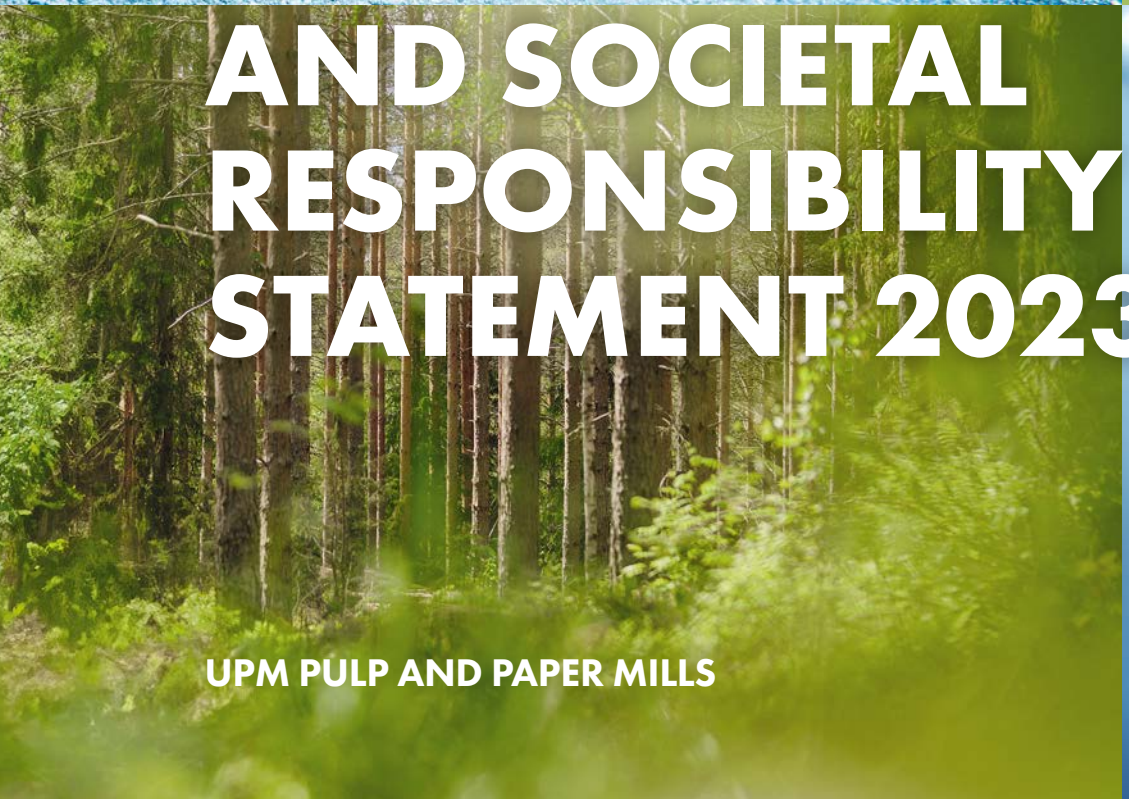
UPM CORPORATE ENVIRONMENTAL AND SOCIETAL RESPONSIBILITY STATEMENT 2023



UPM PULP AND PAPER MILLS

ABOUT THIS REPORT

EMAS reporting at UPM pulp and paper mills
All of UPM's European pulp and paper mills (except Caledonian in UK), as well as the Fray Bentos pulp mill in Uruguay and the Changshu paper mill in China are registered with the EU Eco-Management and Audit Scheme (EMAS), a voluntary environmental management system for companies and other organisations to improve, evaluate and report on their environmental performance on an annual basis.

UPM Corporate Environmental and Societal Responsibility Statement together with the Environmental and Societal Responsibility reports of each pulp and paper mill of UPM comprise the global EMAS statement of UPM Corporate. The statement has been done according to the European Commission regulation (EC) No 1221/2009.

Since 2018 societal responsibility indicators are part of all the mill supplements. UPM considers it important to report all the impacts generated at the mill locations, whether it is environmental or societal.

Information within the corporate part concerning the sites mentioned here as well as the information used for calculation of UPM Corporate level EMAS core indicators has been assessed and verified by the respective national EMAS auditor.

The present EMAS corporate part is the update of the UPM Corporate Environmental and Societal Responsibility Statement 2023. Both documents as well as the mill supplements are available at **upm.com**.

The next Corporate Environmental and Societal Responsibility Statement will be published in 2025.

Corporate responsibility reporting at UPM
At UPM, the environmental and corporate responsibility reporting is integrated with the company's annual reporting. The UPM Annual Report 2023 follows the framework and disclosures of the Global Reporting Initiative's (GRI) Sustainability Reporting Standard and meets the requirements of the Core option. For the Annual Report and GRI content index table, please order a printed copy of the report or visit **upm.com/responsibility**.

Scope of the report
This statement forms the corporate part of the environmental and societal responsibility statement, which has been verified in accordance with the EU's Eco-Management and Audit Scheme (EMAS). The following sites are included in the EMAS scope:

UPM Communication Papers:
– UPM Augsburg
– UPM Ettringen
– UPM Hürth
– UPM Kaukas
– UPM Kymi
– UPM Nordland Papier
– UPM Rauma
– UPM Schongau

UPM Specialty Papers:
– UPM Changshu
– UPM Jämsänkoski
– UPM Tervasaari

UPM Pulp:
– UPM Fray Bentos
– UPM Kaukas
– UPM Kymi
– UPM Pietarsaari

Corporate registration number: FI-000058

Information about sites without EMAS registration
The UK site UPM Caledonian as well as the non-European sites UPM Blandin and UPM Paso de los Toros are not EMAS registered. The information concerning UPM Caledonian and UPM Blandin has not been assessed or verified within EMAS context. UPM Paso de los Toros started operations in April 2023, so it is not included in the scope of this statement.

UPM

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.

upm.com

UPM**BIOFORE-BEYOND** FOSSILS

Contents

All process water is treated in mechanical and biological effluent treatment plants before being released into watercourses.

Environmental targets show direction

UPM's Biofore strategy guides us in the achievement of our responsibility targets for 2030 and contributes positively to achieving the UN Sustainable Development Goals (SDGs).

In order to guide our responsibility activities, we have established a set of responsibility focus areas with targets and key performance indicators which are reviewed every year based on a materiality analysis. We have also identified the SDGs where we can have the greatest impact, either by minimising our negative impacts or by increasing our positive impacts. Those most relevant SDGs for UPM are aligned with the responsibility focus areas.

In terms of environmental responsibility, the focus areas are forests and biodiversity, climate, water, waste and product stewardship. In terms of social responsibility, the focus areas are continuous learning and development, responsible leadership, diversity and inclusion, fair rewarding, safe and healthy working environment and community involvement. See details in UPM Annual Report.

UPM's environmental focus areas, key performance indicators and current Group-level performance in relation to the relevant targets can be seen in the table below. The annual target-setting of UPM's pulp and paper mills is published in the mill supplements. The mill-level targets reflect UPM's long-term targets at a local level. In addition, the mill-level targets focus on the specific local development areas.

