UPM Kaukas

Environmental and societal responsibility 2024

UPM Kaukas

The mills of UPM Kaukas are located on the shore of Lake Saimaa in Lappeenranta. A pulp and paper mill, a biorefinery and a sawmill operate at the mill site. UPM's largest research and product development center, UPM Forest's Eastern Finland wood-sourcing management and the Lappeenranta forest service office are also based at Kaukas.

The Kaukas mills form a unique integrated bio-forestry unit that produces pulp, magazine paper, sawn timber, biofuels, biochemicals and energy from renewable raw materials. In addition to UPM's mills, Kaukaan Voima Oy's biopower plant operates at the site, producing heat and electricity for Kaukas' mills and the inhabitants of the local area. Approximately 90% of the energy produced by Kaukaan Voima is made from renewable biomass.

Having several operations in the same area has many benefits. Integrated production can be controlled efficiently from the viewpoint of environmental protection. The short distance between the mills improves cooperation, decreases the need for transport and enables the processing of effluents by a shared biological treatment plant. Sustainably sourced raw wood material, the integrated mill unit's high level of energy self-sufficiency and the recycling of by-products into raw materials are the cornerstones of our operation.

This EMAS report covers the environmental aspects of the Kaukas pulp and paper mill. Societal responsibility is discussed with regard to the entire integrated mill unit.

Production capacity	300,000 tonnes of coated magazine paper 700,000 tonnes of softwood pulp 380,000 m^3 of sawn pine 130,000 tonnes of renewable diesel and naphtha
Personnel	Paper mill 244, pulp mill 271, sawmill 111, biorefinery 95, UPM Forest 25, NERC 186, others 14. Overall, there are almost 1,000 people working at UPM Kaukas in Lappeenranta.
Products	Magazine papers: (MWC, LWC): UPM Star, UPM Ultra, UPM Sol Pulp: UPM Conifer Wood products: UPM Timber, UPM Plus Biofuels: UPM BioVerno diesel and UPM BioVerno naphtha Biomedical products: GrowDex®, FibDex®
Side-products	Lime fractions and sludge
Residues	Pitch oil (biorefinery), turpentine and tall oil (pulp mill)
Bioenergy	Heat energy and electricity
Certificates	EMAS (EU Eco-Management and Audit Scheme) (paper and pulp mill) ISO 14001 – Environmental Management System (paper and pulp mill, sawmill, biorefinery) ISO 50001 – Energy Management System (pulp mill) ISO 9001 – Quality Management System (paper and pulp mill, sawmill) ISO 45001 – Occupational Health and Safety Management System (paper and pulp mill, sawmill) ISO 22000 – Food Safety Management System (pulp mill) PEFC™ Chain of Custody – Programme for the Endorsement of Forest Certification (paper and pulp mill, sawmill) FSC® Chain of Custody – Forest Stewardship Council (paper and pulp mill, sawmill) ETJ+ – Energy Efficiency System (paper mill, biorefinery) ISCC (International Sustainability and Carbon Certification) (biorefinery) RSB (Roundtable on Sustainable Biomaterials) (biorefinery) All certificates can be found from UPM's Certificate Finder (available at www.upm.com/responsibility)
Environmental labels	UPM pulp products have the approval for use in EU Ecolabel and Nordic Ecolabel paper. EU Ecolabel FI/11/001 for paper products About PEFC products: www.pefc.fi For more information on FSC products, please visit http://fi.fsc.org

UPM Kaukas Environmental and Societal Responsibility 2024 is a supplement to the Corporate Environmental and Societal Responsibility Statement of UPM's pulp and paper mills (available at www.upm.com) and provides mill-specific environmental and societal performance data and trends for the year 2024. The annually updated mill supplements and the UPM Corporate Environmental and Societal Responsibility Statement together form the joint EMAS Statement of UPM Corporation. The next Updated UPM Corporate Environmental Statement and also this supplement will be published in 2026.

UPM is a material solutions company, renewing products and entire value chains with an extensive portfolio of renewable fibres, advanced materials, decarbonization solutions, and communication papers. Our performance in sustainability has been recognized by third parties, including EcoVadis and the Dow Jones Sustainability Indices. We operate globally and employ approximately 15,800 people worldwide, with annual sales of approximately €10.3 billion. Our shares are listed on Nasdaq Helsinki Ltd.

UPM – we renew the everyday
Read more: upm.com

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Promoting Sustainable Forest Management
www.pefc.org

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EU Ecolabel
www.ecolabel.eu
EU Ecolabel : FI/011/001

Review of the year 2024

At Kaukas mills, the year 2024 was varied. The effects of the unstable global political situation were still visible, with the paper mill running full months at times while having occasional interruptions. In the spring, political strikes stopped production for three weeks, and in the autumn, a similar shutdown was held in connection with the maintenance shutdown. Kaukaan Voima's summer shutdown was longer than in the previous year, and the paper mill adjusted its production according to demand.

The environmental impact of the UPM Kaukas integrated mill unit remained mostly at the same level throughout the 2000s. The performance of the wastewater treatment plant was good throughout the year, and the pulp mill's process development produced good results, reducing emissions to wastewater treatment and further to water. Production continued to be material efficient, raw materials were carefully utilized and all waste generated in the process was recovered, except for the green liquor dregs from pulp production.

Surplus electricity from the pulp mill was utilized in the integrated mill site's other units, and the electric boiler introduced the previous year produced some of the sites steam. The use of an electric boiler reduces fossil carbon dioxide emissions, as it can be used to produce steam without using natural gas.

