

UPM Schongau

ENVIRONMENTAL AND SOCIETAL RESPONSIBILITY 2023



UPM Schongau

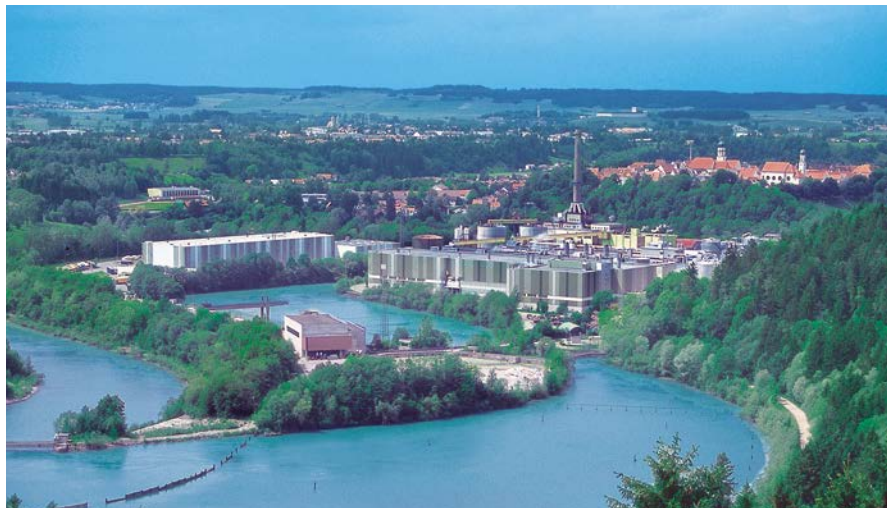
UPM Schongau is located in a meander of the river Lech in the town of Schongau in Southern Germany.

The site was established back in 1887. It was here, back in 1962, that the world's first flotation deinking systems was put into operation. This breakthrough enabled recovered graphic paper to be recycled into new printing paper.

Today, the UPM Schongau site operates two paper machines to manufacture rolls of printing paper for newspapers, newspaper supplements, advertising papers, brochures, magazines, paperbacks and catalogues. In terms of volume, recovered paper is the most important raw material at the site. Other raw materials used include waste wood from sawmills and pigments that are added as fillers. Some of these pigments come from SMI, another company based at the site.

UPM Schongau has two power plants that use the cogeneration principle to produce electricity and steam. In paper production, electricity is needed to drive the machines, while steam is needed to dry the wet paper web.

The wastewater generated from the production process is treated in the on-site effluent treatment plant.



UPM Schongau 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) 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

Production capacity	Up to 740,000 tonnes/year
Personnel	523 (total employees as at 31 December 2023)
Products	Standard and improved newsprint and calendered uncoated paper: UPM Brite UPM News UPM MaxS UPM Eco UPM EcoPrime UPM EcoBasic UPM Book
Certificates	EMAS – EU Eco-Management and Audit Scheme ISO 14001 – Environmental Management System ISO 9001 – Quality Management System ISO 50001 – Energy Management System DIN ISO 45001 – Occupational Health and Safety Management System PEFC Chain of Custody – Programme for the Endorsement of Forest Certification FSC® Chain of Custody – Forest Stewardship Council® All certificates can be found in the UPM Certificate Finder (available at www.upm.com/responsibility)
Environmental labels	EU Ecolabel and Blue Angel (RAL-UZ 14a or 72) for UPM News, UPM Eco H/G, UPM ReCat and UPM EcoBasic



For more information about FSC certification visit www.fsc.org



For more information about PEFC certification visit www.pefc.org



EU Ecolabel : FI/011/001



www.blauer-engel.de/uz72

Review of the year 2023

Environmental protection has been an important topic at the Schongau site for many years. The continuous reduction of energy and water requirements, a high raw material yield for waste reduction and the use of environmentally compatible chemical additives in the production process are the focus areas of the continuous improvement process, which has been steered by management systems for the environment, quality, energy and occupational safety since the mill has been certified in accordance with international standards.