ENVIRONMENTAL	KEY PERFORMANCE INDICATOR	2030 TARGET	2023 RESULT
Forestry Ensuring sustainable land use	• Climate-positive land use in UPM's own and leased forests • Share of certified fibre[1)]	• Forests as carbon sinks (continuous) • 100%	• Five-year annual average carbon sink was approx. –4.8 Mt of CO_2 equivalents • 87% (86%)
Biodiversity Enhancing biodiversity	• Positive impact on forest biodiversity and developing a monitoring system[3)] • Obstacle-free streams[4)]	• Positive development (continuous) • 500 km	• Overall positive development measured in Finland and in Uruguay • 186 km (174 km) reached
Climate Creating climate solutions and working towards carbon neutrality	• Fossil CO_2 emissions from UPM's on-site combustion and purchased energy (Scope 1 and 2), compared to 2015 • Coal and peat usage in on-site energy generation • Annual energy efficiency improvement • Share of renewable fuels • Acidifying flue gases (NO_x/SO_x) for a UPM average product, compared ta 2015	• –65% • 0 • 1% (continuous) • 70% (continuous) • –20%	• –45% compared to 2015 and –17% compared to 2022 • 29% of total fossil fuel usage, –13% compared to 2022 • Not achieved • 76% (65%) • –17% (–28%)
Water Using water responsibly	• Chemical oxygen demand (COD) for a UPM average product, compared ta 2008[2)] • Wastewater volume for a UPM average product, compared to 2008[2)] • Nutrients used at effluent treatment from recycled sources[2)]	• –40% • –30% • 100%	• –39% (–39%) • –7% (–13%) • 33% (33%)
Waste Promoting material efficiency and circular bioeconomy – reduce, reuse, recycle and recover	• Process waste sent to landfills or to incineration without energy recovery	• 0	• 50% increase compared to 2022, 87% (90%) of UPM's process waste recovered or recycled
Product stewardship Taking care of the entire lifecycle	• Climate-positive product portfolio • Development of new products and services with contribution to the SDGs • Share of applicable products eligible for ecolabelling out of UPM sales	• Continuous • Continuous • 100%	• Participation in GHG protocol pilot project for land-use guidance • Sustainable product design concept used in several projects, tools developed further • 89% (87%)

Goal 6: Clean water and sanitation (Target: 6.3)

Goal 7: Affordable and clean energy (Targets: 7.2 and 7.3)

Goal 8: Decent work and economic growth (Targets: 8.2, 8.5 and 8.8)

Goal 12: Responsible consumption and production (Targets: 12.2, 12.4 and 12.5)

Goal 13: Climate action (Target: 13.1)

Goal 15: Life on land (Targets: 15.2 and 15.5)

[1)] Forest management certification
[2)] Relevant for pulp and paper production
[3)] Covers UPM's own forests in Finland and UPM's land in Uruguay
[4)] Relevant for Finland

Environmental development – Pulp

Our annual pulp production capacity of 5.8 million tonnes is produced in Finland and in Uruguay. In 2023, UPM's transformative growth investment in the new Paso de los Toros pulp mill in Uruguay was concluded successfully. Production started in April 2023 and customer deliveries began in May. The production reached about 850,000 tonnes in 2023 and this is expected to more than double in 2024.

In 2023, global chemical pulp demand was solid. Destocking impacted pulp demand in China in the first half of the year, but demand improved in the second half in line with positive developments in end-use markets. In Europe, pulp demand was weak. Pulp sales prices declined in all markets to the bottom-of-the-cycle levels after all-time highs in the previous year. Prices started to recover in the second half of the year.

Fibre
In 2023, 80% of wood used in pulp production was from FSC® and/or PEFC certified forests with the remainder coming from controlled sources.

Energy
UPM's pulp mills are more than self-sufficient in energy usage and providing surplus heat for the integrated paper mill or to external parties and providing surplus electricity to the grid. The share of renewable energy remained on a good level at 93%.

Air
In 2023, specific emissions of fossil carbon dioxide from own fuel usage (scope 1) decreased and from purchased electricity (scope 2) increased. In line with UPM's commitment to reduce fossil CO_2 emissions (scope 1 and 2) by 65% until 2030 a road map to achieve this target has been drawn and its implementation is in progress.

Nitrogen oxide and sulphur dioxide stayed in the same good level as well as emissions of particulates and total reduced sulphur. UPM's target is to reduce acidifying flue gases (NO_x and SO_2) by 20% from 2015 levels by 2030. Progress for UPM Pulp since 2015 has been 8%.

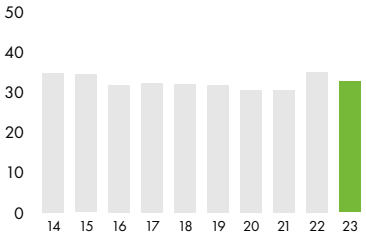
Water
In 2023, specific waste water volume decreased from 35.2 m^3 per tonne of pulp to 32.8 m^3 per tonne of pulp. COD load per tonne of pulp decreased slightly from 10.0 kg in 2022 to 9.7 kg in 2023. Since 2008, which is the base year of our target, the waste water volume per tonne of pulp has decreased by 18% and COD per tonne of pulp has decreased by 46%. All mills have roadmaps for reducing water use and effluent load to achieve the 2030 targets.

Waste
The amount of waste sent to landfills increased slightly from 13.4 kg per tonne of pulp in 2022 to 13.8 kg per tonne of pulp in 2023. Over the last ten years the amount of waste sent to landfills has decreased by 14%. Green liquor dregs are one of the most challenging side streams of UPM's pulp, and we are currently developing several innovative processes for utilising this material in Finland and Uruguay.

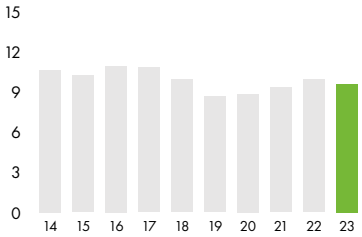
Biodiversity
Mills report their land-use with regards to biodiversity. In 2023, there was approx. 2,300 hectares of nature-oriented areas on site and off site that pulp mills and integrated pulp and paper mills own or manage. That consists mainly of the Mafalda protection area in Uruguay managed by Fray Bentos.

Read more at **upmpulp.com**

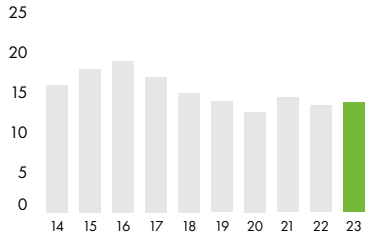
Process waste water volume per ton of chemical pulp
m^3/t



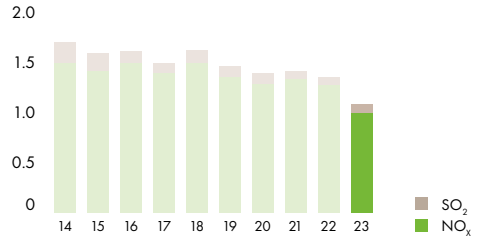
COD load per tonne of chemical pulp
kg/t



Landfill waste per tonne of chemical pulp
kg/t



Acidifying flue gases per tonne of chemical pulp
kg/t



Environmental development – Communication Papers

In 2023, we achieved solid results in a low-demand market environment. Demand for graphic papers in Europe was 24% lower compared to 2022. Margins were successfully protected by implementing cost containment measures and adjusting capacity to demand through permanent capacity closures and temporary layoffs. Market prices for all paper grades declined from record highs in the previous year, especially in Europe.

In 2023, we continued to align our production in line with the long-term market outlook. We reduced our capacity by 18% with annual fixed cost savings of approximately EUR 100 million. We permanently closed the UPM Plattling mill and PM6 at UPM Schongau, in Germany, as well as PM4 at UPM Steyrermühl, Austria.