The operations in 2024 were in accordance with the environmental permit. The only environmental permit deviation was related to the spread of wastewater treatment plant odors to the environment in the spring. The situation was controlled with chemicals, and in the autumn, the basin that caused odor problems was dredged to improve the odor situation. The development of odor management will continue.

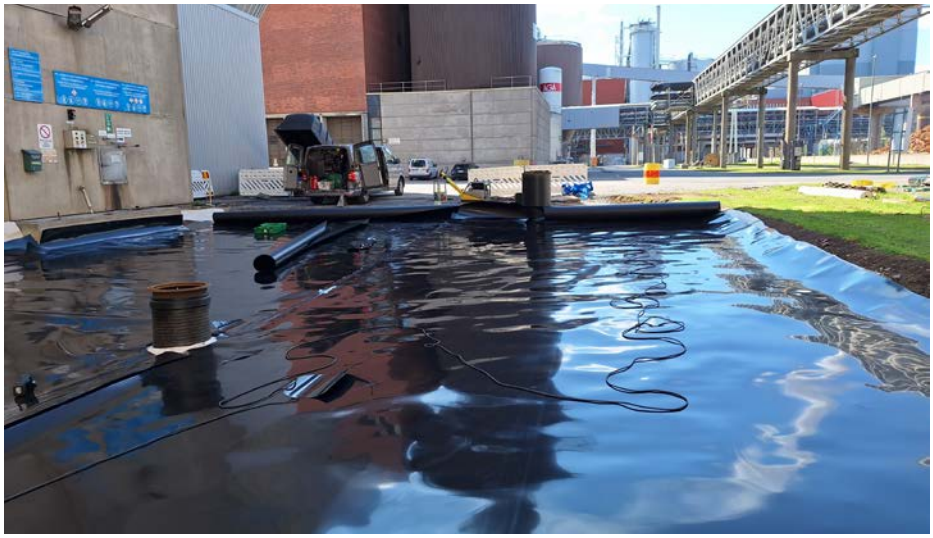
The environmental performance met the obligations of the Best Available Techniques (BAT) document. The target value of water consumption per tonne of product for the paper mill was not achieved.

Of the 32 stakeholder reports received during the year, 27 were related to various odor situations in wastewater treatment and four to noise. There was also feedback about waste being dropped from a truck between the mill site and the landfill. All feedback was responded to and efforts were made to correct the situation as quickly as possible.

UPM has set ambitious emission reduction targets for 2030, and Kaukas' 2024 targets supported this development. The goals were to reduce fossil carbon dioxide emissions, improve energy efficiency, reduce water use and cut down the specific emissions and total phosphorus emissions to the water system from the pulp mill. 68% of the nutrients used at the treatment plant were recycled.

The energy efficiency targets were fully met. The pulp mill was over self-sufficient in steam and electricity, and the specific energy consumption of the paper mill decreased. The electricity consumed by the electric boiler is not included in the consumption of electricity in pulp production. The emission targets were largely met, and fossil carbon dioxide emissions decreased as the use of natural gas decreased. The pulp mill's specific emissions to water decreased, and water use also decreased from the previous year, reaching the BAT level. However, water use is still too high compared to UPM's 2030 targets and requires action. The total discharge of phosphorus to water decreased from the previous year and the summer load was kept under control by placing bundles of tree trunks in the outfall of the treatment plant. The material efficiency of the paper mill was improved and the target for reducing fiber emissions was almost achieved, though the target for water use was slightly missed due to the low utilization rate.

At the pulp and paper mill, the renovation of the chemical unloading sites continued, taking into account groundwater protection needs. The work will continue



Kaukas is a popular destination for student groups.

The control of invasive species in the integrated mill and the Tuosa landfill site was initiated in accordance with the 10-year plan drawn up earlier. Hogweed has been controlled for years, but the plan now also covers other invasive species.

in 2025, after which all chemical unloading sites that required changes will comply with the current requirements.

Towards zero accidents and better employee well-being

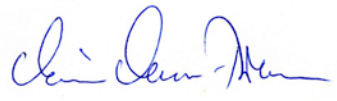
Zero accidents is UPM's goal. Occupational, process and environmental safety are integral to our daily activities and considered second to none. UPM monitors the development of occupational safety with the TRI accident frequency indicator, which considers not only accidents resulting in absence, but also accidents requiring medical treatment or temporary work. The figures include TRI cases of our own and external companies' personnel. At the pulp mill, the TRI frequency was 14.6, which was the poorest result in many years. The corresponding frequency at the paper mill was 2.3, at the research center 3.4, at the refinery 0 and at the sawmill 9.82.

As a precautionary measure, UPM employees and contractors are required to file reports of all near-miss situations and safety and environmental observations to the global One Safety reporting tool. Reported cases are processed daily and corrective actions are initiated without delay. In addition, safety discussions are actively conducted at workplaces, for example, between supervisors and employees, and safety walks are carried out in different parts of the mill.

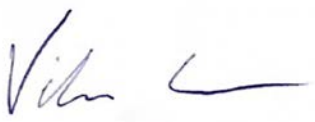
A personnel wellbeing survey (EES) was conducted at the pulp and paper mill in autumn 2024. 88% of the employees responded to the survey at the paper mill and 76% at the pulp mill. Compared to the previous year's survey of the paper mill, the results for 27 questions improved by 39%. 84% of the comments were neutral or positive in content.

