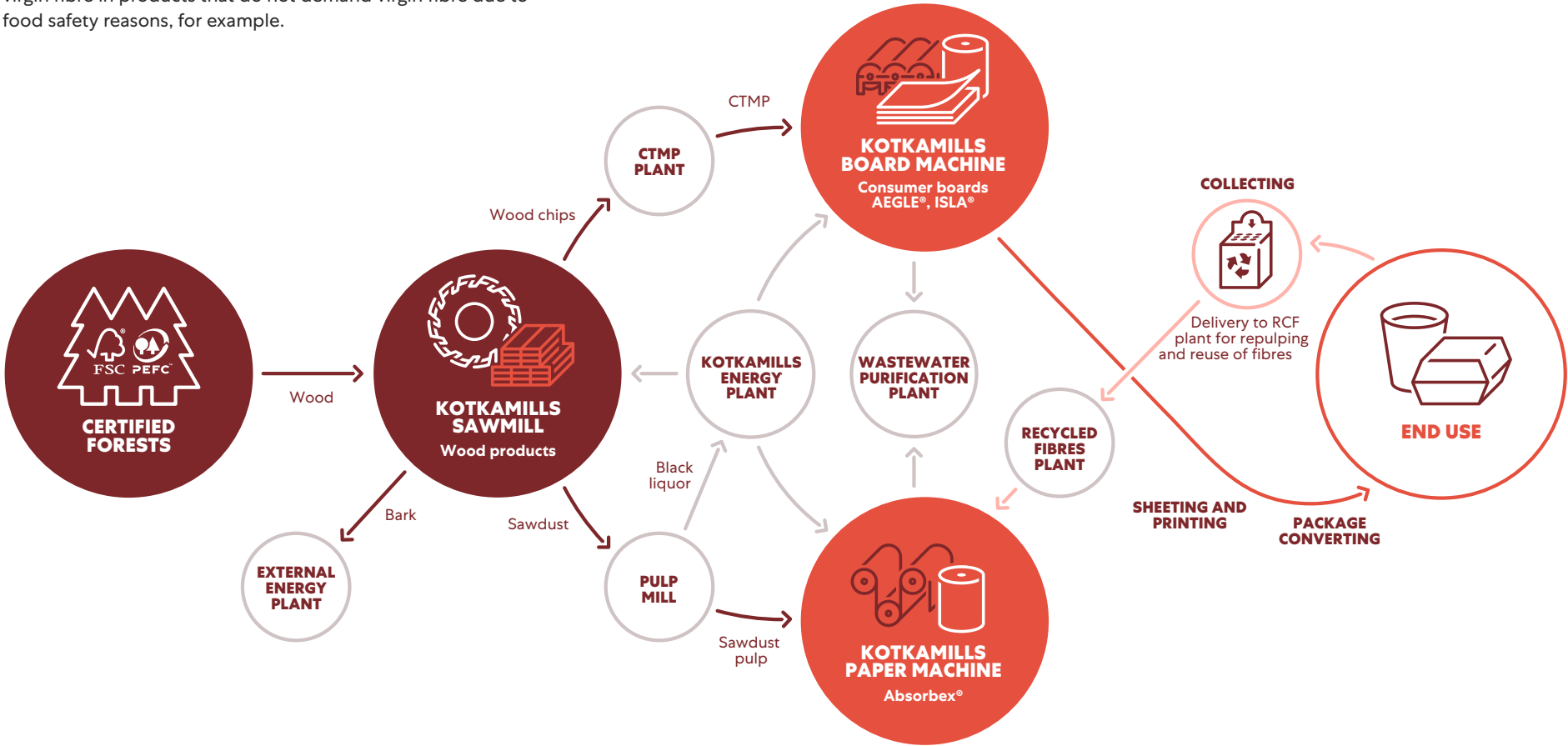




# The game changer loop

High-quality northern wood fibre can be recycled numerous times for a variety of products. Recycled fibre can replace virgin fibre in products that do not demand virgin fibre due to food safety reasons, for example.

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Together with our local cooperation partners, we built the Game Changer Loop, a closed cycle that now serves as a reference in planning various circular economy models for other operating environments.



# Together we can accelerate change for good

We at Kotkamills have already started the change by producing fully recyclable packaging materials. Our continuous development efforts are respectful to the needs of consumers and the environment.

The virgin wood fibres used in Kotkamills' fully recyclable AEGLE® and ISLA® boards are sourced from PEFC™ or FSC® certified forests. The chemicals used in the production are widely used in paper production and meet the strict requirements prescribed for use with food service board. The fibres of products made from board can be repulped up to seven times in paper or board production.

The recyclability of the board is assessed and verified with the PTS Method RH:021/97 test process for the recyclability of paper, carton and board packaging and of graphic print products. The recyclability and repulpability of all AEGLE® and ISLA® board grades have passed the process-specific tests and have met the prescribed requirements for the products.

## Recyclable and environmentally friendly boards

Cups, plates, straws and other paper products made from Kotkamills' boards can be recycled along with normal paper and cardboard recycling. Plastic-free AEGLE® and ISLA® boards are designed to be easy to recycle and repulp. Products made of Kotkamills barrier board are sustainable and that is why many converters, brand owners and end-users have replaced plastic products and even plastic coated board products with products made of AEGLE® and ISLA® boards.

## Sustainable and sound food service packaging

Together with converters, brand owners and other stakeholders in the packaging industry, we want consumers to have sustainable and sound food packaging choices. We offer our customers sustainable material solutions and we produce them responsibly by using raw materials, energy, water and other resources efficiently, and we also recycle the by-products.