Figures in this page include UK site UPM Caledonian and US site UPM Blandin which are not EMAS registered. The information concerning these sites, and therefore neither summary figures in this page, have not been verified within EMAS context. On this page and the next, the whole of UPM Nordland is included in Communication Papers' figures, and the whole of UPM Jämsänkoski is included in Specialty Papers' figures, even though in both of those mills there is one paper machine belonging to the other business.

Our focus is to bring UPM closer to the 2030 target of reducing CO_2 emissions from fuels and purchased electricity by 65%. We have taken actions to reduce emissions whilst contributing to the wider transition towards renewable energy by installing new electric boilers across our paper mills in Finland and Germany.

Fibre

In 2023, 31% of all fibre used in UPM Communication papers' paper production was recycled fibre. In 2023, 88% of the fibres used in paper production originated from FSC® or PEFC certified sources, the remainder came from controlled sources.

Water

In 2023 specific waste water volume increased from 11.0 m^3 per tonne of paper to 13.4 m^3 per tonne of paper. Also COD load increased from 4.1 kg per tonne of paper to 4.7 kg per tonne of paper. Water intake increased from 23 m^3 per tonne of paper to 28 m^3 per tonne of paper. All mills have prepared a road map in order to reach their targets for reducing water use and effluent load by 2030.

Air

In 2023, emissions of NO_x and SO_2 per tonne of paper remained on the same level as in 2022. Both specific emissions of fossil carbon dioxide from own fuel usage (scope 1) and specific fossil carbon dioxide emissions from purchased electricity (scope 2) decreased from 2022.

Energy

The electricity consumption per tonne of paper increased slightly from 2022 being, 1,400 kWh. In 2023, 38% of fuels used for on-site energy generation were based on biomass. For purchased electricity, the renewable share was 14% in 2023.

Waste

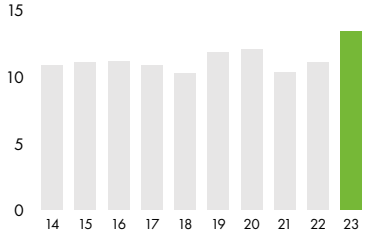
In 2023 the amount of landfilled waste increased slightly from 3.0 kg per tonne of paper in 2022 to 3.4 kg per tonne of paper in 2023. The biggest waste fraction for UPM's paper mills is ash, which results from energy generation at the mills. Overall for UPM's Communication Papers paper mills in 2023, over 94% of waste was recycled or recovered as energy.

Biodiversity

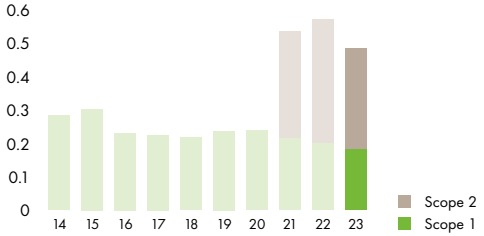
Mills report their land-use with regards to biodiversity. In 2023 there was in total 580 hectares of nature-oriented areas on site and off site that paper mills and integrated pulp and paper mills own or manage. A "nature-oriented area" is an area dedicated primarily to nature preservation or restoration.

Read more at **upmpaper.com**

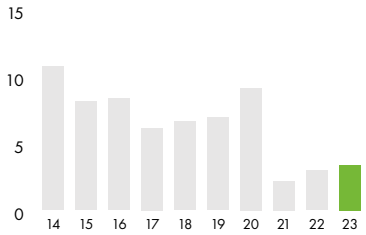
Process waste water volumes per tonne of paper
m^3/t



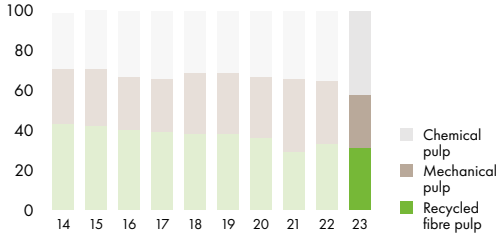
Fossil carbon dioxide emissions per tonne of paper
CO_2 t/t



Landfill waste (incl. Incineration without energy recovery) per tonne of paper
kg/t



Fibre raw materials
%



Environmental development – Specialty Papers

In 2023, global demand for label papers, release base papers and packaging papers was soft, and sales prices decreased compared to the previous year. The recovery of the Chinese economy was slower than expected, impacting the growth in demand for fine papers. In H2, demand began improving both in China and in the rest of the Asia-Pacific region.

In the long term, solid trends in demand are driving the growth of specialty papers. With the packaging industry preparing for the EU's Packaging and Packaging Waste Regulation (PPWR), which aims to ensure that all packaging in the EU is reusable or recyclable by 2030, the demand for recyclable fibre-based packaging solutions is growing. In 2023, our OneBARRIER FibreCycle solution was announced as one of the winners of Packaging Europe's Sustainability Awards.

On this page and on the previous page, the whole of UPM Nordland is included in Communication Papers' figures, and the whole of UPM Jämsänkoski is included in Specialty Papers' figures, even though in both of those mills there is one paper machine belonging to the other business.

Fibre
In 2023, 91% of the fibres used in Specialty Papers' paper production originated from FSC® or PEFC certified sources, the remainder came from controlled sources.

Water
In 2023, specific waste water volume increased slightly from 9.20 m^3 per tonne of paper to 9.64 m^3 per tonne of paper. Also COD load increased from 0.9 kg per tonne of paper to 1.0 kg per tonne of paper. Water intake increased from 17 m^3 per tonne of paper to 18 m^3 per tonne of paper. All mills have prepared a road map in order to reach their targets for reducing water use and effluent load by 2030.

Air
Both specific emissions of fossil carbon dioxide from own fuel usage (scope 1) and from purchased electricity (scope 2) decreased from 2022. In 2023, emissions of NO_x and SO_2 per tonne of paper increased slightly.

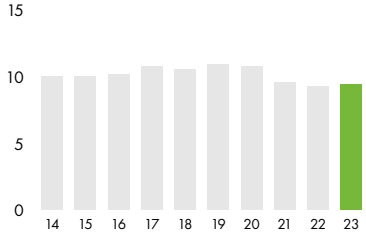
Energy
The electricity consumption per tonne of paper remained on a stable level of 1,200 kWh in 2023. In 2023, 27% of fuels used for on-site energy generation were based on biomass. For purchased electricity, the renewable share was 10% in 2023.

Waste
In 2023, there was no landfilled waste from Specialty Papers' mills, i.e. 100% of the mills' process waste was recovered or recycled. The biggest waste fraction for UPM's paper mills is ash, which results from energy generation at the mills. Ash can be used in various applications, such as in soil stabilisation, road construction or the cement industry.

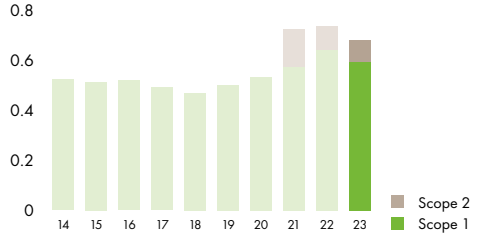
Biodiversity
Mills report their land-use with regards to biodiversity. In 2023 there was in total 200 hectares of nature-oriented areas on site and off site UPM's Specialty paper mills. A "nature-oriented area" is an area dedicated primarily to nature preservation or restoration.

