



UPM Tervasaari

# ENVIRONMENTAL AND SOCIETAL RESPONSIBILITY 2023



# UPM Tervasaari

The Tervasaari mill is located in the town centre of Valkeakoski, Finland, at the end of the canal between the Mallasvesi and Vanajavesi lakes. The mill is located right next to a populated area, so careful attention must be paid to environmental issues during everyday operations.

The Tervasaari integrated mill has two paper machines, a power plant, a hydropower plant and a biological effluent treatment plant. Several businesses also operate onsite as tenants. The environmental load of these tenants' effluent emissions is included in this report's data.

The heat required by the Tervasaari mill is produced by the mill's own power plant, and approximately one fifth of the required electricity is produced at the mill. Heat is also sold to external users as district heating and steam.

The Tervasaari mill's industrial landfill in Suikki was in use through the whole of 2023. The last part of the Kalatonlahti landfill was closed in 2023.

UPM Tervasaari is a centre of expertise for label papers, with a strong focus on the development of both existing paper grades and new products.



UPM Tervasaari Environmental and Societal Responsibility 2023 is a supplement to the Corporate Environmental and Societal Responsibility Statement of UPM's pulp and paper mills (available at [www.upm.com](http://www.upm.com)) and provides mill-specific environmental and societal performance data and trends for the year 2023. 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 2025.



We deliver renewable and responsible solutions and innovate for a future beyond fossils across six business areas: UPM Fibres, UPM Energy, UPM Raflatac, UPM Specialty Papers, UPM Communication Papers and UPM Plywood. As the industry leader in responsibility, we are committed to the UN Business Ambition for 1.5°C and the science-based targets to mitigate climate change. We employ 16,600 people worldwide and our annual sales are approximately EUR 10.5 billion. Our shares are listed on Nasdaq Helsinki Ltd. UPM Biofore – Beyond fossils. [www.upm.com](http://www.upm.com)

<b>Production capacity</b>	300,000 t/y	
<b>Personnel</b>	302	
<b>Products</b>	UPM Brilliant™ UPM Brilliant™ Forte UPM Brilliant™ Pro UPM Honey™ Plus UPM Honey™ Plus Forte UPM Golden™	UPM Golden™ Forte UPM Brilliant™ Duo UPM Crema™ Duo UPM Topaz™ duo UPM SCK™ Plus UPM SCK™ UPM Solide™ Lucent
<b>Certificates</b>	EMAS – EU Eco-Management and Audit Scheme ISO 14001 – Environmental Management System ISO 9001 – Quality Management System ISO 22000 – Food Safety Management System ISO 45001 – Occupational Health and Safety System PEFC wood origin monitoring system – Programme for the Endorsement of Forest Certification FSC® wood origin monitoring system – Forest Stewardship Council	
	All certificates can be found at the UPM's Certificate Finder <a href="http://www.upm.com/responsibility">www.upm.com/responsibility</a>	



For more information about FSC certification visit [fsc.org](http://fsc.org)



For more information about PEFC certification visit [www.pefc.org](http://www.pefc.org)

# Review of the year 2023

In 2023, demand for UPM Specialty Papers' self-adhesive label materials and specialty paper products decreased compared to previous years. At the Tervasaari mill, we achieved good results in the management of environmental issues. The implementation of the sustainable development strategy is continuing at our mill: We offer new and responsible solutions which, among other things, have to do with product safety, material efficiency and the ecodesign of products, as well as by innovating alternatives to the solutions of the fossil economy.

During the year, the paper machines were not running at full capacity, which resulted in a significantly lower-than-normal environmental load at the Tervasaari mill site. The biological wastewater treatment plant operated smoothly throughout the year, despite production shutdowns. In 2023, we continued to invest to reduce the use of natural gas. At the Tervasaari power plant, a new, more efficient electric boiler was commissioned in the autumn as part of the natural gas reduction project. At Paper Machine 8, we introduced a functioning model of dryers this autumn that allows paper to be dried using either electricity or natural gas.