# Beautiful, practical and ecological packaging

Luonkos Finland Oy Ltd's facial cleansing oil cakes are packaged in Kotkamills' board. The inner part of the packaging features ISLA® Duo board for resistance to grease and moisture, while the outer part is made from abrasion-resistant AEGLE® White board.

"These are the world's first cosmetics products packaged in Kotkamills' fantastic plastic-free materials. The products are made from oils, superfoods and waxes, so conventional board would not be able to withstand their oily consistency. The printability of these packaging materials is very good," says Jonna Vesterinen, Co-Founder and Product Developer at Luonkos.

Luonkos' packages are hexagonal, foldable, non-adhesive and easily recyclable.

Luonkos' packaging is manufactured by Starcke. "We thoroughly tested ISLA® Duo's suitability for these cleansing cakes. The best qualities of AEGLE® White are its haptic surface, creasability and the printability of the foil," says Starcke's Chairman of the Board Ari-Veli Starcke.

"Our packaging has has been extremely well received. Customers are really interested in the beautiful, practical and ecological packaging."

Jonna Vesterinen, Co-Founder and Product Developer



## Luonkos Finland Oy Ltd

- Innovative cosmetics made from the best natural ingredients
- All products are handmade and eco-friendly





# Economic impacts

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# Economic impacts

**Kotkamills' responsibility is founded on the notion of profitable business. The company's economic measures have far-reaching impacts, for example, in terms of job preservation and in creating social wellbeing. Kotkamills strives to be a reliable employer, supplier and partner.**

**Kotkamills' economic responsibility means taking care of the company's profitability and competitiveness. In a broader sense, it means focusing on the economic impacts that operations have on stakeholder groups outside the company, on a local scale and even beyond.**

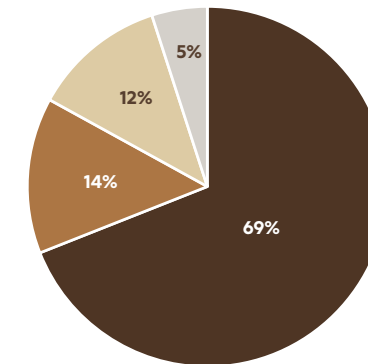
## Economic value added

Kotkamills' operations create direct economic value added mainly through product sales. Kotkamills' revenue was EUR 343 million in 2019. More than 90% of this consisted of deliveries to countries other than Finland.

In 2019, Kotkamills distributed economic value added outside the company particularly in the form of various costs related to operations. These costs consisted of wood raw material and fibre-based materials, such as cellulose pulp and recycled fibre, chemicals and extenders, electricity and natural gas, as well as a variety of services, such as logistics and servicing.

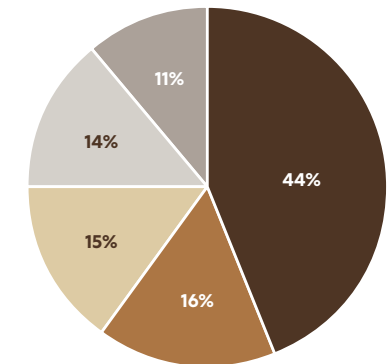
### GEOGRAPHICAL BREAKDOWN OF REVENUE

Revenue 2019: 343 M€



- Europe
- Middle East & Africa
- Asia
- North & South America

### BREAKDOWN OF THE RAW MATERIAL AND SERVICE COSTS DIRECTLY RELATED TO PRODUCTION ACTIVITY IN 2019



- Wood raw material and fibre
- Energy
- Other services and materials
- Logistics
- Chemicals



# Procurement

Kotkamills seeks to mobilise local and regional suppliers in its purchases whenever possible. In particular, Kotkamills procures servicing, contracting and logistics services from local suppliers.

The choice of suppliers is influenced by a number of factors, such as the price of the commodity and its operating and capital cost, delivery time, payment and other commercial terms and conditions, quality certifications, environmental aspects and certification, occupational safety performance and certification, product safety requirements, the management of wood fibre origin traceability (Chain of Custody), the supplier's desire and capacity to commit to Kotkamills' supplier specifications, as well as the level of the performance and decision-making guidelines (Code of Conduct) provided by the supplier to the personnel and suppliers of its own.

## Local impacts and anti-corruption

Kotkamills is a significant employer locally. In 2019, Kotkamills paid its employees EUR 32 million (31.7 MEUR) in salaries and remunerations; 96% of which went to employees in the Kymenlaakso region.

In all of its operations, Kotkamills complies with national laws and generally accepted ethical standards. The Group is regularly audited by customers, and these audits also often cover its ethical values and modus operandi. No deviations from any ethical principles regarded as good or valuable have been identified during such audits.

All forms of corruption or bribery are strictly prohibited. Kotkamills strives to ensure that its suppliers and partners operate in compliance with similar principles.





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# Climate change mitigation





# Climate change mitigation

Environmental impact management, environmentally friendly products and climate change prevention are the cornerstones of our operations; these cornerstones define our success in environmental management and are one of the most important factors guiding our operations.

The mills’ close proximity to the city centre of Kotka, the increasingly stringent environmental and energy requirements, and the growing environmental awareness create their own requirements for environmental management.

The continuous development of operations plays an increasingly more significant role. Our environmentally friendly product portfolio, energy efficiency improvements and our efforts to promote a circular economy are some successful examples of development projects already implemented.

## Raw materials

The main raw materials used at the mills in Kotka are logs, sawdust, wood chips, purchased cellulose pulp, and recycled fibre. The total volume of wood used in 2019 was around 1.3 million cubic metres, most of which (about 93%) had been procured from Finland. Alongside wood, another important and necessary raw material is water. More than 99% of all the water used is surface water – in practice, river water or seawater. In fact, the most significant source of raw water for the mills in Kotka is the Kymijoki River, which flows into the Gulf of Finland, and from which the mill draws a significant part of the water needed in the production processes. A total of 13.6 million cubic meters of water was withdrawn from the Kymijoki River.