UPM's responsibility and societal impact

Responsibility is the basis of UPM's operations, and our impacts extend from the local community to society at large. We source our raw materials from responsibly managed forests and promote sustainable change in society with material solutions that utilize renewable raw materials. UPM is one of the largest employers in Lappeenranta, employing around 1,000 people and around 160 summer trainees in summer. In addition, our operations generate significant tax revenues that support regional vitality. In 2024, UPM's local tax impact in the Lappeenranta area was approximately €15 million. UPM is also committed to strengthening local communities through sponsorship cooperation. For years, the focus has been on learning, reading and exercise among children and young people. Our goal is to inspire young people and open up prospects for them in the forest industry as a workplace. We support this through study visits, mill visits and participation in various events. In addition, we organize forest excursions for schoolchildren, daycare center aged children and other stakeholders.



Minna Maunus-Tiihonen
Environmental Manager



Ville Karvonen
General Manager of the Kaukas Integrated Unit and Pulp Mill

Management of crises and exceptional situations

The following matters are specified under the management of crises and emergency situations, and communications at the mill properties and sites of Kaukas:

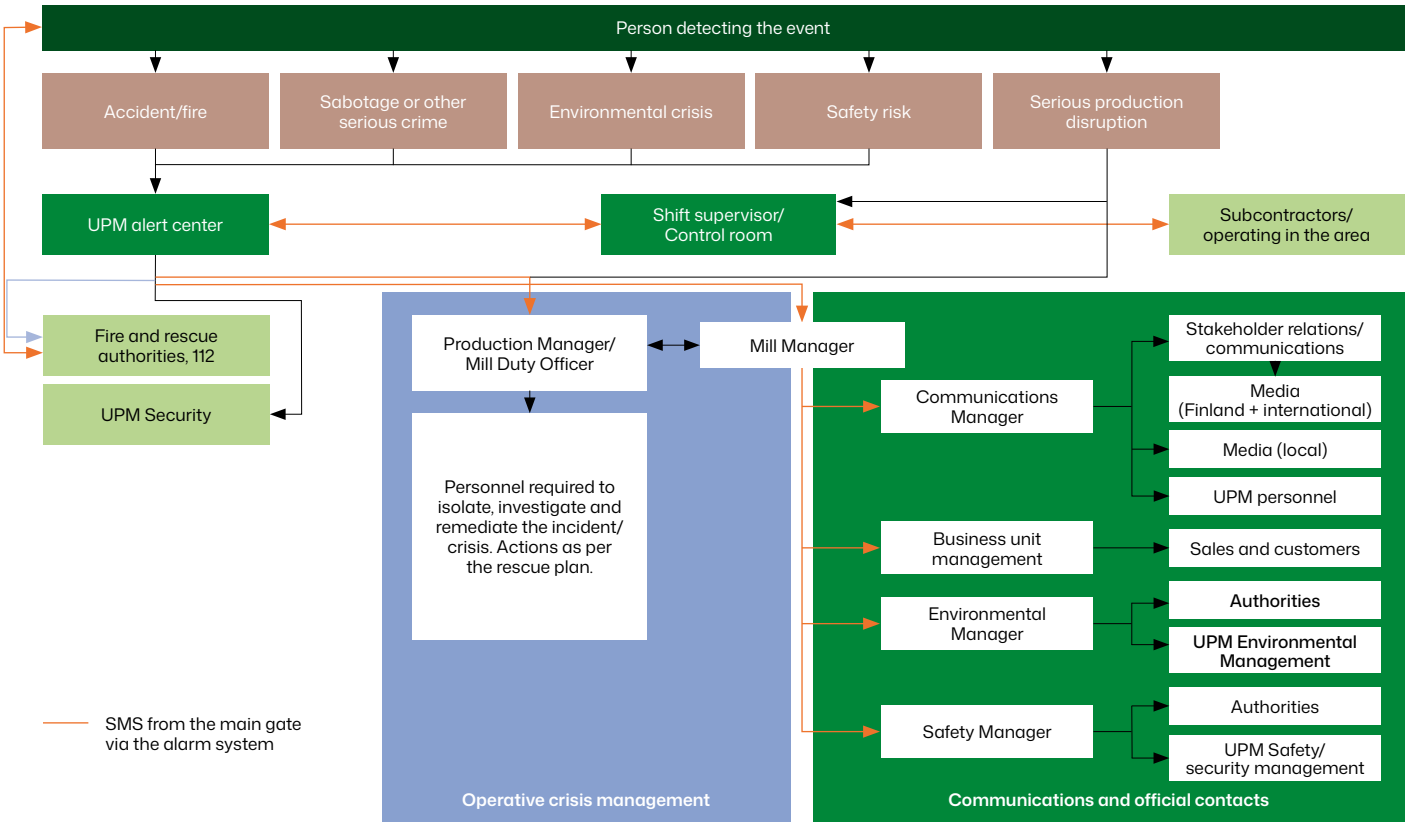
- Serious accidents and hazardous situations (major fires, explosions, chemical accidents)
- Environmental damage
- Serious occupational accidents (also on the way to or from work), traffic accidents at the mill site
- Serious production disruptions
- Other exceptional situations such as sabotage, demonstrations, occupational health and safety risks, risks that could harm UPM's reputation, cyber threats and network destruction, and threatening situations not within Kaukas e.g. at other industrial plants.

Co-operation with local actors

Rescue operations are always led by the rescue authorities. The mill's organization is responsible for technical prevention and directs the extinguishing and rescue operations of its own personnel. The representatives of the production department are responsible for operational management, taking care of the controlled shutdown of production and other measures to bring the exceptional situation under control. Investigation of the incident and the flow of information will proceed in accordance with the organization's chain of command and agreed roles. The crisis communication group either consists of members of the mill's management group or is agreed on separately on a case-by-case basis. Exceptional situations relating to Kaukaan Voima Oy and projects at the Kaukas mill site will be dealt with in accordance with the Kaukas integrated unit's guidelines and the organization's actions. Other external companies located at the mill site will act according to their own guidelines; however, all alerts will be made to the UPM Kaukas mills' emergency number as well as to the general emergency number.