Tervasaari has done a considerable amount of work in the area of occupational safety, but 2023 was a challenging year in terms of accidents. On the positive side, there were no serious accidents at work during 2023. In addition, there were no serious work-related accidents involving external workers during the year. At Tervasaari, we strive to improve safety through various safety measures and projects. Tervasaari received the internal Best Improver Award at the beginning of 2023 for its systematic safety improvement work in previous years. Tervasaari was recognised for its long-term, systematic work on security. According to the jury, risk assessments, work instructions and also incident investigations are thoroughly carried out at the mill. Tervasaari has a good history of working with contractors on safety. At the end of the year, UPM launched a new safety project, which is part of UPM's wider UPM Experience. In the early stages of the safety project, we asked our employees what should be improved in terms of safety.

We continued our company-wide Clean Run campaign to further improve the management of environmental issues. In 2023, we received two reports from stakeholders, one on odour and one on hydropower level regulation. Our

operations continued to be evaluated by both environmental authorities and independent external product safety and environmental specialists in 2023.

Customer enquiries regarding our products were mainly related to product safety, the origin of wood raw materials, forest certification, the amount of recycled fibre used in paper and various management systems. In recent customer enquiries, the origin of wood has been one of the most popular topics. Product safety is especially important in the case of label and packaging papers used by the food industry. UPM papers are safe to use throughout their whole lifecycle, and papers approved for food use can be used in direct contact with dry and non-fatty foods.

We continued our research on how to recover fly ash and other industrial side-streams by using new technologies. We used the ashes from 2023 to close the final phase of the Kalatonlahti landfill, which we completed in the second half of the year.

Material efficiency and ecodesign of products form a part of the sustainable development programme at Tervasaari. Examples of material efficiency include minimising raw material losses and ensuring production efficiency. Furthermore, in the production of paper products, the impact of the product on the whole value chain must be considered as comprehensively as possible. The material efficiency of the product's entire value chain is also improved, and, for example, the CO<sub>2</sub> emissions from the transportation chain are reduced. UPM Specialty Papers is committed to developing packaging materials from renewable raw materials for the food supply chain. These materials ensure the shelf life of food and minimise food loss in the production and storage chain.

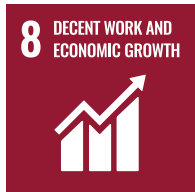
UPM's Biofore – Beyond Fossils strategy is all about seizing the unlimited opportunities of the bioeconomy. We deliver renewable and responsible solutions and innovate for a future beyond fossils. All of this is an integral part of the sustainable development strategy at Tervasaari.



Tomi Hytönen  
Mill Manager

Ville Juutinen  
HSE Manager

# Contribution to UN Sustainable Development Goals in 2023



## Safety

Safety and environmental observations, hazard situation reports, safety inspections and discussions recorded by the personnel at Tervasaari in 2023:

**678**

We worked

**359 days**

safely in 2023



## Air

SO<sub>2</sub> emissions were

**5%**

lower than in 2022

Fossil CO<sub>2</sub> emissions were

**17%**

lower than in 2022

The biggest impact on reducing fossil CO<sub>2</sub> emissions will come from reducing the use of natural gas and increasing the use of electricity.



## Energy

Biomass-based fuels account for

**69%**

of the fuels used



## Water

Use of recycled nutrients in the biological treatment plant:

**45%**

Nitrogen in clean water was

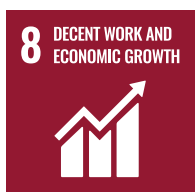
**51.1%**

lower than in 2022

Phosphorus in clean water was

**24.1%**

lower than in 2022



## Health

Support to personnel for physical activity and culture:

**EUR 105,700**



## Certified fibre

# 91%

of fibre used in paper production was FSC- or PEFC-certified. UPM's target is to use only certified fibre by 2030.



## Supply chain

# 82%

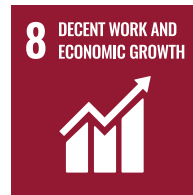
of raw material spent by value was from suppliers who have accepted UPM's Supplier and Third Party Code (excluding wood suppliers)



## Waste

# 0%

share of landfill waste



## Taxes

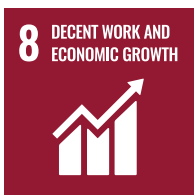
The mill's tax contributions are approximately

# EUR 6 million

Property taxes: EUR 0.41 million  
Estimated municipal taxes on personnel salaries: EUR 0.3 million  
Estimated corporate income tax: EUR 5.4 million based on the number of employees\*

\* Municipalities receive approximately 24% of this amount, which is further allocated to each municipality according to its business activity factor and forest factor

The tax impact on wages, and therefore the overall tax impact, will be significantly lower than in previous years (EUR 14 million in 2022). This is due to the introduction of social welfare regions. Welfare regions are financed by the state, which means that the municipal tax rates on wages are lower than in the past.