We aim to utilise the side flows and fractions of the mills in Kotka as efficiently as possible.

Logs arriving to the integrated sawmill are fully utilised. The by-products generated during the sawmill’s log refining process, like wood chips and sawdust, are used to manufacture cellulose and semi-chemical pulp. Around 7% of the sawdust used to manufacture cellulose pulp comes from our sawmill, as does about 37% of the semi-chemical pulp, or wood chips, used to manufacture paperboard. Our production focuses on products that are recyclable and long-lived. The long useful life in end-use solutions,



93%  
of the wood we used, was procured from Finland. The carbon stays in products manufactured from wood throughout their life cycle.

particularly Absorbex® laminating paper and sawmill wood products, helps to combat climate change through their long carbon sequestration capacity.

One important raw material in our manufacturing of Absorbex® paper is recycled fibre. We used more than 20,000 tonnes of recycled fibre in 2019. Using recycled fibre reduces the use of virgin fibre.

We seek to utilise the waste and side flows generated during the various processing stages at the mills in Kotka in the best way possible. The mill utilisation rate of by-products and waste was 97% in 2019. The majority of the waste and side flows consists of bark, which is used for energy, and purification plant sludge, which is used for soil improvement. In 2019, the share of hazardous waste was less than 0.1%. The volume of landfill waste was 2,500 tonnes, mainly consisting of green liquor sludge created in the manufacturing of cellulose pulp. Landfill waste volumes decreased compared to 2018.

When assessing the environmental friendliness of our products, we take into account not only the manufacture of the product but also its environmental impact after use.

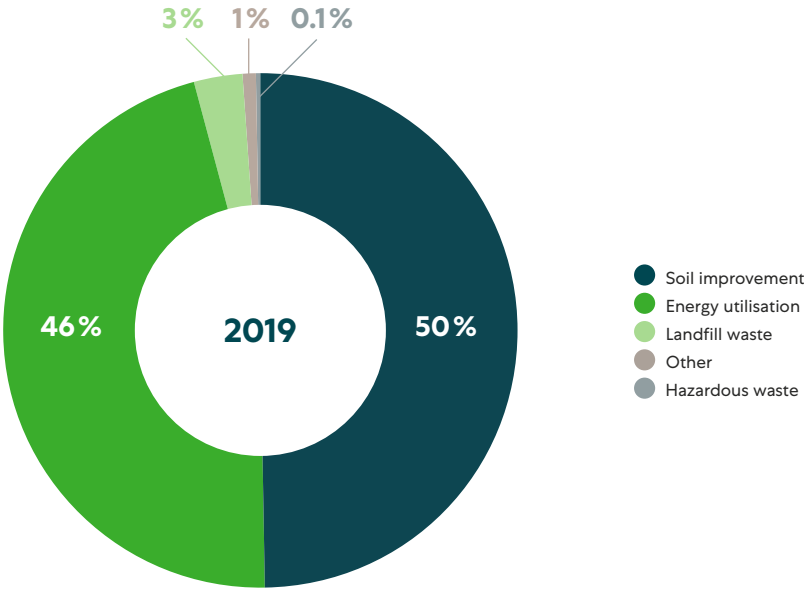
An example of this is our fully recyclable, plastic-free paperboard and its recyclability back to products instead of incineration.

Plastic-free paperboard cups and plates used at the mills in Kotka are collected in dedicated containers. The containers are then taken directly to the mill's own recycled fibre treatment plant, where the cups and plates are made into recycled fibre. Paper machines use this fibre along with cellulose pulp as raw material for making laminating paper. Laminating paper is used to manufacture products, such as trays, tables, kitchen counters and other products with a long useful life. Thus the used cups and plates are recycled into products and retain carbon for years to come.

We utilise sludge from the wastewater purification plant for soil improvement. Incineration or fertiliser use are traditional options for sludge disposal. We strive to do our part in mitigating climate change by seeking alternative solutions. One good example of our circular economy way of thinking and operating is using the purification plant sludge as nutrient fibre, which is used for soil improvement on farm fields. With the help of nutrient fibre, we can increase the yield from these fields and at the same time perform an environmental action by binding carbon in the fields instead of incinerating it. In 2019, we were able to use lime-stabilised sludge to bind 6,905 tonnes of CO<sub>2</sub> in the soil. This amount corresponds to the annual CO<sub>2</sub> emissions of 670 Finns.

In addition to reducing our carbon footprint, we were able to replace 115 tonnes of nitrogen and 23 tonnes of phosphorus by recycling nutrients back to the fields. Without nutrient recycling from sludge, we would have had to produce these nutrients by using less ecological means.

PROCESS WASTE AND SIDE FLOWS BY APPLICATION



In 2019, we were able to use lime-stabilised sludge to bind 6,905 tonnes of CO<sub>2</sub> in the soil. This amount corresponds to the annual CO<sub>2</sub> emissions of 670 Finns.





# Side streams generated in the Kotkamills production plant are recycled

Soilfood Ltd., which processes industrial side streams into fertilizers and soil amendment products, reported that together with its industrial clients it achieved emission reduction of over 29 000 t CO2-e in 2019. In collaboration with Soilfood, Kotkamills has been able to recover fibre sludge nutrients, generated as a side stream in production, for use in farmland.