As a company of the Finnish UPM Group, we acknowledge our responsibility towards the environment and are committed to minimising the impact of our production operations on the environment and our employees.

Production and environment

As one of the first paper recyclers in Germany, we have been contributing to a circular economy for more than 60 years.

We support sustainable forestry when purchasing wood chips for fresh fibre production by working according to the PEFC and FSC Standards.

Environmental performance

We are reporting on our environmental performance in a Group-wide database. Here, deviations are recorded according to predefined categories, from 1 (not significant) to 5 (serious environmental damage).

We also record our specific emissions using key water, air and waste figures. Due to poor utilisation, product transfers and elevated losses in volume (due to tests and missing side runs), the specific consumption figures are at an unsatisfactory level.

In accordance with the specifications of our integrated management system for quality, environment, energy and occupational safety, we evaluate environmental impact through internal and external audits.

Paper production requires considerable amounts of energy. In previous years, we therefore made substantial efforts to increase our energy efficiency on the site.

To pursue continuous improvement in energy efficiency and environmental responsibility, we also set targets and measures for 2023.

Our airborne emissions have been well below the limit values for many years. Over the last decade, we have managed to reduce the specific nitrogen oxide load by 39% by replacing the steam power plant and implementing other technical measures on the energy generation plants, such as flue gas recirculation.

The absolute quantity of waste and by-products fell, primarily by reducing the operating time of the solid material boiler (CHP 2).

We were also able to recycle all the boiler ash from the combined heat and power plant for use as a product for soil stabilisation, as an aggregate for various building materials, and for the use of caustic soda in our own production facilities.



Wolfgang Ohnesorg
General Manager



Ute Soller,
Manager
OHS/Environment & Management Systems



Martin Heinrich,
Senior Specialist
Environment & Management Systems

- ▶ We also worked with a filler supplier to develop another way to reuse the ash – as a substitute for some of the burnt lime needed for producing calcium carbonate.

In the wastewater system, we successfully implemented the “Advanced Process Control” project, through which the use of artificial intelligence has made it possible to increase the stability of system operation and permanently lower the discharge values.

In 2023 there were six complaints about noise pollution, which were caused by the reduced operation of the equipment and the decommissioning of PM 6. The resulting regular yet non-permanent drawing off of steam resulted in unplanned steam release and therefore unusual noise pollution. The surrounding neighbourhood was informed about the situation in the mill and about planned measures with a flyer.



Contribution to UN Sustainable Development Goals in 2023

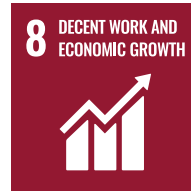


Energy

District heating in Schongau was increased by

11%

between 2014 and 2023



Employees

Currently

27

trainees at the Schongau mill
7 paper technologists
2 paper technologists on a dual work-study programme
8 operating technology electricians
10 industrial mechanics



Certified fibre

In 2023, the proportion of wood chips from sustainably managed forests (PEFC + FSC) was

91%

70%

Proportion of recycled fibres in paper we produced in 2023



Air

Specific emissions of nitrogen oxides from the power plants have been reduced by

39%

between 2014 and 2023

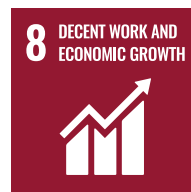


Water

Specific nitrogen load (inorganic) in treated wastewater (kg nitrogen per tonne of paper) reduced by

57%

between 2014 and 2023



Safety

Number of accidents with lost time has been reduced by

43%

(7 in 2014; 4 in 2023)

Air



Airborne emissions were kept at a consistently low level in 2023. We were able to replace natural gas with thermally recycled internal production waste and waste wood. The high proportion of primarily biomass fuels helps to reduce our fossil CO₂ emissions.

The specific NO_x emissions have not changed much over the last few years. The minor fluctuations are the result of using gas and steam turbines in a way that optimises heat and power.