Read more at **upmspecialtypapers.com**

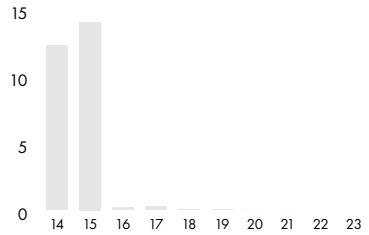
Process waste water volumes per tonne of paper
m^3/t



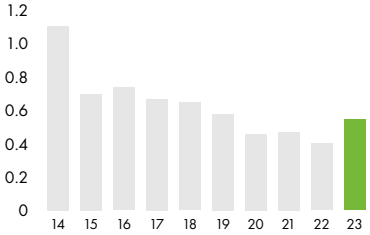
Fossil carbon dioxide emissions per tonne of paper
CO_2 t/t



Landfill waste (incl. Incineration without energy recovery) per tonne of paper
kg/t



Acidifying flue gases per tonne of paper
kg/t



Environmental development – Common topics for pulp and paper

Supplier assessments and requirements
The UPM Supplier and Third Party Code defines the minimum requirements concerning social, environmental and economic responsibility that apply to all our suppliers and third party intermediaries (e.g. agents, joint venture partners and distributors acting on behalf of UPM). It is additionally expected that our suppliers advance the same requirements in their own supply chains.

In addition to conducting risk assessments as part of our supplier selection, we carry out continuous risk assessments covering our entire existing supplier base. Risk assessments are an integral part of our supplier management activities. We utilize them to reveal possible shortcomings in supplier performance and compliance.

Clean Run
Clean Run is a global, holistic concept to manage the daily environmental performance all over UPM. It brings additional value to the ISO 14001 environmental management system which is a basis for all our environmental operations globally. Clean Run is also a tool to manage environmental risks and to continuously develop the controls. Sharing best practises between the sites is an essential part of the Clean Run concept.

Clean Run is continuous improvement of environmental performance towards zero deviation target. The concept offers a framework for all sites to plan the actions to improve their environmental performance.

Clean Run categorises environmental incidents from 0–5 based on the severity of environmental impact: Environmental walks and discussions, observations (Category 0), near misses (Category 1–2) and deviations (Categories 3–5).

In 2023, no serious environmental incidents occurred at UPM's EMAS registered pulp and paper mills. However, in total 13 (2022: 18) minor temporary deviations from permit limits occurred. Those were immediately reported to authorities and corrective measures were taken to prevent similar situations from occurring again.

Best Available Techniques (BAT)
Industry-specific reference documents are developed by the European IPPC Bureau. The conclusions for the pulp and paper industry were published by the EU Commission in September 2014. The BAT conclusions are now the reference for setting permit conditions for installations covered by the EU's Industrial Emissions Directive. The implementation period is four years. UPM is benchmarking its production lines against the BAT levels.

Environmental core indicators 2023

UPM PAPER MILLS

Scope: all UPM Communication Papers mills

	2021		2022		2023	
Production	5,430,000 t		4,620,000 t		2,890,000 t	
	Total amount per year	Indicator per tonne of paper	Total amount per year	Indicator per tonne of paper	Total amount per year	Indicator per tonne of paper
Energy efficiency						
Total direct energy consumption						
Electricity consumption	6,800 GWh	1,300 kWh/t	5,800 GWh	1,300 kWh/t	4,000 GWh	1,400 kWh/t
Steam consumption	6,000 GWh	1,100 kWh/t	5,300 GWh	1,200 kWh/t	3,600 GWh	1,300 kWh/t
Total renewable energy consumption						
Electricity consumption	1,300 GWh	240 kWh/t	1,000 GWh	230 kWh/t	710 GWh	240 kWh/t
Steam consumption	2,300 GWh	420 kWh/t	2,200 GWh	490 kWh/t	1,700 GWh	590 kWh/t
Material efficiency						
Chemical pulp	1,300,000 t	240 kg/t	1,070,000 t	230 kg/t	722,000 t	250 kg/t
Mechanical pulp	1,210,000 t	220 kg/t	992,000 t	220 kg/t	455,000 t	160 kg/t
Recycled fibre pulp	1,040,000 t	190 kg/t	1,010,000 t	220 kg/t	537,000 t	190 kg/t
Minerals	1,510,000 t	280 kg/t	1,110,000 t	240 kg/t	849,000 t	290 kg/t
Binder	178,000 t	33 kg/t	147,000 t	32 kg/t	107,000 t	37 kg/t
Water						
Water intake	114,000,000 m^3	21 m^3/t	106,000,000 m^3	23 m^3/t	80,600,000 m^3	28 m^3/t
Process waste water	56,200,000 m^3	10 m^3/t	50,300,000 m^3	11 m^3/t	38,600,000 m^3	13 m^3/t
COD [1]	21,500 t	4 kg/t	18,700 t	4 kg/t	13,500 t	5 kg/t
TSS [1]	1,600 t	0.3 kg/t	1,600 t	0.4 kg/t	970 t	0.3 kg/t
Side-products [2]	154,000 t	28 kg/t	136,000 t	30 kg/t	54,900 t	19 kg/t
Ash	99,900 t	18 kg/t	90,100 t	20 kg/t	49,100 t	17 kg/t
Wood residues	53,300 t	10 kg/t	45,800 t	10 kg/t	5,800 t	2 kg/t
Others	780 t	0 kg/t	0 t	0 kg/t	0 t	0 kg/t
Non-hazardous waste [2]	291,000 t	54 kg/t	290,000 t	64 kg/t	164,000 t	57 kg/t
Recycling, energy recovery, composting	279,000 t	51 kg/t	280,000 t	61 kg/t	154,000 t	53 kg/t
Ash [3]	47,300 t	9 kg/t	46,900 t	10 kg/t	30,900 t	11 kg/t
Sludges	167,000 t	31 kg/t	173,000 t	38 kg/t	84,500 t	29 kg/t
Others	64,400 t	12 kg/t	57,700 t	13 kg/t	38,700 t	13 kg/t
Intermediate storage	0 t	0 kg/t	0 t	0 kg/t	0 t	0 kg/t
Ash	0 t	0 kg/t	0 t	0 kg/t	0 t	0 kg/t
Others	0 t	0 kg/t	0 t	0 kg/t	0 t	0 kg/t
Landfill, incineration without energy recovery	12,100 t	2 kg/t	13,700 t	3 kg/t	9,700 t	3 kg/t
Ash [3]	170 t	0 kg/t	0 t	0 kg/t	5 t	0 kg/t
Sludges and pulp rejects	11,500 t	2 kg/t	12,500 t	3 kg/t	8,800 t	3 kg/t
Others	430 t	0 kg/t	1,200 t	0.3 kg/t	900 t	0.3 kg/t
Recycling rate	96%		94%		94%	
Hazardous waste [4]	2,300 t	0.4 kg/t	2,200 t	0.5 kg/t	1,700 t	0.6 kg/t
Emissions to air						
CO_2 fossil [5]	1,170,000 t	220 kg/t	911,000 t	200 kg/t	528,000 t	180 kg/t
CO_2 fossil from purchased electricity	1,760,000 t	330 kg/t	1,720,000 t	380 kg/t	879,000 t	71 kg/t
NO_x, as NO_2	1,300 t	0.2 kg/t	1,300 t	0.3 kg/t	800 t	0.3 kg/t
SO_2	130 t	0 kg/t	150 t	0.03 kg/t	93 t	0.03 kg/t
Particulates	15 t	0.003 kg/t	12 t	0.003 kg/t	7 t	0.002 kg/t
Land use [6]						
Total use of land	940 ha		940 ha		840 ha	
Total sealed area	630 ha		630 ha		560 ha	
Total nature-oriented area on site	300 ha		300 ha		280 ha	
Total nature-oriented area off site	280 ha		280 ha		220 ha	