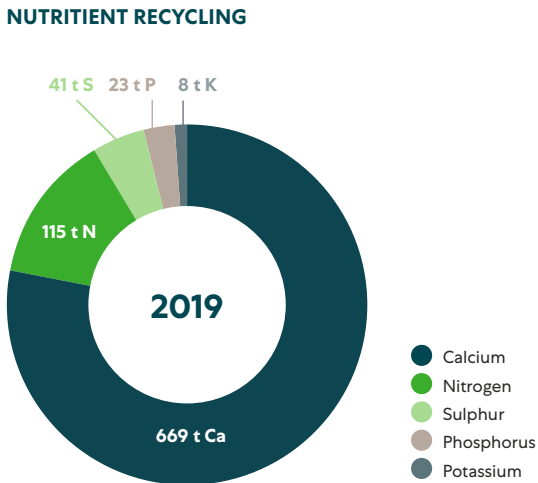
The forest, bioenergy and food industries, in particular, generate side streams that can be used in agriculture. The fibre sludge from Kotkamills Oy’s paper and board mill has been reclaimed for several years.

“It has been important for us to find a sustainable way to recycle the side streams from our production. In collaboration with Soilfood, we are able to direct the fibre sludge to farmland as a replacement for nitrogen and phosphorus. This benefits all parties because without the recycling of sludge, these nutrients would need to be produced with less ecological ways,” notes Environmental Manager Jani Heiskanen from Kotkamills.

The cooperation with Soilfood reduced carbon dioxide emissions last year by an amount equal to the carbon footprint of about 670 Finns.

“In the big picture, each side stream is significant”

Jani Heiskanen,  
Environmental Manager



# SOIL FOOD





# Air protection

Most of the emissions to air from the mills in Kotka originate in energy production. The most significant of these emissions are sulphur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), particulate matter (PM) and carbon dioxide (CO<sub>2</sub>). The management of sulphur and nitrogen oxide emissions to air is important especially in terms of comfort and air quality in the region. SO<sub>2</sub> and NO<sub>x</sub> emissions weaken air quality through acid rain and soil acidification. Industrial PM emissions are primarily an aesthetic adversity. CO<sub>2</sub> is a significant enabler of climate change.

Nitrogen oxides generated at the Kotka mills are mainly from the production of process steam and electricity. Along with carbon dioxide, nitrogen oxides are the most significant emission to air from natural gas-based energy. The emissions per produced paper and board tonne have clearly been decreasing since 2016. The long-term development work in energy production is clearly reflected also in the downward trend in nitrogen emissions.

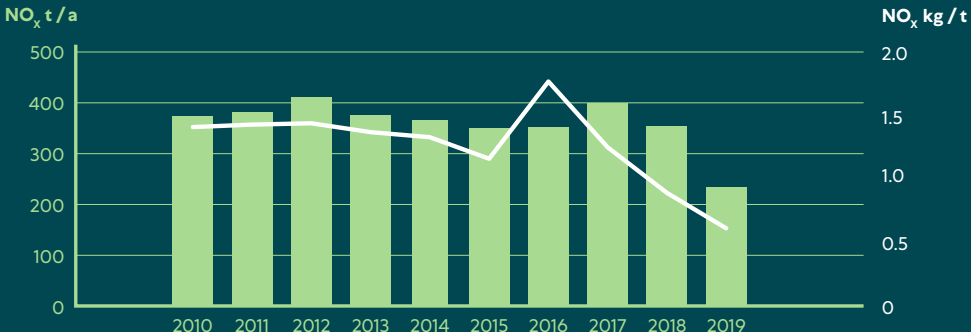
## Nitrogen oxide emissions decreased by about 30% compared to the previous year.

The particulate matter of the mills in Kotka were 13 tonnes in 2019 (10 tonnes in 2018), NO<sub>x</sub> 234 tonnes (353 tonnes) and SO<sub>2</sub> 22 tonnes (26 tonnes). Fossil CO<sub>2</sub> emissions were at a level close to the previous year and were 244,053 tonnes (237,768 tonnes). However, particularly the NO<sub>x</sub> and CO<sub>2</sub> emissions are dependent on the manufacturing level and thereby on the energy demand.

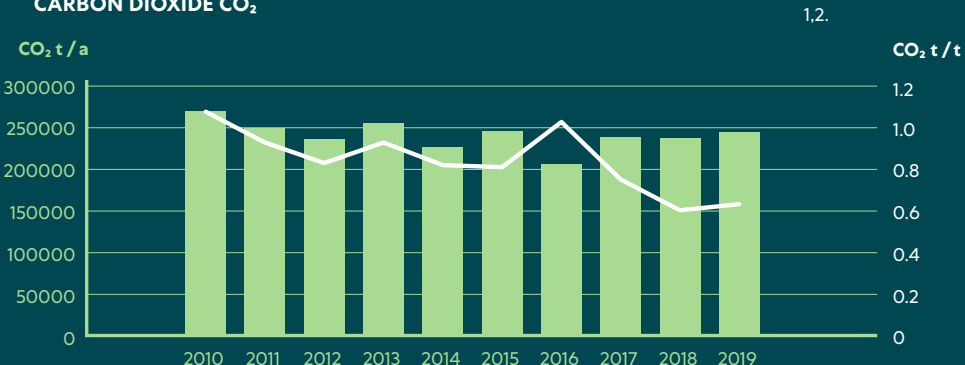
There was a slight increase in CO<sub>2</sub> emissions to air compared to the previous year. However, the amounts were very close to the previous year's level. However, the amount of CO<sub>2</sub> emissions is mainly impacted by the mill's production level and the need for process heat. From 2016 onward, the development of production efficiency is also positively visible, as the carbon dioxide emissions are proportionate to production.

The sulphur dioxides (SO<sub>2</sub>) generated mainly in the pulp production process impact the air quality and comfort in the region. SO<sub>2</sub> emissions were 14% lower than in the previous year. Sulphur dioxides emissions have decreased significantly since 2010.