With the fluidised bed boiler, the average concentrations of nitrogen oxides

(NO_x) and particulate matter are at a low level, well below the limit values.

Emissions from energy generation plants exceeded the half-hourly average values for CO and NO_x and one daily average value for NO_x. The parallel mercury readings taken with a newer meter confirmed that the excessively high figures reported in the previous year were inaccurate. The old mercury meter has now been replaced with a state-of-the-art measuring device.

Waste



Solid fuel is used in the fluidised bed boiler at the Schongau site. Most of the residue (49,098 t) produced during energy generation is categorised as ash product (in accordance with the German Law on the Circular Economy – *Kreislaufwirtschaftsgesetz*) and is used in the building materials and cement industry. The recovery rate is, however, affected by seasonal and cyclical fluctuations. In 2023, 100% of the ash was recycled for use as a product. Furthermore, the sawdust produced (1,082 t) is categorised as a by-product and fully reused.

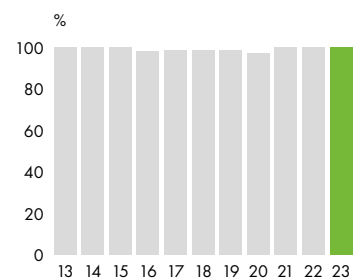
In 2023, the recycling rate for non-hazardous waste and by-products was 99.98%. The bed sand from the combined heat and power plant was fully recycled. The majority of hazardous waste is fabric filter ash from the CHP plant.

Landfill

The former Rösenau landfill site on the mill premises is on the other side of the river Lech. Until 2009, it was used for disposing of ash and bed sand from CHP 2. This landfill is leased out and used for energy generation using photovoltaic systems.

The Rösenau landfill has not yet been fully switched over to the after-closure phase. Monitoring of the lysimeter field to assess surface impermeability has not yet been completed. However, the landfill ash bed is impermeable to water. There is no accumulation of seepage water or landfill gas. Several groundwater depth indicators have been installed around the landfill. These are checked for landfill impact on a quarterly basis. The impact on the groundwater has been assessed as non-harmful to the environment.

Recovery rate (non-hazardous waste and by-products)



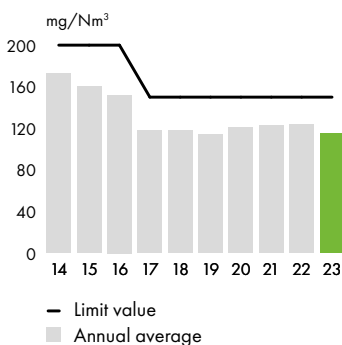
EMISSIONS FROM THE CHP PLANT IN 2023

	Limit value (Daily average value) (mg/Nm ³)	Mean value of measurements (mg/Nm ³)
Fluidised bed boiler/continuous measurement		
CO	50	12
Particulate matter	5	0.2
SO ₂	50	9
NO _x	150	115
Hg _{total}	0.03	0.01
HCl	10	0
C _{total}	10	1
Fluidised bed boiler/one-time measurement		
HF	1	ND
Cd, Tl	0.05	ND
Sb, As, Pb, Co, Cr, Cu, Mn, Ni, V, Sn	0.5	0.001
PCDD/F	0.1 ng/Nm ³	0.003
Gas and steam turbine/continuous measurement		
CO ⁽¹⁾	100–50	19
NO _x	75–100	14

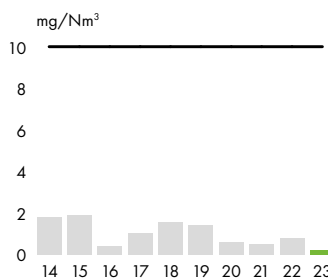
ND = not detectable

⁽¹⁾ Different limit values are defined for the gas and steam turbine depending on the operating mode. The first value is for the gas turbine; the second value is for the waste heat boiler. A mixed calculation is carried out when both systems are operated.