We actively cooperate with the Rescue Department. Among others, the Rescue Department practiced rope rescue and long-distance smoke diving in our mill area. In addition, the Kaukas mill's fire service and the Rescue Department organized three joint drills. Kaukas mill's own fire brigade trains regularly to maintain operational readiness. In 2024, the Kaukas mill's fire brigade turned 120 years.

Crisis communication organization chart



UPM Kaukas

Contribution to UN Sustainable Development Goals in 2024

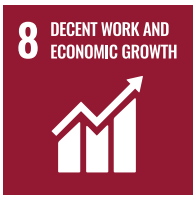
Air

Particle emissions decreased by

56 %

Nitrogen oxides decreased by

18%



Safety

An all-time record at the paper mill at the end of the year:

2,179 days

without lost time accidents.

Proactive safety work has been actively pursued.

The pulp and paper mill has recorded 2,474 incident reports.

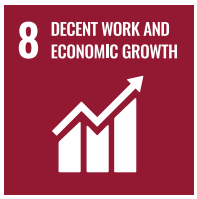
There have been 1,760 safety walks and discussions.

Energy

Of the energy used at the site

98%

was produced from biofuels.
An electric boiler was commissioned.



Health

Kaukas' own sports club Kaukas Lyly's gym had more than

22,000 visitors

in 2024.

Certified fiber

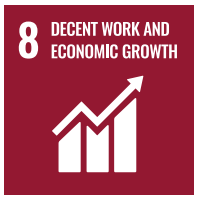
PEFC and/or FSC certified fibers account for

76 %

of paper production, and of pulp production it accounts for

71%

UPM aims to have all fibers used certified by 2030.



Community

In a work placement or apprenticeship, there were

84 apprentices

18 thesis workers

Cooperation was active with different schools and educational institutions.

Water

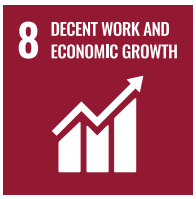
Phosphorus loads to water decreased by

22%

Of the nutrients used in the purification plant

68%

were recycled nutrients.



Employment

UPM Kaukas employed

946 people

and about

160 summer workers

Furthermore, an average of 381 workers from contractors worked at the site daily.

Taxes

The integrated mill unit's local tax impact approx.

EUR 15 million

Real estate tax EUR 0.79 million

Estimate of tax on salaries EUR 1.2 million*

Estimate of corporate income tax EUR 12.8 million based on the number of employees*

* Approximately 24% of corporate income tax goes to municipalities, which is split between each municipality according to their share of business activities and forests operations.

Waste

The only waste taken to landfill was green liquor dregs.
A compost field was built in Tuosa for composting sludge.

Supply chain

approx. 91%

of the integrated mill unit's raw material spend covered by UPM Supplier and Third Party Code (wood not included).

Air

Biofuels such as bark and black liquor accounted for 98% of the energy used at the site. Bark removed from the wood at the pulp and paper mills and sawmills was used at the Kaukaan Voima power plant, while the pulp mill's recovery boiler used black liquor, a by-product of the pulp production process, as fuel. The fossil fuels used were natural gas, peat and light fuel oil.

In 2024, the pulp mill was operated according to planned production schedule, except for the interruption caused by the three-week political strikes in the spring and the September maintenance shutdown, which lasted three weeks. The mill was successfully started up at the end of September and production continued normally until the end of the year. Kaukaan Voima was closed down in April and was started up again at the end of September to support the start-up of the pulp mill after the maintenance shutdown. In October, Kaukaan Voima was shut down once more for a while. During the shutdown of the pulp mill, the rest of the integrated mill unit's heat demand was produced by the auxiliary boiler plant, which has three natural gas boilers and one electric boiler.

In recent years, air emissions have been affected by abnormal operating hours, and the years are not comparable. In 2024, fossil carbon dioxide emissions remained almost at the previous year's level, but were still slightly lower. Natural gas, which is the largest source of fossil carbon dioxide emissions, was used as a supporting fuel in shutdown and start-up situations in Kaukaan Voima's boiler, recovery boiler and odorous gas boiler, and as fuel in the lime kiln and natural gas boilers in the auxiliary boiler plant. The electric boiler built in the previous year increased the pulp mill's production of fossil-free steam.

The specific emissions to air from the pulp mill were at BAT level. Particle emissions from the recovery boiler were in accordance with the permit conditions, and the two electrostatic precipitators that were refurbished in the previous year worked efficiently. There are also plans to refurbish two other electrostatic precipitators in connection with maintenance shutdowns in the coming years, which will further reduce particle emissions.

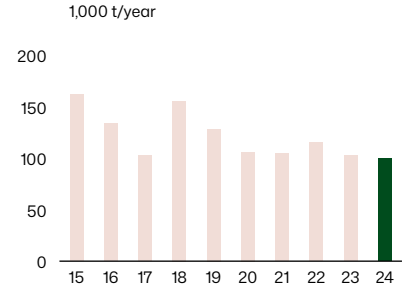
Nitrogen oxide emissions into air decreased from the previous year, thanks to adjustments to the process values of the odorous gas boiler. Sulfur dioxide emissions increased, as their total amount depends on the need to use the back-up burner of the odorous gas boiler and on the combustion fractions used. Since the back-up burner does not have a scrubber for sulfur recovery, the sulfur is removed through the chimney as sulfur dioxide.