## Employment

UPM Tervasaari directly employs

# 302 people

Indirect local employment impact: around

# 216 people

Number of summer employees:

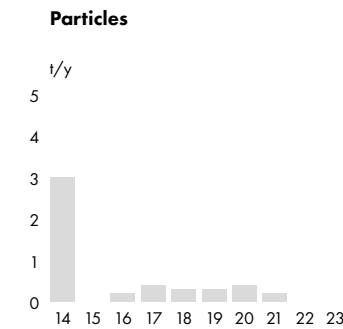
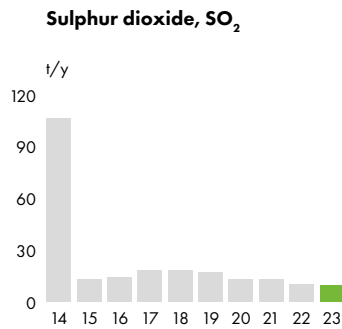
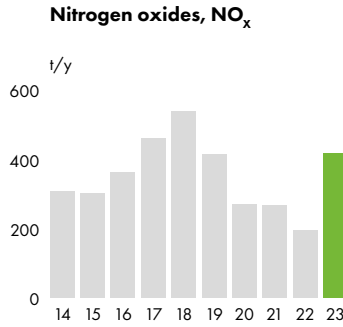
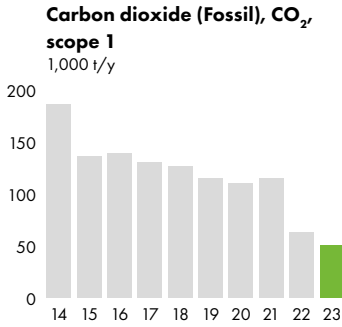
# 45 people

# Air



Airborne emissions from the Tervasaari mill remained below the permitted limits throughout the year. In 2023, we will commission a new 60 MW electric boiler. During 2023, NO<sub>x</sub> emissions increased as we had to run the K2

fluidised bed boiler at minimum capacity during the summer period. When the boiler is operated at minimum capacity, its combustion process is not optimal and emissions increase.



# Waste



Our constant goal is to ensure that no waste from UPM Tervasaari's production is taken to the Suikki industrial landfill, but that all fractions are recovered. In 2023, we continued to collaborate with various research institutes and other operators to ensure the recovery of waste, and we aim to develop new methods to ensure the recovery of industrial by-products. However, the Suikki industrial landfill can continue to be used as an interim storage area for materials being directed to recovery, if necessary.

In 2023, fly ash and fluidised bed boiler bottom ash were used in the closure of UPM's Kalatonlahti landfill. We were able to keep the proportion of recovered waste at a high level through improved sorting practices. Essentially all waste produced in 2023 was recovered.

Filtration water from the Kalatonlahti and Suikki landfills is processed at Tervasaari's biological effluent treatment plant.

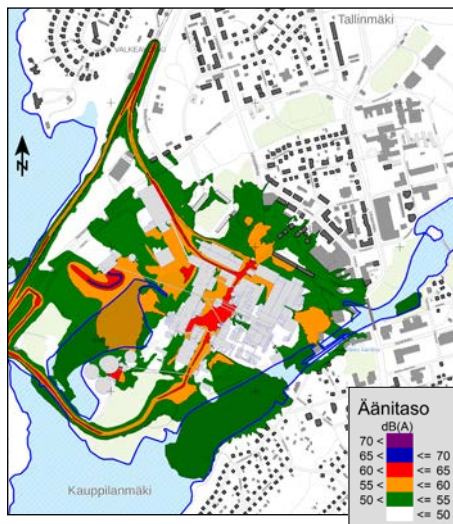
The closure of the Kalatonlahti landfill was completed in 2023.