[1] Includes the load before effluent treatment in AUG, HÜR and CAL (waste water is treated externally)
[2] Reported in dry tonnes
[3] Including ash, which is considered as hazardous waste in the UK
[4] Total tonnes
[5] The amount of Scope 1 CO_2 emissions reported here does not include UPM Nordland's emissions from the power fed into the public grid. The power generated in the combined heat and power plant is fed into the public grid. The mill covers its power demand from the public grid. Please see Nordland's mill statement for more information
[6] Incl. paper mills and integrated pulp and paper mills

Environmental core indicators 2023

UPM PAPER MILLS

Scope: EMAS-registered UPM Communication Papers mills

	2021		2022		2023	
Production	4,990,000 t		4,190,000 t		2,570,000 t	
	Total amount per year	Indicator per tonne of paper	Total amount per year	Indicator per tonne of paper	Total amount per year	Indicator per tonne of paper
Energy efficiency						
Total direct energy consumption						
Electricity consumption	6,000 GWh	1,200 kWh/t	5,000 GWh	1,200 kWh/t	3,300 GWh	1,300 kWh/t
Steam consumption	5,300 GWh	1,100 kWh/t	4,600 GWh	1,100 kWh/t	3,000 GWh	1,200 kWh/t
Total renewable energy consumption						
Electricity consumption	940 GWh	190 kWh/t	600 GWh	150 kWh/t	130 GWh	49 kWh/t
Steam consumption	1,900 GWh	390 kWh/t	1,800 GWh	440 kWh/t	1,300 GWh	500 kWh/t
Material efficiency						
Chemical pulp	1,230,000 t	250 kg/t	1,000,000 t	240 kg/t	672,000 t	260 kg/t
Mechanical pulp	1,000,000 t	200 kg/t	789,000 t	190 kg/t	385,000 t	150 kg/t
Recycled fibre pulp	1,040,000 t	210 kg/t	1,010,000 t	240 kg/t	537,000 t	210 kg/t
Minerals	1,370,000 t	280 kg/t	976,000 t	240 kg/t	752,000 t	290 kg/t
Binder	162,000 t	32 kg/t	131,000 t	32 kg/t	95,100 t	37 kg/t
Water						
Water intake	102,000,000 m^3	20 m^3/t	96,900,000 m^3	23 m^3/t	72,700,000 m^3	28 m^3/t
Process waste water	47,500,000 m^3	10 m^3/t	41,600,000 m^3	10 m^3/t	31,300,000 m^3	12 m^3/t
COD [1]	16,400 t	3 kg/t	13,700 t	3 kg/t	10,000 t	4 kg/t
TSS [1]	1,300 t	0.3 kg/t	1,300 t	0.3 kg/t	730 t	0.3 kg/t
Side-products [2]	154,000 t	31 kg/t	136,000 t	33 kg/t	54,900 t	21 kg/t
Ash	100,000 t	20 kg/t	90,100 t	22 kg/t	49,100 t	19 kg/t
Wood residues	53,300 t	11 kg/t	45,800 t	11 kg/t	5,800 t	2 kg/t
Others	780 t	0 kg/t	0 t	0 kg/t	0 t	0 kg/t
Non-hazardous waste [2]	238,000 t	48 kg/t	239,000 t	58 kg/t	126,000 t	49 kg/t
Recycling, energy recovery, composting	240,000 t	48 kg/t	238,000 t	58 kg/t	126,000 t	49 kg/t
Ash	39,000 t	8 kg/t	39,300 t	10 kg/t	23,500 t	9 kg/t
Sludges	167,000 t	34 kg/t	173,000 t	42 kg/t	84,500 t	33 kg/t
Others	32,000 t	6 kg/t	25,500 t	6 kg/t	18,200 t	7 kg/t
Intermediate storage	0 t	0 kg/t	0 t	0 kg/t	0 t	0 kg/t
Ash	0 t	0 kg/t	0 t	0 kg/t	0 t	0 kg/t
Others	0 t	0 kg/t	0 t	0 kg/t	0 t	0 kg/t
Landfill, incineration without energy recovery	63 t	0 kg/t	280 t	0.07 kg/t	130 t	0.05 kg/t
Ash	0 t	0 kg/t	0 t	0 kg/t	0 t	0 kg/t
Sludges and pulp rejects	31 t	0 kg/t	5 t	0 kg/t	24 t	0.009 kg/t
Others	32 t	0 kg/t	280 t	0.07 kg/t	110 t	0.04 kg/t
Recycling rate	100%		98%		100%	
Hazardous waste [3]	2,300 t	0.5 kg/t	2,100 t	0.5 kg/t	1,700 t	0.6 kg/t
Emissions to air						
CO_2 fossil [4]	1,040,000 t	210 kg/t	788,000 t	190 kg/t	437,000 t	170 kg/t
CO_2 fossil from purchased electricity	1,500,000 t	300 kg/t	1,470,000 t	350 kg/t	744,000 t	290 kg/t
NO_x, as NO_2	1,000 t	0.2 kg/t	930 t	0.2 kg/t	550 t	0.2 kg/t
SO_2	95 t	0 kg/t	120 t	0.03 kg/t	63 t	0.02 kg/t
Particulates	10 t	0.002 kg/t	8 t	0.002 kg/t	5 t	0.002 kg/t
Land use [5]						
Total use of land	900 ha		900 ha		810 ha	
Total sealed area	620 ha		620 ha		550 ha	
Total nature-oriented area on site	280 ha		280 ha		260 ha	
Total nature-oriented area off site	280 ha		280 ha		220 ha	

1) Includes the load before effluent treatment in AUG, HÜR and CAL (waste water is treated externally)
2) Reported in dry tonnes
3) Total tonnes
4) The amount of Scope 1 CO_2 emissions reported here does not include UPM Nordland's emissions from the power fed into the public grid. The power generated in the combined heat and power plant is fed into the public grid. The mill covers its power demand from the public grid. Please see Nordland's mill statement for more information
5) Incl. paper mills and integrated pulp and paper mills