Nitrogen oxides, NO_x, CHP 2



Particulates



Water



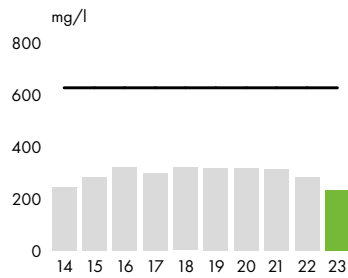
Large volumes of water from the river Lech are required to cool the power plants, steam turbines and machines. This cooling water is not contaminated at all during use and can therefore be discharged directly back into the river. The heat load discharged in this way is constantly monitored. The process water used in the paper production process is bank-filtered water from the river Lech. Only a small proportion of the water, which is used multiple times, leaves the cycle as wastewater.

The capacity of the multi-stage operational treatment plant is the same as a plant for 420,000 inhabitants. Water is first treated chemically and mechanically, and then anaerobically in the IC reactor. Further aerobic treatment takes place in aeration and secondary treatment tanks.

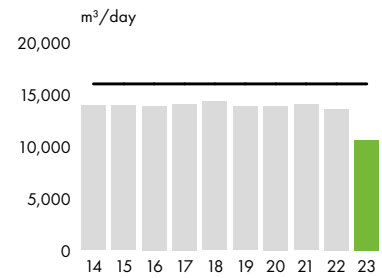
The high quality of the treated wastewater is constantly checked, both internally and by the authorities.

The BOD₅ concentration and load was exceeded multiple times in the treatment plant over the Christmas shutdown due to an insufficient nutrient supply.

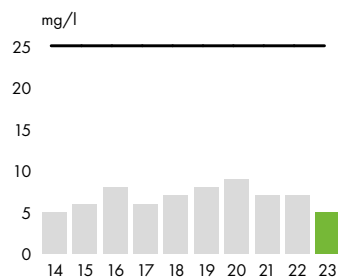
Chemical oxygen demand, COD



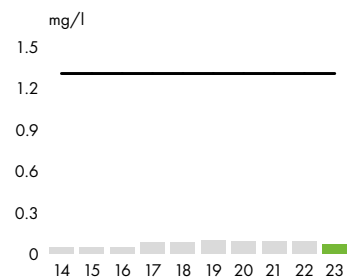
Wastewater volume



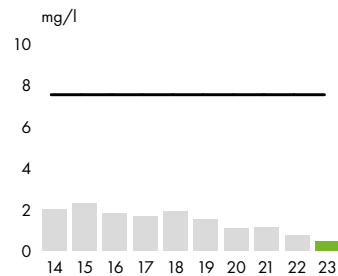
Biological oxygen demand, BOD₅



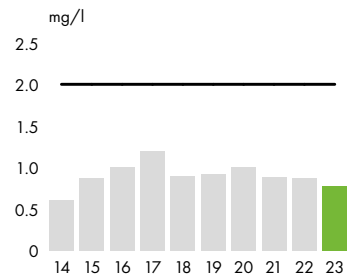
Adsorbable organic halogen compounds, AOX



Nitrogen (inorganic), N



Phosphorus, P



— Limit value
 ■ Annual average

Organisational structure and emergency organisation

Operators in charge are appointed for environmentally relevant production plants and ancillary facilities.

As required by law, appointed officers advise the mill management and the specialist departments in the following areas: immision control, water protection, waste, hazardous goods, radiation protection and internal rail operations.

In addition, there are designated representatives responsible for the integrated management system (quality, environment, energy) and for occupational safety, fire protection and data protection.

Comprehensive emergency plans have been defined for emergencies of all kinds, such as fire, industrial accidents

and environmental incidents. From alerting to immediate action and follow-up, there are guidelines to minimise the effects of an emergency as far as possible. At the emergency centre (factory gate), detailed flow charts are available for different types of emergencies. For emergencies on a larger scale, there are emergency staff who decide on any further action to be taken.