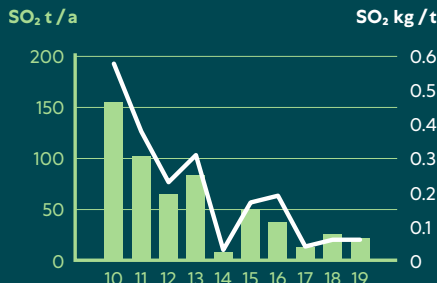
NITROGEN OXIDES NO<sub>x</sub>



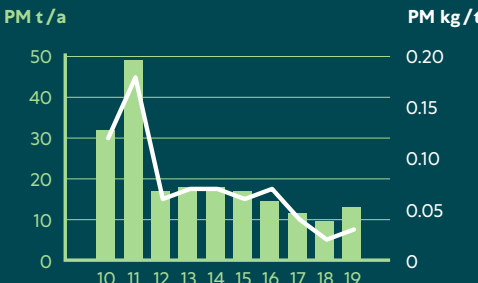
CARBON DIOXIDE CO<sub>2</sub>



SULPHUR DIOXIDE SO<sub>2</sub>



PARTICULATE MATTER PM



The level of air protection remained good and has improved markedly in the 2010s. Since 2010, sulphur dioxide emissions to air have decreased by 86%. Nitrogen oxides have decreased by 37% overall. Particulate matter and carbon dioxide emissions also have decreased clearly overall. Noteworthy is the development of emissions proportionate to production; it indicates that the emissions level has clearly improved, despite the increased production.

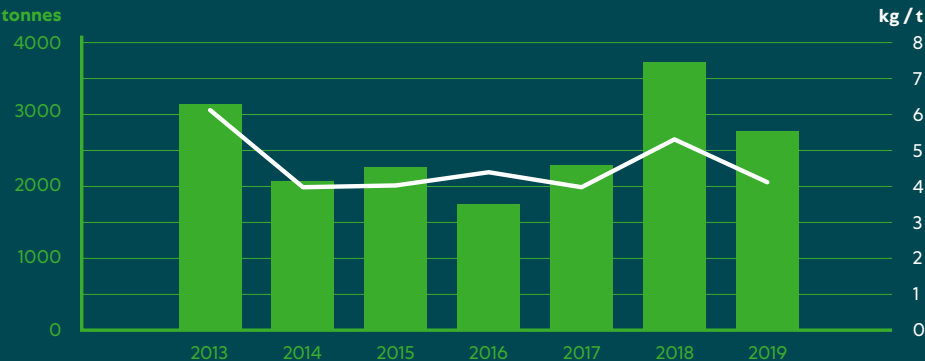
# Water protection

One of the Kotka mills' key environmental indicators is wastewater treatment performance. The various processes at the mill create process water that has to be treated before it can be discharged into the waterway. The production of paper, paperboard and pulp at the mill is a water-intensive process. Water is used for cooling, producing steam and manufacturing pulp and paper.

The purification plant's key performance indicators are chemical oxygen demand (COD), nitrogen (N) and phosphorus (P). The purpose of wastewater treatment is to purify the process water as effectively as possible so that the water discharged from the treatment plant is ecologically safe. Kotkamills Oy's wastewater purification plant discharged 10,500,000 m³ of purified wastewater into the Baltic Sea in 2019.

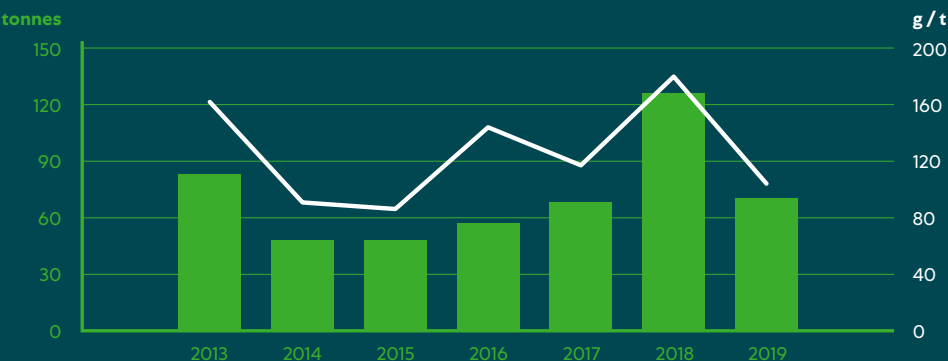
In 2019, there was a clear improvement in the load levels of the purified water. However, nitrogen and solid materials were a challenge for the wastewater purification plant during the first months of the year. By the end of March, the purification plant's performance reached a good level and remained there for the rest of the year. The development of wastewater emissions compared to the previous year is clearly visible, especially when the load is proportionate to the produced paper, board or pulp tonne. Chemical oxygen demand (COD) was at 2,774 tonnes, phosphorus (P) 6.8 tonnes and nitrogen (N) 70 tonnes in 2019.