# Noise

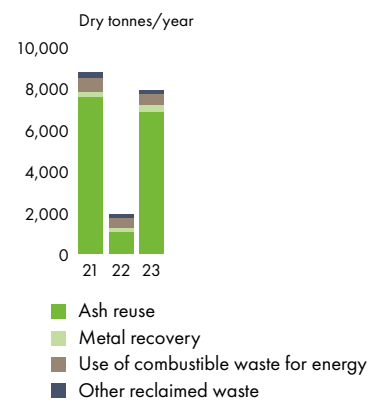


The annual noise measurements defined in the Tervasaari environmental permit were conducted in 2023. The results of the measurements have been reported to the environmental protection authorities of Valkeakoski and the Pirkanmaa Centre for Economic Development, Transport and the Environment.

Calculation of noise propagation was done using SoundPLAN software and the Nordic noise calculation method for road, railway and industry noise. The situation describes the average daytime sound level (L<sub>Aeq7-22</sub>) of process noise, heavy traffic and rail traffic at the Tervasaari mill in the summer of 2019.



## Process waste



# Water



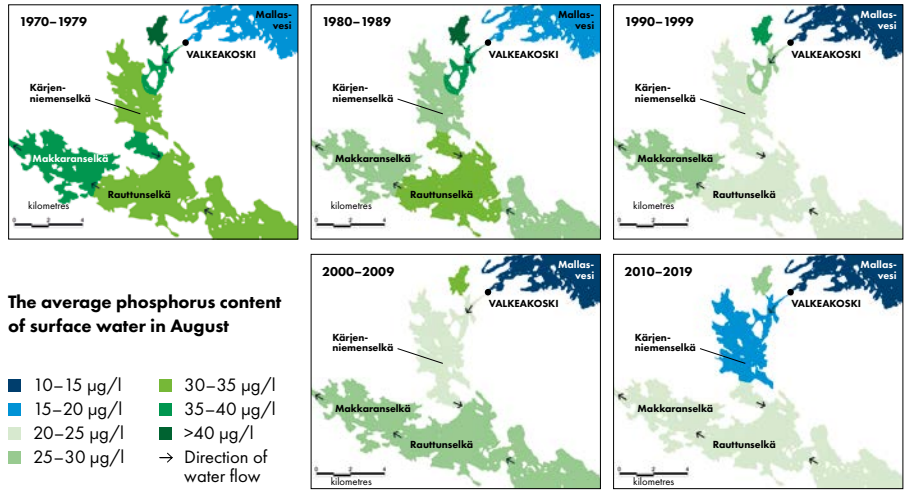
During 2023, we managed to keep the biological treatment plant in good condition, even though paper production was interrupted for 1–2 weeks several times during the year. The full-year wastewater volume was lower than in 2022, due to less water coming from the paper machines.

We were able to optimise nutrient dosing, which significantly reduced the amount of nutrients in the treated water.

All the measurements related to wastewater emissions remained well below the permit limits. The internal environmental targets set for 2023 for wastewater emissions were also clearly underachieved, but the amount of wastewater in relation to paper production was high due to production shutdowns at the paper machines.

We continued to increase the amount of recycled nutrients as planned. During the year, 45% of the nutrients used were recycled nutrients.

The corrective measures for the hydro power surface anomaly were a correction of the automatic surface measurement and a hydropower discharge curve check, which will be carried out at the energy morning meeting.



In the long term, the eutrophication level in the Valkeakoski area has decreased significantly due to the reduction in the point source load. This can be seen in the decrease in the average phosphorus content below Valkeakoski. Currently, the phosphorus contents there are already lower than in Rauttunselkä and Makkaranselkä, where the higher eutrophication level is sustained by scattered loading (Source: KVVY Tutkimus Oy).

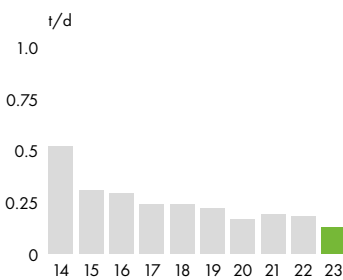
## Management of crises and exceptional situations

The Tervasaari mill management and the safety organisation are responsible for the prevention of exceptional situations and the operational management of crises and exceptional situations. The Tervasaari mill has guidelines and rescue and firefighting plans for exceptional situations.