In air quality measurements in the city of Lappeenranta, emission of sulfur dioxide and malodorous sulfur compounds (TRS) were below the daily limit values. TRS emissions consist of TRS compounds in the odorous gas from the recovery boiler, the odorous gas boiler and the lime kiln, fugitive emissions and emissions during abnormal situations. The amount of these emissions decreased compared to the previous year.

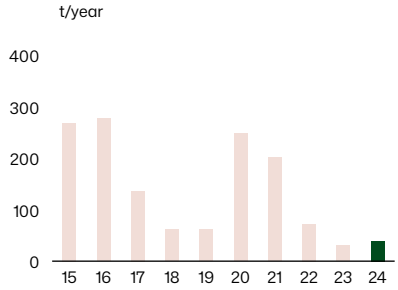
The diffuse emissions of wastewater treatment and sludge treatment, which caused odor problems in the mill environment in spring 2024, are not included in the figures.

The total emissions into the air from the pulp and energy production of the mills of UPM Kaukas are presented in the following graphs describing annual emission amounts. These figures also include UPM's share of the total emissions of Kaukaan Voima.

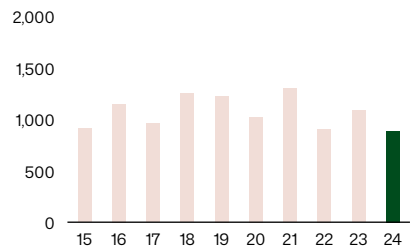
Carbon dioxide, fossil, CO_2, scope 1



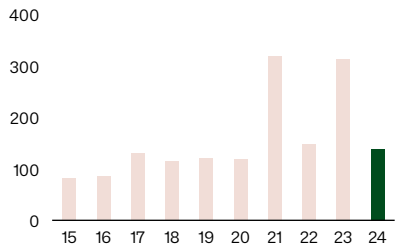
Sulfur dioxide, SO_2



Nitrogen oxides, NO_x



Particulate, TSP



In addition to the emissions of UPM Kaukas, the atmospheric emissions include the share of the energy used by the integrated unit from Kaukaan Voima.

Waste

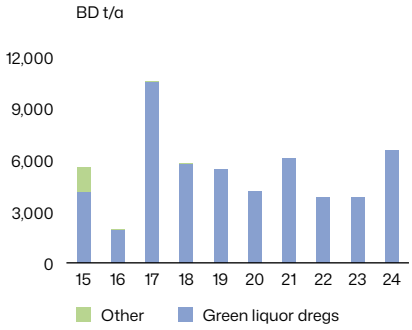
In the past year, pulp and paper production generated around 26,300 tonnes of waste in dry material. The majority of this, 18,600 tonnes, consisted of process waste, 5,900 tonnes of soil from earthmoving operations at the mill site, and the remainder of separately collected waste. The figures include UPM's share of Kaukaan Voima's waste.

6,530 tonnes of waste was deposited at the Tuosa landfill, which was over 70% more than in the previous year. The remaining waste was diverted for reuse either directly or through intermediate storage. The share of reuse was 75% of the total amount of waste. Green liquor dregs, along with fly ash and bottom ash from Kaukaan Voima, was used as raw material for earthworks. Bark sand and sewage treatment plant sludge were used as composting and raw materials. Only the green liquor dregs created in the chemical cycle of pulp were disposed of at the Tuosa landfill, some of which was utilized, mixed with ash, in the structures of the composting field built at the Tuosa landfill site. Slightly contaminated soils were also used in the field structures. Composting in the compost field will start in 2025.

Increasing the utilization rate of process waste requires new solutions for the use green liquor dregs in addition use in our own field structures. Solutions are being sought for this at the group level, and the work is progressing in stages. Crucial breakthroughs were not yet achieved in 2024, but the development work continues actively.

One of UPM's global 2030 sustainability targets is to recycle or reuse all its process waste. One of the most difficult by-products to recycle is green liquor dregs, for which UPM has long sought resource-efficient circular economy solutions.

Waste to Tuosa landfill



The tonnes in the graph are given as dry weights.

Noise

Noise into the surrounding area is caused by the operations of the Kaukas mills. According to the environmental permit, the noise level in outdoor areas of the residential area in the vicinity of the mill site may not exceed 55 dB in the daytime and 50 dB at night. A calculated noise model has been established for the area affected by the mill site, and its accuracy is monitored regularly at least every three years. The monitoring includes noise measurements by an external company, and the noise model is updated in conjunction with investments and significant process changes.

Kaukas also carries out its own noise monitoring regularly both outside the mill area and, if necessary, in various parts of the area. The next time an external company will measure noise will be in 2025. Four noise-related contacts were received in 2024.

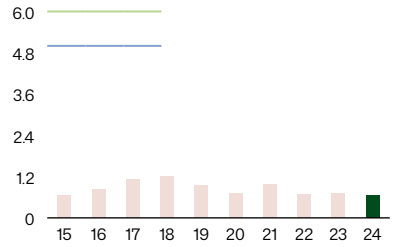
Water

The Kaukas mill used a total of 79 million cubic meters of water in the manufacture of pulp and paper in 2024. 42% of this was process water that was treated at the biological effluent treatment plant before discharge. The rest of the water was cooling water for processes, among other things.

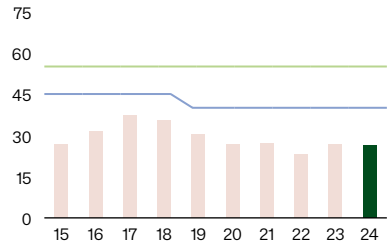
Water consumption per tonne of pulp produced was reduced from the previous year and was within the recommended BAT range. Although improvements were made, reducing water consumption is still one of the key targets of the pulp mill.