CHEMICAL OXYGEN DEMAND (COD)

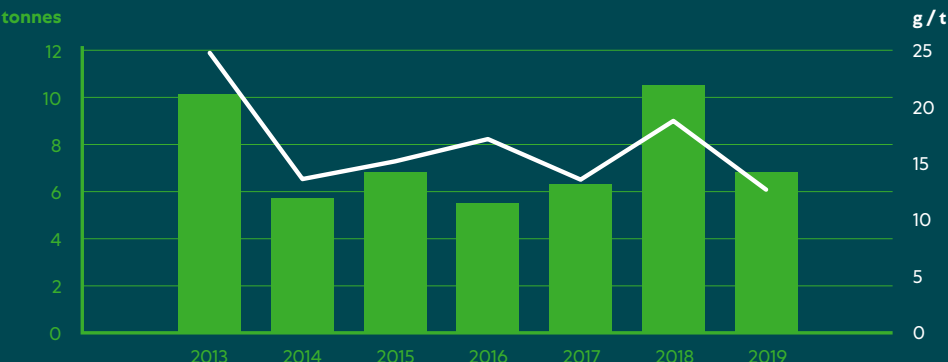


Includes the manufacturing of paper, paperboard and pulp

NITROGEN



PHOSPHORUS





# Energy

Improving energy efficiency and reducing energy consumption are among our most significant focus areas. The aim is to improve energy efficiency by making existing processes more efficient and through investments in new technologies. In fact, monitoring energy efficiency and mapping development targets are part of continuous improvement. Most of the energy produced at our mills in Kotka is generated in a natural gas-fired, energy-efficient, combined cycle power plant. The proportion of biofuels in relation to our total energy production is 37% and mainly consists of black liquor burned in the recovery boiler. The proportion of biofuels in relation to our energy production increased slightly compared to the previous year.

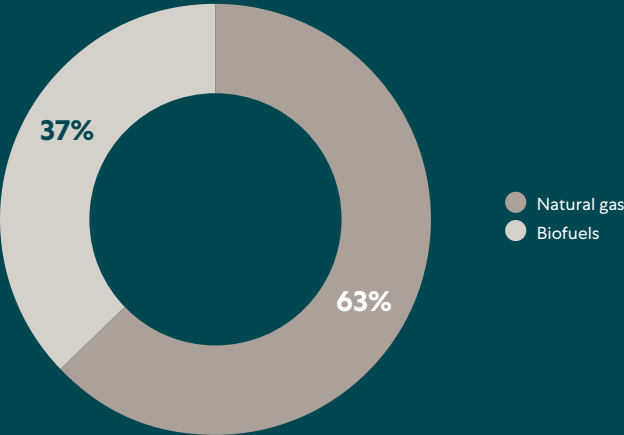
The mills in Kotka are energy self-sufficient in terms of heat and electricity. The electricity self-sufficiency rate was 127% in 2019. There was a clear improvement from the previous year, especially in the electricity and heat production of the combined cycle power plant. The efficiency of both electricity and heat production improved by more than 10%.

The most significant investments and measures affecting energy efficiency in 2019 focused on the development of the pulp mill's black liquor evaporation plant. The first phase of the new black liquor evaporation plant was commissioned during the autumn maintenance outage. The new MVR blower unit will boost the efficiency of the black liquor evaporation process and decrease the thermal energy demand. The decreased thermal energy demand will be visible in the decreased primary energy demand.

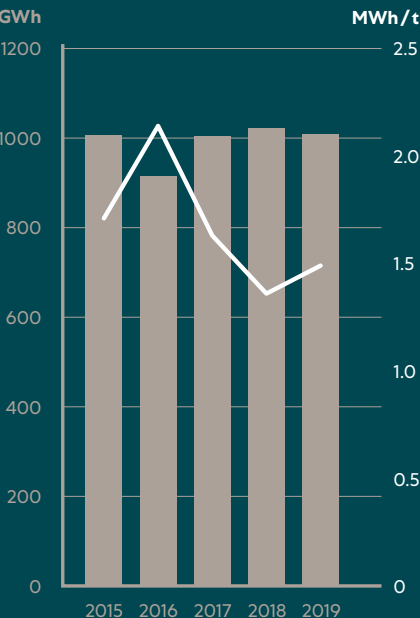
In terms of improving energy efficiency, the focus will shift to the autumn 2020 maintenance outages when the pulp mill will get a facelift. The pulp mill's washing line will be modernised, and phase two of the black liquor evaporation plant will be commissioned. These changes are expected to significantly improve the pulp mill's energy efficiency.

The measures taken and the investments made with to improve energy and process efficiency are clearly visible in the use of energy at the mills in Kotka. The total heat consumption has remained unchanged compared to 2015, even though there has been growth in production volumes. The electricity needed for the production process has decreased by 15% compared to 2015.

ENERGY CONSUMPTION

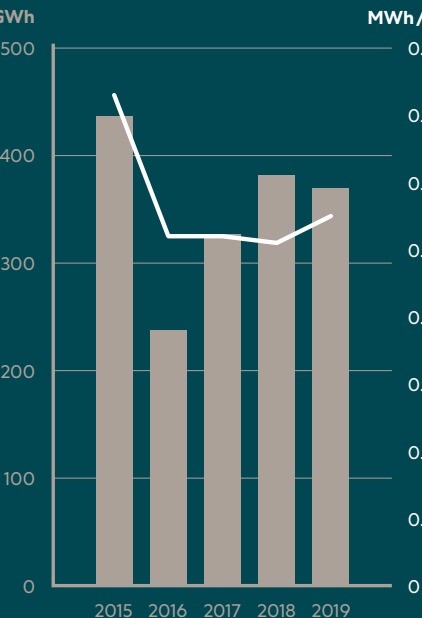


HEAT CONSUMPTION



Includes the manufacturing of paper, paperboard and pulp

ELECTRICITY CONSUMPTION



Includes the manufacturing of paper, paperboard and pulp

# Mill material streams

INTRODUCTION

COMPANY

A CIRCULAR ECONOMY FORERUNNER

ECONOMIC IMPACTS

CLIMATE CHANGE MITIGATION

RAW MATERIALS

AIR PROTECTION

WATER PROTECTION

ENERGY

MILL MATERIAL STREAMS

SOCIAL IMPACTS

RAW INGREDIENTS	
Log	404 773 m³
Wood chips	113 015 ka-tn
Sawdust	280 754 ka-tn
Cellulose pulp	70 552 ka-tn
Recycled fibre	20 081 ka-tn
FUELS AND ELECTRICITY	
Natural gas	1225 903 MWh
Biofuels	734 936 MWh
Electricity sales	91 035 MWh
WATER INTAKE	
Surface water	13 600 119 m³
Municipal water	2 4618 m³
Share of surface water	99.8 %