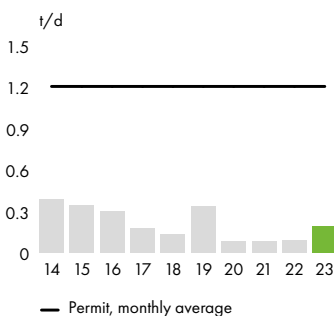
The Mill Manager heads the management of exceptional situations. Mill experts support the Mill Manager in this by providing their own specific expertise. In the event of a major exceptional situation, these experts form the mill's crisis management team, which is responsible for the operational management of the situation. A major exceptional situation is an unforeseen chain of events that proceeds rapidly and has a significant impact on operations. Exceptional situations include serious accidents and hazardous situations (large fires, explosions and chemical and traffic accidents on the mill site), environmental damage, serious work-related accidents, cybersecurity threats and information attacks.

The operations of the mill safety organisation cover expert tasks regarding occupational safety, mill guarding, firefighting and rescue operations, and the control of hazardous substances. Drills related to exceptional situations are an important part of preventative safety work. Firefighting and rescue operations are always led by the rescue authorities.

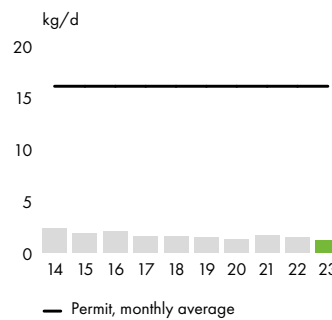
**Total suspended solid (TSS)**



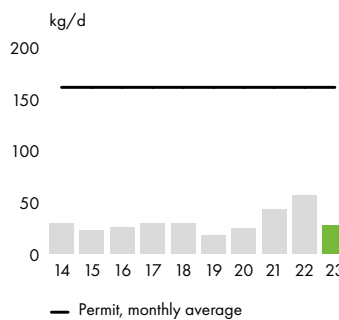
**Biological oxygen demand, BOD,**



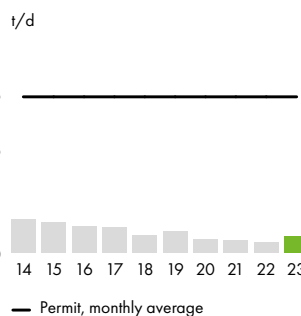
**Phosphorus, P**



**Nitrogen, N**



**Chemical oxygen demand, COD**



# Social responsibility

## Engaging with society

A well-functioning dialogue and collaboration with stakeholders is key to our success. We are committed to promoting the vitality of the communities near our facilities through active collaboration and open dialogue with different stakeholders, as well as through different sponsorship projects and employee volunteering.

We affect local communities and society in various ways. Understanding the impact that we have is an essential component of our success in business. In many locations, we are a major employer, taxpayer and partner to local entrepreneurs, making positive contributions to the local economy.

## Safety

UPM aims to be the industry leader in occupational health and safety matters. Our target is to avoid serious and fatal accidents completely. Safety is an inseparable part of our daily activities and is not seen as secondary to any other consideration. We strive to reduce and eliminate accidents through continuous improvements and effective risk management. In 2023, we won the Best Improver Safety Award in UPM's Paper & Label category.

Our employees, as well as business partners and their employees, are required to adopt safe work practices and to comply with the rules and standards that we have set. For example, before accessing UPM production sites, contractors participate in UPM's safety training, which presents the basic safety requirements. This is complemented by job-specific safety induction and a work permit.

Tervasaari mill employees regularly take part in safety training, such as safety standard training, occupational safety card training, hot work licence training and first aid training. We organised the annual UPM Work Safety Week in spring 2023, under the theme of risk management. The biggest drill of the Safety Week was a crisis management drill organised together with the Pirkanmaa Rescue Department, VPPK, Bang & Bonsomer and Movere. The personnel is encouraged to record incident reports and safety observations in OneSafety and to carry out safety and clean-up rounds at the mill.

In addition to fire safety, the Tervasaari mill fire service is active in many other

safety service areas, such as ensuring safety for work at heights, as well as training employees on different topics. The mill fire service employees are professionals in different fields who are also qualified for fire service tasks. A variety of exercises are held every week. The Tervasaari mill fire service is a contracted fire service in the Pirkanmaa region and is therefore an integral part of the local fire and rescue services organisation. Exit drills were organised at the plant during 2023.