Wastewater treatment worked effectively throughout the year. The development measures of the pulp process reduced the wastewater load, which was reflected in the reduction of both the load entering the treatment plant and the load discharged into the lake, compared with the previous year. The separation efficiency of the purification plant was good with regard to all load components. 97% of the BOD load directed to the purification plant was removed, 81% of the COD load, 85% of phosphorus, 66% of nitrogen and 58% of organic halogen compounds. In addition, 68% of the nutrients required by the treatment were replaced by recycled nutrients. The typical summer increase in phosphorus emissions was moderate, partly due to the use of a chemical for proactive odor sequestration and partly due to the continued nutrient sequestration activities of the tree trunks in the Pappilanoja pond.

Biological oxygen demand, BOD_7

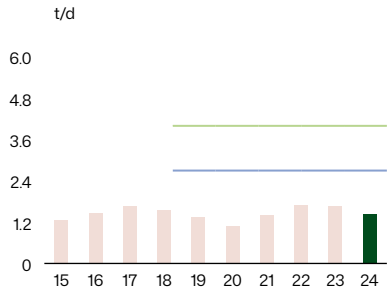


Chemical oxygen demand, COD

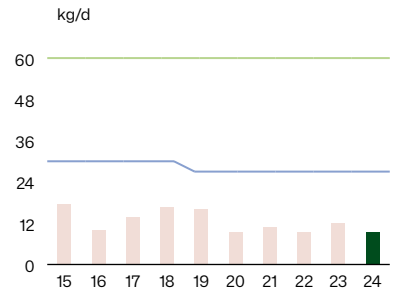


Nitrogen, N

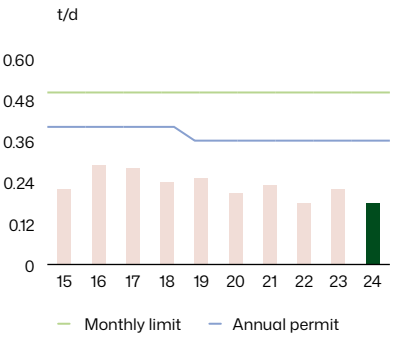
Total suspended solids, TSS



Phosphorus, P



Halogenated organic compounds, AOX



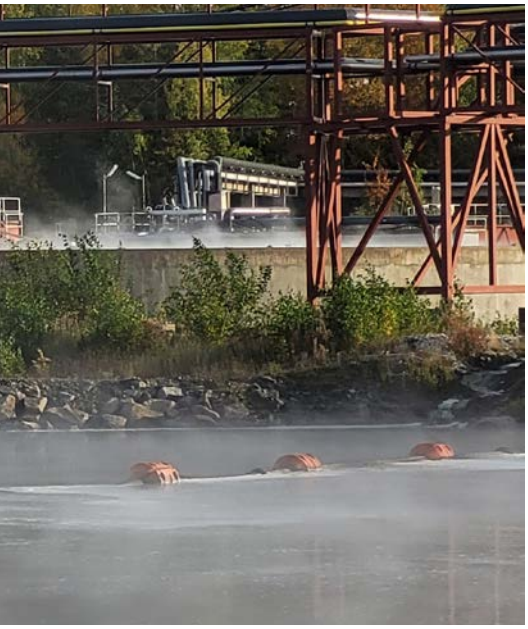
In the autumn, solids were removed from the wastewater treatment equalization basin by dredging to improve the odor situation.

Societal responsibility

To prevent odors, chemicals were introduced into the wastewater treatment pond, which not only absorbed odors but also precipitated phosphorus, reducing the amount ending up in the lake. The tree trunks placed in the Pappilanoja pond in 2020 further reduced nutrient loads during the growing season. The vegetation growing on the surface of the wood material used the nitrogen and phosphorus dissolved in the effluent water from the treatment plant as food, consuming it out of the effluent water and reducing the nutrient load of the plant.

The load to Saimaa decreased for all measured variables compared to the previous year.

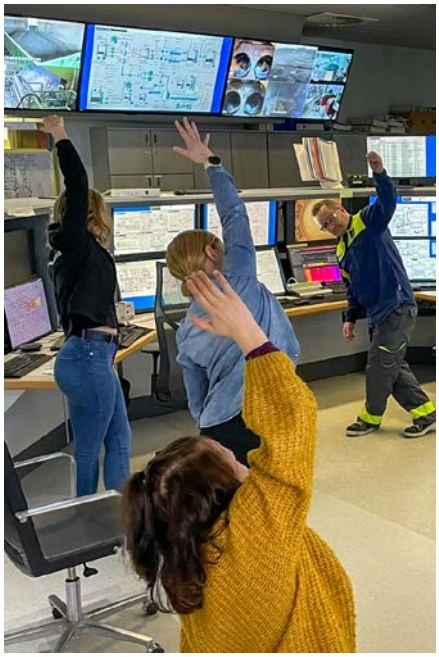
The effluent load from the pulp mill was at the BAT level, and the phosphorus load was below the minimum BAT level. In paper production, waste water loads were at BAT levels, except for water consumption above BAT levels.



Our goal in UPM is to be the industry leader in health and safety. Safety is the cornerstone of our daily operations. We strive to reduce and eliminate accidents through continuous improvements and effective risk management.

We continuously train our staff on safety. Among others, we organized hot work permit and occupational safety card training, emergency first aid courses, training in work at a height and defibrillator training for our staff. At Kaukaa sawmill, all employees are required to have the hot work licence.