Environmental core indicators 2023

UPM PAPER MILLS

Scope: all UPM Specialty Papers mills

	2021		2022		2023	
Production	1,870,000 t		1,560,000 t		1,590,000 t	
	Total amount per year	Indicator per tonne of paper	Total amount per year	Indicator per tonne of paper	Total amount per year	Indicator per tonne of paper
Energy efficiency						
Total direct energy consumption						
Electricity consumption	2,200 GWh	1,100 kWh/t	1,700 GWh	1,200 kWh/t	1,900 GWh	1,200 kWh/t
Steam consumption	2,500 GWh	1,300 kWh/t	1,900 GWh	1,200 kWh/t	2,100 GWh	1,300 kWh/t
Total renewable energy consumption						
Electricity consumption	400 GWh	210 kWh/t	270 GWh	180 kWh/t	370 GWh	230 kWh/t
Steam consumption	850 GWh	450 kWh/t	520 GWh	340 kWh/t	770 GWh	480 kWh/t
Material efficiency						
Chemical pulp	1,120,000 t	600 kg/t	977,000 t	630 kg/t	1,020,000 t	640 kg/t
Mechanical pulp	224,000 t	120 kg/t	34,800 t	22 kg/t	37,700 t	24 kg/t
Recycled fibre pulp	180 t	0.1 kg/t	0 t	0 kg/t	0 t	0 kg/t
Minerals	409,000 t	220 kg/t	353,000 t	230 kg/t	377,000 t	240 kg/t
Binder	63,500 t	34 kg/t	52,000 t	33 kg/t	51,200 t	32 kg/t
Water						
Water intake	33,100,000 m^3	20 m^3/t	26,000,000 m^3	17 m^3/t	27,000,000 m^3	17 m^3/t
Process waste water	17,800,000 m^3	10 m^3/t	14,300,000 m^3	9 m^3/t	14,900,000 m^3	9 m^3/t
COD	2,200 t	1.2 kg/t	1,400 t	0.9 kg/t	1,600 t	1.0 kg/t
TSS	300 t	0.2 kg/t	230 t	0.2 kg/t	200 t	0.1 kg/t
Side-products [1]	4,000 t	2 kg/t	3,600 t	2 kg/t	3,400 t	2 kg/t
Ash	0 t	0 kg/t	0 t	0 kg/t	0 t	0 kg/t
Wood residues	0 t	0 kg/t	0 t	0 kg/t	0 t	0 kg/t
Others	4,000 t	2 kg/t	3,600 t	2 kg/t	3,400 t	2 kg/t
Non-hazardous waste [1]	103,000 t	55 kg/t	88,800 t	57 kg/t	101,000 t	63 kg/t
Recycling, energy recovery, composting	103,000 t	55 kg/t	84,700 t	54 kg/t	101,000 t	63 kg/t
Ash	89,300 t	48 kg/t	76,700 t	49 kg/t	88,100 t	56 kg/t
Sludges	4,000 t	2 kg/t	5,900 t	4 kg/t	4,400 t	3 kg/t
Others	10,000 t	5 kg/t	2,100 t	1 kg/t	8,100 t	5 kg/t
Intermediate storage	0 t	0 kg/t	4,000 t	3 kg/t	0 t	0 kg/t
Ash	0 t	0 kg/t	4,000 t	3 kg/t	0 t	0 kg/t
Others	0 t	0 kg/t	0 t	0 kg/t	0 t	0 kg/t
Landfill, incineration without energy recovery	72 t	0.04 kg/t	0 t	0 kg/t	0.9 t	0.0006 kg/t
Ash	0 t	0 kg/t	0 t	0 kg/t	0 t	0 kg/t
Sludges and pulp rejects	0 t	0 kg/t	0 t	0 kg/t	0 t	0 kg/t
Others	72 t	0.04 kg/t	0 t	0 kg/t	0.9 t	0.0006 kg/t
Recycling rate	100%		95%		100%	
Hazardous waste [2]	380 t	0.2 kg/t	250 t	0.2 kg/t	200 t	0.1 kg/t
Emissions to air						
CO_2 fossil	1,100,000 t	580 kg/t	1,000,000 t	640 kg/t	944,000 t	590 kg/t
CO_2 fossil from purchased electricity	283,000 t	150 kg/t	145,000 t	93 kg/t	139,000 t	88 kg/t
NO_x, as NO_2	670 t	0.4 kg/t	500 t	0.3 kg/t	740 t	0.5 kg/t
SO_2	200 t	0.1 kg/t	130 t	0.08 kg/t	130 t	0.08 kg/t
Particulates	13 t	0.007 kg/t	14 t	0.009 kg/t	5 t	0.003 kg/t
Land use						
Total use of land	360 ha		360 ha		360 ha	
Total sealed area	160 ha		160 ha		160 ha	
Total nature-oriented area on site	200 ha		200 ha		200 ha	
Total nature-oriented area off site	6 ha		6 ha		6 ha	

[1] Reported in dry tonnes
[2] Total tonnes

Environmental core indicators 2023

UPM CHEMICAL PULP MILLS

Scope: all UPM pulp mills

	2021		2022		2023	
Production	3,760,000 t		2,750,000 t		3,400,000 t	
	Total amount per year	Indicator per tonne of chemical pulp	Total amount per year	Indicator per tonne of chemical pulp	Total amount per year	Indicator per tonne of chemical pulp
Energy efficiency						
Total direct energy consumption						
Electricity consumption	2,200 GWh	580 kWh/t	1,700 GWh	620 kWh/t	2,100 GWh	610 kWh/t
Steam consumption	13,700 GWh	3,700 kWh/t	9,900 GWh	3,600 kWh/t	12,400 GWh	3,700 kWh/t
Total renewable energy consumption						
Electricity consumption	1,800 GWh	480 kWh/t	1,300 GWh	490 kWh/t	1,700 GWh	510 kWh/t
Steam consumption	12,900 GWh	3,400 kWh/t	9,100 GWh	3,300 kWh/t	11,600 GWh	3,400 kWh/t
Material efficiency						
Wood	16,600,000 m^3	4 m^3/t	11,900,000 m^3	4 m^3/t	15,700,000 m^3	5 m^3/t
Process chemicals [1]	455,000 t	120 kg/t	302,000 t	110 kg/t	405,000 t	120 kg/t
Water						
Water intake	249,000,000 m^3	66 m^3/t	191,000,000 m^3	69 m^3/t	235,000,000 m^3	69 m^3/t
Process waste water	115,000,000 m^3	31 m^3/t	96,800,000 m^3	35 m^3/t	111,000,000 m^3	33 m^3/t
COD	35,300 t	9 kg/t	27,600 t	10 kg/t	32,800 t	10 kg/t
TSS	1,200 t	0.3 kg/t	1,100 t	0.4 kg/t	1,000 t	0.3 kg/t
AOX	280 t	0.1 kg/t	210 t	0.1 kg/t	270 t	0.1 kg/t
Residues [2]	78,000 t	21.0 kg/t	50,700 t	18 kg/t	86,100 t	25.0 kg/t
Tall oil	77,000 t	20.0 kg/t	49,700 t	18 kg/t	85,200 t	25.0 kg/t
Turpentine	1,400 t	0.4 kg/t	930 t	0.3 kg/t	860 t	0.3 kg/t
Side-products [3]	7,200 t	1.9 kg/t	7,200 t	3 kg/t	4,600 t	1.0 kg/t
Green liquor dregs	1,300 t	0.36 kg/t	390 t	0.1 kg/t	240 t	0.07 kg/t
Lime	5,900 t	1.6 kg/t	6,800 t	2.5 kg/t	4,300 t	1.0 kg/t
Others	2,400 t	0.6 kg/t	0 t	0 kg/t	0 t	0.0 kg/t
Non-hazardous waste [3]	153,000 t	41 kg/t	144,000 t	52 kg/t	156,000 t	46 kg/t
Recycling, energy recovery, composting	92,400 t	25 kg/t	96,100 t	35 kg/t	104,000 t	31 kg/t
Sludges	17,400 t	5 kg/t	17,500 t	6 kg/t	17,900 t	5 kg/t
Bark and wood waste	63,700 t	17 kg/t	67,100 t	24 kg/t	74,600 t	22 kg/t
Others	11,300 t	3 kg/t	11,500 t	4 kg/t	11,000 t	3 kg/t
Intermediate storage	6,400 t	2 kg/t	10,800 t	4 kg/t	6,000 t	2 kg/t
Bark and wood waste	0 t	0 kg/t	0 t	0 kg/t	1,500 t	1 kg/t
Lime	2,000 t	0.5 kg/t	0 t	0 kg/t	0 t	0 kg/t
Construction waste	0 t	0 kg/t	0 t	0 kg/t	0 t	0 kg/t
Others	4,300 t	1.1 kg/t	10,800 t	4 kg/t	4,400 t	1 kg/t
Landfill	54,300 t	14 kg/t	37,000 t	13 kg/t	46,700 t	14 kg/t
Green liquor dregs	46,400 t	12 kg/t	32,800 t	12 kg/t	42,600 t	13 kg/t
Sludges	6,100 t	2 kg/t	3,800 t	1 kg/t	3,700 t	1 kg/t
Lime	0 t	0 kg/t	0 t	0 kg/t	0 t	0 kg/t
Others	1,700 t	0 kg/t	310 t	0 kg/t	460 t	0.1 kg/t
Recycling rate	60%		70%		66%	
Hazardous waste [4]	250 t	0.1 kg/t	310 t	0.1 kg/t	2,500 t	0.7 kg/t
Emissions to air						
CO_2 fossil	265,000 t	71 kg/t	291,000 t	110 kg/t	317,000 t	93 kg/t
CO_2 fossil from purchased electricity	114,000 t	30 kg/t	199,000 t	72 kg/t	78,200 t	23 kg/t
NO_x, as NO_2	5,000 t	1 kg/t	3,500 t	1 kg/t	4,500 t	1 kg/t
SO_2	300 t	0.1 kg/t	220 t	0.08 kg/t	270 t	0.09 kg/t
Particulates	990 t	0.3 kg/t	520 t	0.2 kg/t	690 t	0.2 kg/t
TRS	59 t	0.02 kg/t	66 t	0.02 kg/t	54 t	0.02 kg/t
Land use [5]					0	
Total use of land	1,300 ha		1,250 ha		1,300 ha	
Total sealed area	570 ha		570 ha		570 ha	
Total nature-oriented area on site	680 ha		680 ha		2,000 ha	
Total nature-oriented area off site	1,600 ha		1,600 ha		1,600 ha	