At the end of 2023, safety dialogues were held at the mill to discuss a wide range of issues related to safety at work and to gather views and opinions on UPM's safety vision reform. The dialogues were very active, with as many as 230 employees taking part in the discussions. They provided not only good insights for a UPM-wide safety programme, but also an excellent list of development ideas for local implementation.

## The Biofore Share and Care programme

We support sustainable development and promote the financial and mental well-being of the communities around us by participating in numerous community projects as a company. Our work in this area is closely related to our Biofore strategy and sustainability objectives, and is coordinated as part of UPM's Biofore Share and Care programme.

The Biofore Share and Care programme comprises three forms of support: sponsorships, donations and employee volunteering. The support can be a monetary contribution, products, materials or concrete work in projects agreed upon locally. Our focus is on activities and projects that are related to our business, support innovation and sustainable development, or promote local vitality and well-being. The areas of focus of the Biofore Share and Care programme are reading and learning, engaging with communities, responsible water use and boosting bioinnovations.

As in previous years, Tervasaari has supported local communities through sports clubs and other activities. In December, Tervasaari personnel also donated 10,000 euros to the local "Save the Children" association in Valkeakoski to support recreational activities for local children and young people. UPM Tervasaari originally received the donation at the 2023 UPM Internal Safety

Awards, where Tervasaari was awarded the Best Safety Improver award.

The "UPM Tervasaari Blood Group", established in 2022 as part of the Finnish Red Cross's blood service, has continued to be active during 2023. The Finnish Red Cross has awarded a silver certificate of honour to UPM Tervasaari Donor Group for its blood donations in 2023. This is a great recognition of the work done by the team. During the year, the team collected 20 donation visits, which have helped up to 60 patients.

In November 2023, children had the chance to learn about the Tervasaari mill as part of the national "Bring your child to work" campaign. The Discovery Day in Tervasaari was for employees' children in grades 1 to 9. Around 50 children and their parents attended the event. Tervasaari has already participated in the "Bring your child to work" campaign several times.

## Health and well-being at work

Issues related to occupational safety and health and well-being at work are regularly discussed in the occupational safety management group, the occupational safety committee and the joint working groups of the Tervasaari mill and the occupational healthcare department. An annual well-being at work programme and occupational healthcare action plan will be drawn up for the



The Finnish Red Cross awarded a silver certificate of honour to the UPM Tervasaari Donor Group for its blood donations in 2023. Markku Äyhönen in the image.



Representatives of the UPM Tervasaari Health and Safety Committee, Juha Notkola and Anu Rautakoski, handed over the donation of 10,000 euros to the local “Save the Children” association in Valkeakoski. The donation was received by Kristina Tourunen, the association’s president, and Minna Heikkinen, vice-president.

mill. In 2023, there was a particular focus on work capacity management and early intervention, with the introduction of a renewed early intervention model and a supporting information system. The well-being at work programme for employees aims to strengthen supervisory work that enhances work capacity, support individual work capacity and encourage employees to participate in, for example, UPM’s fitness training courses. The Tervasaari mill has its own gym that employees can use free of charge. UPM also supports the employees’ exercise and cultural activities.

### Personnel development

We support the development of our personnel’s skills through a range of training and coaching events. We encourage an active feedback culture and knowledge sharing as part of our joint development. Job rotation and job exchanges, as well as rotational exchange programmes between mills, for example, contribute to the development and sharing of knowledge.

In 2023, Tervasaari hired around 45 summer workers. As part of the on-boarding process, new recruits benefited from the support of supervisors and teams, online and face-to-face training and self-study materials, which helped them integrate. In our survey, we received positive feedback, especially on job training, safety at work and the working atmosphere in the teams. At

the end of 2023, Tervasaari launched an apprenticeship programme to train future paper manufacturing and logistics experts for the mill. A total of 10 people were selected for the programme. In addition, students and recent graduates started work placements and internships at our mill.

In UPM’s annual employee survey, the strengths of our mill were good supervisors, freedom of self expression at work and safety. The 2024 action plan was based on open communication, community development and proactive safety work.