Before access to UPM's production sites, contractors participate in UPM safety training, which presents the basic safety requirements. This is complemented by job-specific safety induction and a work permit.



In the spring, Kaukas celebrated a safety and wellbeing week, during which staff were able to listen to lectures on safety and health, take part in a break exercise, measure body composition and grip strength, and learn about the activities of our own sports club Kaukaan Lyly.

Minun työpaikkani days were organized at the paper mill in January, where employees could to bring their families and loved ones to visit the mill. A total of 30 groups and more than 100 visitors visited the mill on three Saturdays. The event received a lot of praise from both the visitors and hosts and provided a unique opportunity to see the environment where a loved one is working.

Well-being and exercise for all staff

UPM encourages its employees to lead an active lifestyle and look after their well-being.

Kaukaan Lyly, Kaukas' own sports club, offers a wealth of exercise opportunities to Kaukas' staff, and the fitness hall has been in active use. In 2024, there were 12 weekly guided exercise classes, and the hall serves, among others, tennis, volleyball, gym and floorball enthusiasts. Some of the gym equipment were replaced during the year to keep the training opportunities up to date.

Lyly organized several family events such as sports competitions, a Christmas party for children and an activity day in Rauha, which attracted a record of 400 participants. Baseball made a comeback after a ten-year pause, and Lyly's team won their own series in the Firmapesis tournament. A new, inspiring addition to the activities were padel tournaments.

In 2024, UPM introduced a company bicycle benefit to encourage employees to move more. Kaukaan Lyly organized a cycling event in the sports hall, where the staff got to know various company bicycles and those providing them. Digital well-being services are also part of everyday life – through online services, employees can participate in well-being challenges and remote exercise classes anywhere.

Working with local communities

UPM believes in open dialogue and close cooperation with local communities. We are committed to promoting the vitality of the communities near our sites and support local actors through sponsorship projects.

UPM Kaukas offers a wide range of jobs for people with skills in different fields and actively collaborates with students. In 2024, we participated in local recruitment events and other events such as the Finnish Forest Products Engineers' Association Roadshow tour. We also participated in the LUT University's Help Earth Breathe event, where students planted a tree sapling for every student who started their studies last academic year. In addition, we visited schools and educational institutions in the area to tell about the opportunities offered by the forest industry.

Most of our sponsorship cooperation focused on supporting reading, physical activity and learning for children and young people. With our help, they organized, for example, sports activities for schoolchildren, summer holiday activities, after-school clubs and free sporting events for children. We provided timber from our sawmill for the traditional Myllysaari Midsummer bonfire built by Lions Club Lappeenranta Saimaa.

In September, we organized a forest excursion for 350 sixth-grade pupils from Lappeenranta together with the Finnish Forest Association. Pupils from 16 classes joined us to learn about forest growth, carbon cycle, recreational use of forests and forest regeneration at learning checkpoints. In addition, every pupil got a chance to plant a tree seedling that will become a part of the forest. The aim of the forest excursions

was to provide pupils with a positive forest experience and increase their knowledge of the use of Finnish forests. According to the feedback we received, we did this well.

Strengthening local economy

We are a major employer, taxpayer and partner of local entrepreneurs, which has a significant impact on the local economy of South Karelia. We generate a significant amount of tax revenue. The real estate tax paid and the municipal share of corporate income tax support the local economy, and the municipal tax and social security contributions that the employees pay from their wages have a significant economic impact in the area. Our local tax impact in the Lappeenranta area was around €15 million in 2024. In 2024, UPM Group's corporate tax paid and real estate tax were approximately €84 million (€221 million in 2023).

As the largest private employer in Lappeenranta, UPM Kaukas employed nearly 1,000 skilled workers in 2024 and hired approximately 160 summer workers, mainly from local educational institutions. In addition, we offered internships to 84 students/trainees and had 18 thesis projects conducted.

UPM's operations also have a broad impact on the forest industry value chain. We use over five million cubic meters of wood at our mills which provides work and a livelihood to tree harvesters and timber truck drivers, loggers and other forestry professionals. In this way, we support the vitality of the entire supply chain and the economic well-being of the region.

Environmental parameters

The figures related to production as well as raw material and energy consumption are published as aggregated figures on group level in the UPM Corporate Environmental and Societal Responsibility Statement.