[1] Main chemicals used: oxygen gas, sodium hydroxide, sodium chlorite or chlorate, sulphuric acid, limestone, hydrogen peroxide
[2] Sold volumes
[3] Reported in dry tonnes
[4] Total tonnes
[5] Incl. pulp mills and integrated pulp and paper mills

SOCIETAL PERFORMANCE

Volunteers at the UPM Changshu Mill in China spread green awareness and social wellbeing through youth-driven projects. Wang Feng has been regularly visiting local schools to educate kids about low-carbon living and energy saving as part of the UPM Green Future project.

UPM plays a significant role in contributing to societal development

Transparent reporting on all the aspects of responsibility, including environmental, social and economic is very important in UPM. Since 2017, our EMAS reports have covered local societal impacts in addition to the traditionally reported environmental performance. With "societal" we refer both to the socio and economic impacts.

Each mill presents its most important societal impacts in its mill supplement. Many issues are similar to all the mills. The mill supplements provide e.g. information on our contribution to employment, health and safety of employees, tax income and responsible sourcing as well as co-operation with the communities.

Employment

EMAS mills employed directly around 7,300 people in 2023. In addition, significant indirect employment impacts are generated by use of raw materials and services. UPM wants to ensure fair, equitable and competitive rewarding for all employees globally. Our new social responsibility focus area for fair rewarding has two targets related to living wage and gender pay equity.

We are committed to ensuring that all employees' pay meets at least their local living wage and that the situation is assessed annually. If the assessment shows unexpected wage gaps, they are corrected. We work with an independent third party and they provide us with benchmark data on the countries and cities in which we operate. The next step is to start promoting living wages with our suppliers.

We are also committed to ensuring gender pay equity to all employees. The annual review enables the monitoring of possible gender pay gaps and to make pay adjustments respectively. In 2023, we conducted the company-wide review and implemented the pay adjustments for unexplained gaps.

This commitment to fair rewarding is exceptional and shows our strong dedication to fair treatment of all employees on both a national and global scale.

Health and safety

Our goal in UPM is to be the industry leader in health and safety. 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 we have established.

In 2023, in the entire UPM, the total recordable injury frequency (TRIF, total injuries per one million hours worked) was 5.2 (5.9 in 2022) for UPM workforce including contractors. Lost time accident frequency (LTAF, lost-time accidents per one million hours worked) was 3.4 (3.3 in 2022). The TRIF includes LTA cases as well as cases of modified duties and accidents requiring medical treatment. The frequency of accidents excluding contractors was 6.1 (TRIF) and 3.7 (LTAF) in 2023. The mill specific safety figures can be found in the mill supplements.

Our safety work is based on long-term planning, effective safety communications and leadership. Safety is integrated in all our new and ongoing projects, and proactive safety is well-integrated in project plans and site practices. For us, good quality means thorough investigation and effective risk management, and this has played an important role in making our operations safe. We have utilised cross-learning to improve safety in our units: Sharing safety observations and best practice on safety have allowed us to learn from each other and improve safety in our units.

UPM's economic impact spreads not just on the corporate or country level but also in the local communities.

Tax impact

Tax income generated by our business operations is an essential part of our societal impact as the tax income strengthens the vitality of the local community and supports public services. UPM pays corporate income taxes in the countries where added value is created and profit is generated. Based on UPM's corporate and operational structure, UPM reports and pays its corporate income taxes mainly in countries where production activity takes place and where innovations are developed. In 2023, UPM's corporate income taxes paid and property taxes were approximately EUR 221 million in total (EUR 349 million in 2022).

In addition to the taxes on income, UPM's various production inputs and outputs are also subject to taxation, which is either paid by UPM (e.g. energy taxes and real estate/property taxes) or collected by UPM (e.g. VAT, payroll taxes and social security contributions). Taxes are paid in accordance with the local tax legislation and regulations of the country in question.

The mills' operations benefit the local community in many ways. Municipal share of corporate income taxes and real estate taxes paid by UPM support the economy of the local community. In addition, the income taxes on salaries and social security contributions paid by UPM employees have also a significant local impact. Local tax impact figures are presented in the EMAS mill supplement for China, Uruguay and Finland. Those eight EMAS mills in their respective municipals/countries generated in total approximately EUR 107 million local tax impact in 2023 (when including e.g. the above mentioned local taxes). EMAS mills in Germany have not published their local tax footprint in 2023 mill supplements, but in Germany, the 5 EMAS mills generated in total around EUR 112 million local tax impact including income taxes on salaries and social security contributions, municipal trade taxes and real estate taxes.

Co-operation with communities

We are committed to developing the vitality of the communities close to our operations through active co-operation and open dialogue with local stakeholders as well as, for example, through sponsorships and employee volunteering under the umbrella of our Biofore Share and Care programme. The focus areas of UPM's Biofore Share and Care programme are: Reading & learning, Engaging with communities and Beyond fossils initiatives.

The mills' engagement with the local communities are for example cases in which support has been given to the local educational institutions and associations or community consultation via regular roundtables with local stakeholders. Details about the mills' engagement activities can be found from the mill supplements.

Responsible sourcing

UPM is committed to responsible sourcing practices throughout the entire supply chain. We work closely with our suppliers to ensure that our suppliers understand and meet all of the company's requirements. UPM requires its suppliers to comply with the UPM Supplier and Third Party Code that defines suppliers' minimum requirements in terms of responsibility with regard to matters such as environmental impact, human rights, labour practices, health and safety, product safety, corruption and bribery.