### Tax impact

The tax revenue generated by UPM’s operations has a significant social impact. We pay corporate income taxes in the countries where we create added value and generate profits resulting from that. Due to our corporate and operational structure, we mainly report and pay corporate income taxes in the countries of production and in the countries where innovations are developed. In addition to the income taxes that we pay, our various production inputs and outputs are also subject to taxation. Taxes are paid in accordance with the local tax decrees and regulations. In 2023, UPM’s corporate income taxes and property taxes paid were approximately 221 million euros in total (349 million euros in 2022).

The operations of our mills also support local communities in many ways. The property taxes paid and the municipal share of corporate income taxes support the local economy. In addition, the municipal taxes and social security contributions that the employees pay from their wages have a significant local impact. Furthermore, the purchasing power of UPM’s employees and subcontractors maintains and enhances the vitality of local communities.

### Responsible sourcing

UPM is committed to responsible procurement practices throughout the procurement chain. We work closely with our suppliers to ensure that they understand and meet all of the company’s requirements for sustainable development and responsibility. We require all suppliers to comply with the UPM Supplier and Third Party Code, which specifies the minimum requirements for responsibility relating to environmental impacts, human rights, labour practices, occupational health and safety, product safety and bribery.

UPM’s aim is that by 2030, 100% of the value of raw material procurements and 80% of the value of all procurements come from suppliers who have committed to UPM’s Code. In 2023, 98% of the value of UPM’s raw material procurements and 89% of the value of all procurements came from suppliers like these.

# Environmental parameters

The key 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.

		2021	2022	2023
<b>Production capacity</b>	Paper	300,000 t	300,000 t	300,000 t
<b>Raw materials</b>	Pulp Chemicals	See UPM Corporate Environmental and Societal Responsibility Statement for more information		
<b>Energy</b>	Biomass-based fuels	55%	64%	69%
	Fossil fuels	45%	36%	31%
	Purchased energy <sup>1)</sup>			
<b>Emissions to air</b>	Particles	0.2 t	0 t	0 t
	Sulphur dioxide, SO <sub>2</sub>	12.7 t	10.0 t	9.5 t
	Nitrogen oxides, NO <sub>x</sub>	285.1 t	187.5 t	416.1 t
	Carbon dioxide, CO <sub>2</sub> (fossil emissions from own energy production, scope 1)	115,000 t	62,900 t	51,500 t
	Carbon dioxide, CO <sub>2</sub> (fossil emissions from purchased energy, scope 2)	26,000 t	0 t	0 t
<b>Water intake</b>	Process and cooling water	11,052,148 m <sup>3</sup>	8,931,666 m <sup>3</sup>	8,578,888 m <sup>3</sup>
<b>Discharges to water</b>	Clean cooling water	6,457,717 m <sup>3</sup>	5,569,869 m <sup>3</sup>	5,263,036 m <sup>3</sup>
	Process effluent	4,594,431 m <sup>3</sup>	3,361,797 m <sup>3</sup>	3,315,852 m <sup>3</sup>
	BOD <sub>7</sub>	29.2 t	32.3 t	68.8 t
	COD <sub>Cr</sub>	265.7 t	227.8 t	350.4 t
	Solids	70.3 t	65.9 t	46.6 t
	Phosphorus	0.6 t	0.6 t	0.4 t
	Nitrogen	15.7 t	20.3 t	9.9 t
<b>Waste<sup>2)</sup></b>	Landfill waste	0 t	0 t	0 t
	Incineration without energy recovery			0,9 t
	Recovered waste			
	– Metal waste	261 t	170.5 t	358.5 t
	– Ash	7,525 t	1,039.5 t	6,970.6 t
	– Combustible waste for energy	658 t	509.9 t	529.45 t
	– Others	279 t	166.1 t	161,8 t
	Ashes are stored temporarily	0 t	3,957.6 t	0 t
	Hazardous waste <sup>3)</sup>	194.1 t	95.9 t	89.6 t
<b>Total amount of land use</b>	Total land use	110 ha	110 ha	110 ha
	Area impermeable to water	43 ha	43 ha	43 ha
	Area directed towards nature conservation	67 ha	67 ha	67 ha

<sup>1)</sup> See the Group's Corporate Environmental and Societal Responsibility Statement for more information (e.g. energy indicators)