		2022	2023	2024
Production capacity	Magazine paper	300,000 t	300,000 t	300,000 t
	Pulp	700,000 t	700,000 t	700,000 t
	– softwood	500,000 t	700,000 t	700,000 t
	– birch	200,000 t		
Raw materials	Wood, cooking chemicals, bleaching chemicals, filler and coating pigments, paper manufacturing pigments	See the Corporate Environmental and Societal Responsibility Statement		
Energy	Biomass-based fuels	88%	90%	91%
	Fossil fuels	12%	10	9%
	Purchased electricity [1]			
Emissions to air include UPM's share of Kaukaan Voima's emissions	Fossil carbon dioxide,			
	CO_2 (scope 1)[2]	114,780 t	102,273 t	99,469 t
	CO_2 (scope 2)[3]	49,461 t	47,336 t	44,638 t
	Nitrogen oxides, NO_x	903 t	1,084 t	884 t
	Sulfur dioxide, SO_2	72 t	31 t	39 t
	Dust particles	147 t	313 t	138 t
	Malodorous sulfur compounds, TRS	16 t	32 t	30 t
Water intake	Process and cooling water	73.5 million m^3	79.7 million m^3	79.1 million m^3
Discharges to water	Effluent	30.3 million m^3	36.0 million m^3	33.3 million m^3
	BOD_7	253 t	263 t	234 t
	COD	8,390 t	9,748 t	9,595 t
	Total suspended solids, TSS	619 t	610 t	525 t
	Phosphorus, P	3.4 t	4.4 t	3.5 t
	Nitrogen, N	118 t	110 t	101 t
	Halogenated organic compounds, AOX	66 t	80 t	66 t
Side-products	Lime sludge and lime		11,423 t	2,130 t
Waste[4]	Waste to landfill	3,806 t	3,779 t	6,530 t
	– green liquor dregs	3,806 t	3,779 t	6,530 t
	Reused waste	18,796 t	17,486 t	13,864 t
	– debarking reject sand and stones	638 t	1,268 t	747 t
	– green liquor dregs	4,531 t	3,949 t	936 t
	– lime sludge and lime	1,672 t	477 t	217 t
	– ash from the powerplant	6,947 t	5,020 t	4,091 t
	– recycled cardboard and paper	336 t	409 t	408 t
	– metal waste	501 t	616 t	523 t
	– building waste	17 t	36 t	574 t
	– other individually collected waste	212 t	225 t	243 t
	– sludges from wastewater treatment	1,840 t	5,485 t	6,125 t
	Interim storage	2,102 t	9,508 t	5,867 t
	– lime fertilizer	0 t	0 t	0 t
	– soil	1,006 t	6,772 t	5,867 t
	– asphalt and concrete	1,096 t	2,736 t	0 t
	Hazardous waste	53 t	396 t	75 t
Land use	Total use of land	232 ha	232 ha	232 ha
	Total sealed area	203 ha	203 ha	201 ha
	Total nature-oriented area on site	29 ha	29 ha	31 ha
	Total nature-oriented area off-site	68 ha	68 ha	68 ha

[1] See the UPM Corporate Environmental and Societal Responsibility Statement for more information (e.g. energy indicators).

[2] Carbon dioxide, CO_2 (on-site fossil emissions, scope 1)

[3] Carbon dioxide, CO_2 (fossil emissions from purchased energy, scope 2)

[4] The amounts of waste are indicated in dry weight, excluding hazardous waste.

Performance against targets in 2024

Target	Achievement	Comments
Zero accidents	No	The TRIF of the pulp mill was 14.6 and there were 4 accidents leading to absence. There were no accidents resulting in absence at the paper mill, the TRIF was 2.3.
Active precautionary safety activity	Yes	Precautionary safety measures were carried out well. There were 1,241 observations and incident reports at the paper mill and 1,233 at the pulp mill. There were 508 safety walks and discussions at the paper mill and 1,252 at the pulp mill.
Paper mill material efficiency	Partly	Fiber emissions to the treatment plant decreased and were on target. The goal for the operability of the paper machine was almost achieved, taking into account the operation rate.
Reducing specific emissions at the pulp mill compared to the previous year	Yes	Specific emissions decreased for both COD and AOX.
Reducing the amount of wastewater	Yes	The amount of wastewater decreased in both the pulp and paper mill.
Phosphorus emission control	Yes	Phosphorus discharges to the lake decreased.
Reducing fossil carbon dioxide emissions	Yes	The use of natural gas decreased compared to the previous year.
Improving energy efficiency	Yes	The pulp mill was self-sufficient in terms of electricity and steam (electric boiler is not included in the electricity consumption of pulp). The specific energy consumption of the paper mill decreased.
Raising environmental awareness	Partly	The pulp mill staff were trained in environmental matters in shift meetings and the environmental awareness session was moved to February 2025.

Targets for 2025

Targets	Time frame	Indicators and key measures
Zero accidents or serious incidents	2025	The pulp mill: TRIF < 5.5 (including contractors) The paper mill: TRIF < 4 Maintaining the safety culture and implementing the planned program
Active precautionary safety activity	2025	Safety observations; the pulp mill 936, the paper mill 1,000 Safety walks and talks: the pulp mill 1,080, the paper mill 500
Paper mill material efficiency	2025	Fiber waste < 6.0 t/d. Improving the running ability of the coating machine.
Reducing specific emissions at the pulp mill compared to the previous year	2025	COD and AOX kg/Adt < 2024,
Reducing the amount of wastewater	2025	The pulp mill: < the 2024 level. Renewal of water reports and department-specific investigation of the pulp mill's water use The paper mill: < 15 m^3/t: Identification of paper mill water fractions and carrying out new measurements
Minimizing the odor problems of the pulp mill	2025	Control of plant odors and better anticipation of odor situations
Reducing fossil carbon dioxide emissions	2025	Using the electric boiler to control the steam distribution network. Creating a roadmap to reduce CO_2 emissions from the pulp mill.
Improving energy efficiency	2025	The pulp mill: secure energy self-sufficiency The paper mill: reduce specific consumption of energy
Controlling air emissions from the pulp mill	2025	Reducing sulfur and nitrogen oxides and malodorous sulfur compounds towards the 2030 targets.

EMAS
Verified environmental management
REG.NO. FI - 000058

Revalidation statement

As an accredited environmental verifier (FI-V-0001), Kiwa Sertifiointi Oy has examined the environmental management system and UPM Kaukas Environmental and Societal Responsibility 2024 statement as well as the information concerning UPM Kaukas in the UPM Corporate Environmental and Societal Responsibility Statement 2024.

On the basis of this examination, the environmental verifier has herewith confirmed on 2025-04-14 that the environmental management system, the Finnish UPM Kaukas Environmental and Societal Responsibility 2024 statement and the information concerning UPM Kaukas in the Finnish Updated UPM Corporate Environmental and Societal Responsibility Statement 2024 are in compliance with the requirements of the EMAS Regulation (EC) No 1221/2009.

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