KOTKAMILLS
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PRODUCTS	
Pulp production	289 251 t
Paper and board	385 286 t
Timber	187 453 m³
BY-PRODUCTS	
Tall oil soup	7 222 t
Turpentine	253 t

EMISSIONS TO AIR	
Fossil CO <sub>2</sub>	244 053 t
Bio CO <sub>2</sub>	287 076 t
SO <sub>2</sub>	22 t
TRS (S)	0.2 t
NO <sub>x</sub> (NO <sub>2</sub> )	234 t
Particles	13 t

WASTE BY TO APPLICATION	
Energy utilisation	37 870 t
Soil improvement	41 546 t
Landfill waste	2 518 t
Hazardous waste	63 t
Other	645 t

EMISSIONS TO THE WATER	
Treated water	10 489 231 m³
Suspended solids	657 t
BOD	445 t
COD	2 774 t
Nitrogen	70 445 kg
Phosphorus	6 826 kg





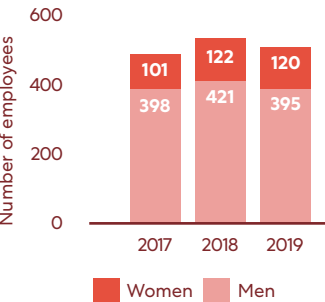
- INTRODUCTION
- COMPANY
- A CIRCULAR ECONOMY FORERUNNER
- ECONOMIC IMPACTS
- CLIMATE CHANGE MITIGATION
- SOCIAL IMPACTS**
  - EMPLOYEES
  - EMPLOYMENT RELATIONSHIPS
  - WELLBEING AT WORK
  - TRAINING AND DEVELOPMENT
  - SALARIES AND REMUNERATION
  - EQUALITY
  - ETHICS AND THE SHOP STEWARD SYSTEM



# Social impacts

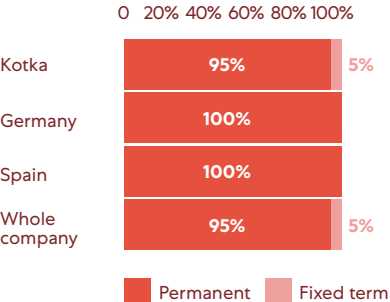
# Employees

## Number of employees by gender



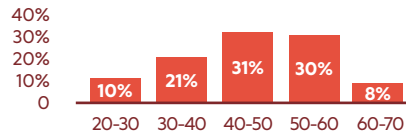
At the end of 2019, Kotkamills Group Oyj had 515 employees: 395 (around 78%) were men and 120 (around 22%) were women.

## Form of employment



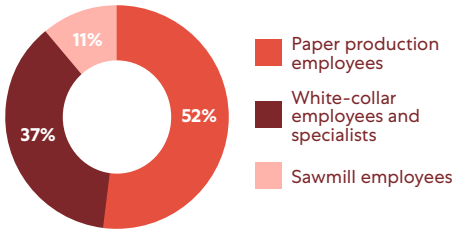
Most of the employees (95%) have permanent employment contracts. Fixed-term employment relationships are used, for instance, when hiring substitutes for employees on sick leave and social leave, such as parental leave.

## Age structure



The age structure of the Group's employees is on a sustainable foundation, taking into account employee retirement and turnover. The average age of employees was 44 at the end of 2019. The average age for men was 46 years and for women 44 years. The age structure is consistent throughout the various business operations and employee categories.

## Number of employees per division

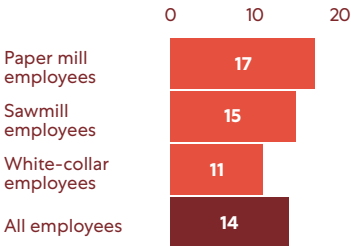


At the end of 2019, paper production employees accounted for 52% of the total number of personnel, sawmill employees 11%, and specialists and white-collar workers 37%.



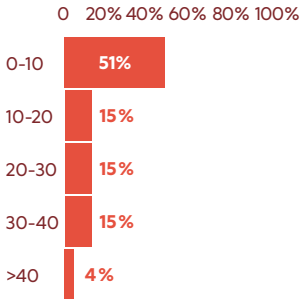
# Employment relationships

## Duration of employment



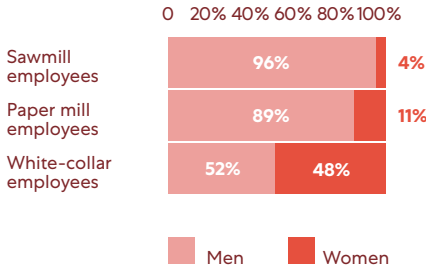
Employment relationships have traditionally been long in the Finnish paper industry. The average duration of employment of Group employees was around 14 years at the end of 2019. The average duration of employment of paper mill employees was nearly 17 years, and the average duration of employment of sawmill workers was around 15 years and white-collar employees about 11 years.

## Duration of employment grouped by years



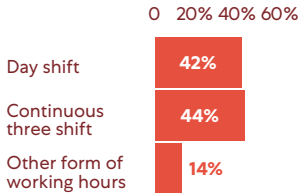
At the end of 2019, the average duration of employment for women was around 10 years and for men around 16 years. 15% of the Group's personnel have been in an employment relationship for at least 30 years; about half of personnel less than 10 years.