UPM's target is to have 100% of raw material spend and 80% of all spend covered by UPM Supplier and Third Party Code by 2030. In 2023, 98% of UPM's raw material spend and 89% of all spend was covered by UPM Supplier and Third Party Code.

Glossary

Activated sludge process
The activated sludge process is a biological treatment under controlled conditions that seeks the development of specific microbes and protozoa capable of aerobically oxidizing wastewater's organic matter.

AOX, Adsorbable organic halogen compounds
AOX represents the total amount of chlorine bound to organic compounds in waste water. Such compounds occur naturally, but are also formed in conjunction with the bleaching of chemical pulp. AOX should be limited to a level where it has minimum environmental impacts.

BAT, Best available techniques
The best available technology that allows for solutions that are technically, economically and environmentally the most efficient and advanced.

BOD, Biological oxygen demand
COD, Chemical oxygen demand
The effluent, or waste water of pulp and paper mills includes organic substances which consume oxygen during biodegradation. Low oxygen content in fresh and sea water can have an adverse effect on plant and animal life. BOD refers to the amount of oxygen consumed in the biological decomposition of organic compounds. COD refers to the amount of oxygen consumed in the complete chemical oxidation of organic compounds.

CO_2, Carbon dioxide
Combustion product of carbon. Fossil carbon dioxide emissions arise from fossil fuels like coal, oil and petrol.

Scope 1 CO_2 emissions
Direct fossil CO_2 emissions from on site fuel usage.

Scope 2 CO_2 emissions
Indirect fossil CO_2 emissions from the generation of purchased electricity, steam, heating and cooling.

CHP, Combined heat and power technology
Combined heat and power (CHP) production (or cogeneration) is when both electricity and heat are produced at a thermal power plant. The heat is used, for example, in industry or district heating, or as process steam.

Chain of Custody (COC)
An unbroken trail of documentation to guarantee the identity and integrity of the data used as, for example, in demonstrating the origin of wood.

Chemical pulp
Generic name for wood-based fibres separated from each other by "cooking" wood chips or plants in hot alkaline or acidic solutions of various chemicals.

Consumption impact
Consumption through net income generated by employees working at the plant and employees working at the value chain of the plant (typically working in other industries). Calculated using a model build by The Research Institute of the Finnish Economy (Etla).

Deinking
The process whereby the ink and impurities are removed from recovered paper.
Deinked pulp: see recycled fibre pulp.

EMAS, Eco-Management and Audit Scheme
Voluntary environmental management system for companies and other organisations to improve, evaluate and report on their environmental performance on an annual basis. The environmental review is approved by a third-party accredited EMAS verifier.

Forest certification
An independent review process that determines whether a forest is managed in a responsible manner. There are two global forest certification schemes: FSC® (Forest Stewardship Council®) and PEFC (Programme for the Endorsement of Forest Certification).

Graphic recovered paper
Mainly white paper collected from households, e.g. newspapers, magazines, catalogues and copy paper.

ISO 9001
Quality management system standard published by the International Organisation for Standardisation (ISO). This is a voluntary, international and third-party certified system.

ISO 14001
Environmental management system standard published by the International Organisation for Standardisation (ISO). This is a voluntary, international and third-party certified system.

ISO 22001
Food Safety management system standard published by the International Organisation for Standardisation (ISO). This is a voluntary, international and third-party certified system.

ISO 45001
Occupational Health and Safety management system standard published by the International Organisation for Standardisations (ISO). This is a voluntary, international and third-party certified system.

ISO 50001
Energy management system standard published by the International Organisation for Standardisation (ISO). This is a voluntary, international and third-party certified system.

Lost-time accident frequency (LTAF)
Lost-time accidents per million hours worked. Calculation is as follows: (The number of accidents at work resulting in absence or disability one or more days)/(Actual hours worked)*1,000,000. Lost time accident type excludes modified duties, medical treatments and first aid cases, but includes fatal accidents. UPM reports separately for workforce (including UPM employees and supervised workers) and contractors.

Mechanical pulp
Generic name for wood-based fibres separated from each other mechanically.

N, Nitrogen
P, Phosphorus
N and P are chemical elements essential for plant and animal life. Both substances occur naturally in wood and are often added as a nutrient in biological treatment plants. Excessive levels released into watercourses can cause nutrient enrichment, i.e., eutrophication, which accelerates the growth of algae and other vegetation.

NO_x, Nitrogen oxides
These gases are produced during combustion. In moist air, nitrogen oxides can form nitric acid which, in turn, is precipitated as "acid rain". This nitrogen-containing rain also has a fertilising effect, i.e. eutrophication.

Recycled fibre pulp
Fibres and fillers retrieved from recovered paper. If the recovered paper is deinked, the processed pulp is also called deinked pulp.

SO_2, Sulphur dioxide
This gas is generated by burning sulphur-containing fuels. On contact with moist air, SO_2 forms sulphuric acid, which contributes to "acid rain" and acidification.

Supplier Qualification
UPM suppliers are qualified against the UPM Supplier and Third Party Code that defines suppliers' minimum compliance requirements in terms of responsibility with regard to matters such as environmental impact, human rights, labour practices, health and safety, and product safety. Supplier spend in EMAS mill supplements covers all UPM business-to-business spend excluding wood and wood-based biomass sourcing. Wood sourcing figures are not currently available for each mills, but only for regions.

Sustainable forest management
In the longterm, a sustainably managed forest means that it is not harvested more than it grows. Sustainably managed forests maintain their biodiversity, productivity, regeneration capacity, vitality and their potential to fulfil (now and in the future), relevant ecological, economic and social functions, at local, national and global levels without damaging other ecosystems.

Total Recordable Injury Frequency (TRIF)
Recordable injuries per million hours worked. Calculation is as follows: ('LTA at work excluding contractors (number of LTAs which are one or more days)'+'Modified duty'+'Medical treatment')/'Actual hours worked (UPM)'*1,000,000. Total Recordable Injury type excludes first aid cases. UPM reports separately for workforce (including UPM employees and supervised workers) and contractors.

TRS, Total reduced sulphur
Reduced sulphur compounds that usually cause odour problems and that are released, for example, during chemical pulp production.

TSS, Total suspended solids
TSS are solid materials, including organic and inorganic, that are suspended in the water.

Validation statement

As accredited or licensed environmental verifiers,
– Inspecta Sertifiointi Oy (FI-V-0001) for UPM Changshu, UPM Fray Bentos, UPM Jämsänkoski, UPM Kaukas, UPM Kymi, UPM Pietarsaari, UPM Rauma and UPM Tervasaari
– TÜV NORD CERT Prüf- und Umweltgutachtergesellschaft mbH (DE-V-0263) for UPM Augsburg, UPM Ettringen, UPM Hürth, UPM Nordland and UPM Schongau

have examined the environmental management systems of each mill mentioned above, the information contained in the Environmental and Societal Responsibility 2023 statements, the information in the corporate part, as far as it concerns the respective mills, as well as the information used for the calculation of UPM Corporate level EMAS core indicators.

Following these examinations and the examination of the Updated UPM Corporate Environmental and Societal Responsibility Statement 2023 on 21/11/2024 Inspecta Sertifiointi Oy as the coordinating environmental verifier of this common EMAS validation herewith confirms that the environmental management systems and the Updated UPM Corporate Environmental and Societal Responsibility Statement 2023 together with the Environmental and Societal Responsibility 2023 statements comply with the requirements of the EU's EMAS regulation (EC) No. 1221/2009.

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