<sup>2)</sup> Waste amounts given as dry weight

<sup>3)</sup> Hazardous waste stated as total weight



# Performance against targets in 2023

TARGETS	ACHIEVEMENT	COMMENT
The most significant measures for improving safety and protecting the environment in 2023 were:		
<b>1 Preventing environmental deviations and achieving the Clean Run objectives:</b> COD < 1.5 t/d; BOD <sub>7</sub> < 0.3 t/d, N < 29 kg/d and P < 2.3 kg/d Active optimisation of nutrients	Partially	Other emissions were below internal targets. One Clean Run Class 3 deviation. Deviation from the hydropower flow curve when an automatic measurement was damaged. We managed to increase the use of recycled nutrients.
<b>2 Airborne emissions; fluidised bed boiler</b> – NO <sub>x</sub> < 200 mg/m <sup>3</sup> (n) – SO <sub>2</sub> < 10 mg/m <sup>3</sup> (n) – Particulates < 0mg/m <sup>3</sup> (n) – Optimisation of the combustion conditions of the boiler and the functioning of the flue gas purification unit	Yes Yes Yes Yes	Emissions into the air were lower than the established targets.
<b>3 Reducing water consumption, the loss of solids and the amount of solid waste:</b> Water consumption 8.2m <sup>3</sup> /t  Solids losses 0.60% Effective maintenance of the sorting of waste to be incinerated 0 t/y of taxable waste taken to landfill	No  Yes Yes Yes	On average, process water consumption was above the target, although Tervasaari was able to reduce wastewater volumes. The target was met for solids losses. We managed to maintain effective sorting. No taxable waste was taken to landfill.
<b>4 Increasing opportunities for ash recovery:</b> Aim to recover 100% of fly ash Participation in one or more ash road projects or other recovery project	Yes	The fluidised bed boiler's sand recycling worked outstandingly, which significantly reduced the amount of bottom ash removed from the combustion process. Fly ash was recovered according to plan.
<b>5 Improving energy efficiency:</b> – Reducing CO <sub>2</sub> emissions by 7% compared to the 2022 level – Paper machine energy efficiency audits	Yes Yes	We managed to reduce CO <sub>2</sub> emissions with the new electric boiler. The paper machines were used to optimise the settings of the drying section.

# Targets for 2024

TARGETS
<b>1 Preventing environmental deviations and achieving the Clean Run objectives:</b> COD < 1.5 t/d; BOD <sub>7</sub> < 0.3 t/d, N < 29 kg/d and P < 2.3 kg/d Active optimisation of nutrients
<b>2 Airborne emissions; fluidised bed boiler</b> – NO <sub>x</sub> < 200 mg/m <sup>3</sup> (n) – SO <sub>2</sub> < 10 mg/m <sup>3</sup> (n) – Particulates 0 mg/m <sup>3</sup> (n) Optimisation of the combustion conditions of the boiler and the functioning of the flue gas purification unit
<b>3 Reducing water consumption, the loss of solids and the amount of solid waste:</b> Water consumption 8.2m <sup>3</sup> /t Solids losses 0.60% Effective maintenance of the sorting of waste to be incinerated 0 t/y of taxable waste taken to landfill
<b>4 Increasing opportunities for ash recovery:</b> Aim to recover 100% of fly ash Participation in at least one ash road project or other recovery project
<b>5 Improving energy efficiency:</b> Reducing CO <sub>2</sub> emissions by 7% compared to the 2023 level Paper machine energy efficiency audits



## Revalidation statement

As an accredited environmental verifier (FI-V-0001), Inspecta Sertifiointi Oy has examined the environmental management system and UPM Tervasaari Environmental and Societal Responsibility 2023 statement as well as the information concerning UPM Tervasaari in the Updated UPM Corporate Environmental and Societal Responsibility Statement 2023.

On the basis of this examination, the environmental verifier has herewith confirmed on 2024-04-04 that the environmental management system, the Finnish UPM Tervasaari Environmental and Societal Responsibility 2023 statement and the information concerning UPM Tervasaari in the Finnish Updated UPM Corporate Environmental and Societal Responsibility Statement 2023 are in compliance with the requirements of the EMAS Regulation (EC) No 1221/2009.



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