## Gender distribution by function



The proportion of fixed-term employment relationships in relation to the total number of personnel was 1% for women, and 4% for men. The proportion of women was smaller than the proportion of men in all employee categories. Women accounted for 11% of all paper and board production employees and 4% of sawmill workers. Women accounted for 48% of all white-collar employees.

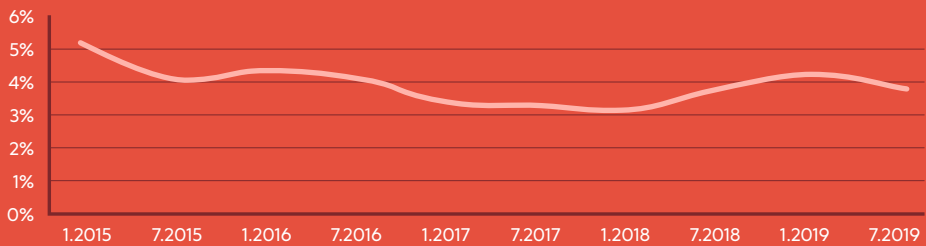
## Working time distribution



About 40% of employees work during the day primarily in specialist positions. Nearly 60% of employees are in various shift work duties in the paper mill and the sawmill.

# Wellbeing at work

## Sickness absences



Employee working capacity can be measured, for example, by means of the sickness absence rate. With sickness absences decreasing, the working capacity of the Group’s employees has improved over the past four years. The sickness absence rate was more than 5% at the beginning of 2015 and 3.8% at the end of 2019.

# Training and development

The company encourages its employees to actively develop themselves. The Group enables its employees to update their professional skills and complete new qualifications, even during working hours. Around 2% of personnel has completed either a vocational qualification or a higher education degree during 2019. According to the company’s personnel policy, all new employees must have at least a vocational qualification. The company cooperates closely with vocational institutions in particular.

The company invested EUR 100 000 in training in 2019. The total duration of the training provided was 2 500 hours, and the total number of participants was 320. In other words, around 62% of the employees participated in training of some sort provided during working hours.

The Group cooperates very closely with local educational institutions in particular. It secures a practical training placement for all process engineering students at the local vocational institute to complete their mandatory training requirement at its production plant. In this way, the company ensures the availability of a competent workforce, engaging the students at an early stage and offering them the opportunity to work for the company after they complete their studies.

Every employee has the opportunity to have annual performance and development appraisals with their immediate supervisor. The company management monitors the completion of the appraisals. The need for development in this area has been recognised, and the company management actively encourages supervisors to have appraisals with their subordinates regularly.



# Salaries and remuneration

The company has achieved salary equality. In particular, its paper and board production employees are subject to the collective agreement for the paper industry, which contains detailed provisions on salaries. The company adheres to the principle of equal pay for equal work. In 2019, the average annual salary of a paper mill employee was around EUR 52,200.

White-collar employees' salaries are also equal and fair. The basic salary for identical jobs is the same, with any differences being based on experience gained through the duration of employment. The average annual salary of a white-collar employee and a senior salaried employee was around EUR 55,000. There are no differences between men's and women's basic salaries.

The company pays monthly or annual performance bonuses. The performance bonuses paid in 2019 totalled around EUR 1,050 per employee. All employees participate in the remuneration system.

Initiative bonuses were paid to 20 employees, totalling around EUR 3,000.

# Equality

Kotkamills complies with the Act on Equality between Women and Men and the Non-discrimination Act. Each employee must address any discriminatory or inappropriate behaviour. Each employee must report any inappropriate behaviour or conduct to their supervisor or the shop steward.

The company integrates equality into induction training and training for supervisors. In addition, shop stewards and occupational health and safety (OHS) representatives play a key role in terms of equality. Their role in promoting equality is taken into account when organising trainings.

The company's recruitment practices are appropriate. Gender, age, religion, family relations or other non-work aspects play no role in terms of the availability of training or career development opportunities. The purpose of personnel planning is to anticipate future needs well in advance: mainly needs arising from changes in terms of retirement or competence needs.

Discrimination is not tolerated in any form and the company seeks to prevent all foreseeable forms of discrimination. Managers and supervisors play a key role in preventing discrimination. No discrimination cases were reported within the company in 2019.

An employee satisfaction survey is being supplemented with several questions concerning equality and the fulfilment of the plan. One of the overarching goals is to develop Kotkamills Oy into an even more equal workplace.





# Ethics and the shop steward system

The Group complies with national laws and generally accepted ethical standards. The Group is regularly audited by customers, and these audits also often cover its ethical values and modus operandi. No deviations from any ethical principles regarded as good or valuable have been identified during such audits. The Group is committed to respecting human rights, which is also reflected in its internal guidelines. The management has committed to creating a Code of Conduct during the first half of the year.

Freedom of association for all employees is of paramount importance. The company management engages in active dialogue with key trade unions. The company adheres to national collective agreements for the paper industry and seeks to have a positive influence on local agreements as well. The rate of organisation in the category of blue-collar employees is nearly 100%.

Each category of employees has its own shop steward system, with the representatives being elected from among volunteers. Shop stewards enjoy legal protection in accordance with the Employment Contracts Act. A shop steward represents their category of employees and manages issues raised by the employees in cooperation with the employer’s representatives.

The different categories of employees also have their own OHS representatives, who represent the employees in matters related to occupational health and safety.

The Group has a Cooperation Negotiation Committee, which consists of representatives of the company management and representatives elected by the different categories of employees. The committee convenes four times a year to discuss matters in accordance with the Act on Cooperation within Undertakings.

For several years, the Group has cooperated with the Sotek Foundation, which promotes employment by organising activities for people who have difficulties finding employment, as well as the long-term unemployed and partially disabled. Through Sotek, Kotkamills offers a job to people in a difficult employment situation and, at the same time, creates wellbeing for the whole local community.