Social responsibility

Well-functioning stakeholder dialogue is a key component for success for UPM. We are committed to developing the vitality of the communities close to our operations through active cooperation and open dialogue with various stakeholders, as well as through sponsorships and employee volunteering.

We impact local communities and societies in many ways. Understanding the impact that we have is an essential component of our business success. In many locations, we are a significant employer, taxpayer and partner to local entrepreneurs, making a positive contribution to the local economy. We take precautionary measures to mitigate or prevent any negative environmental and social impacts on our surrounding communities.

Occupational safety

At UPM, we aim to be an industry frontrunner in occupational health and safety. Our clear goal is zero fatal and serious accidents. We are working to reduce or eliminate accidents in our sphere of influence through continuous improvement and effective risk management. In the process, we are also paying greater attention to reporting positive events. Dealing with occupational health and safety issues is part of our management culture and is further cultivated through various events. For example, in 2023 we held a dialogue on the "human factor" with all supervisors at middle-management level. UPM is planning a new occupational safety programme and in connection with the programme 20% of employees were surveyed about occupational safety at UPM.

The survey was used to define five priorities and a plan of action for 2024, including minimising haste and the hectic pace of production. This topic will be addressed in the dialogues with all managers and the regular meetings with safety officers. Psychological risk analyses are preferred in the production and technology specialist departments, which have been extensively restructured and where a stress seminar is offered for mill workers and office-based employees.

Through our consistent and systematic approach to occupational safety, we have managed to keep the number of

accidents at 4 and the frequency at the same rate of 5.6.

However, we have still not reached our target. We are continuing to work to reduce the accident rate and avoid serious accidents altogether.

Occupational healthcare

UPM Schongau is committed to a working environment, approach to work and lifestyle that are healthy for all employees.

With this in mind, numerous health-related services and activities were offered to the workforce once again in 2023 to promote occupational health. This included regular yoga classes, spine care sessions and a hiking group. UPM Schongau also started offering a corporate fitness programme in January 2023.

Some 80 employees participated in a skin cancer screening in June, and health information about keeping cool in the hot summer months was provided on the intranet. To mark World Heart Day in September, UPM Schongau offered a cardiovascular check, which had a very high uptake.

During a spinal screening as part of the occupational health and safety days, employees were able to put their back health to the test. Information and other activities related to ergonomics were also provided.

The talks offered as part of our workplace integration management programme were attended by a large number of employees, and numerous related health-promoting initiatives have been implemented.

Engaging with communities

UPM Schongau supports numerous cultural and sporting activities and clubs throughout the region.

For example, we supported the Pfaffenwinkel music school again in 2023. UPM Schongau is a long-standing partner for the Schongau Triathlon, which takes place every year in the immediate vicinity of the plant.

The paper mill sponsors various sports clubs in Schongau and the surrounding area.



Installation of an electric boiler for steam production.



Dismantling of the irrigation pipes in the water basin to protect waterfowl.

Biodiversity

The Schongau mill continues to take part in the “Lebensraum Lechtal” biodiversity project to protect habitats in the Lech valley and maintains spawning grounds in the Lech and nesting boxes for birds and bats on the mill site. It also has an initiative to reduce light pollution in order to promote biodiversity.

Cooperation with schools and education

The training facilities at UPM Schongau provide training for paper technologists, operating technology electricians and industrial mechanics.

In September 2023, seven trainees started their training with an extensive induction programme. In collaboration with the surrounding schools, UPM Schongau was able to offer 33 interns the opportunity to complete a one-week taster internship in 2023. This enabled them to gain a deeper understanding of a particular profession or get a taste of different careers on different days. Together with the trainees, our training team attended various vocational training fairs in the area too.



Young kestrels on the mill premises.

The training team was also involved in a range of careers projects at various schools and helped students prepare for applications and initial interviews. Furthermore, seven school classes visited the mill with their teachers and gained an initial insight into paper production during a tour of the premises.

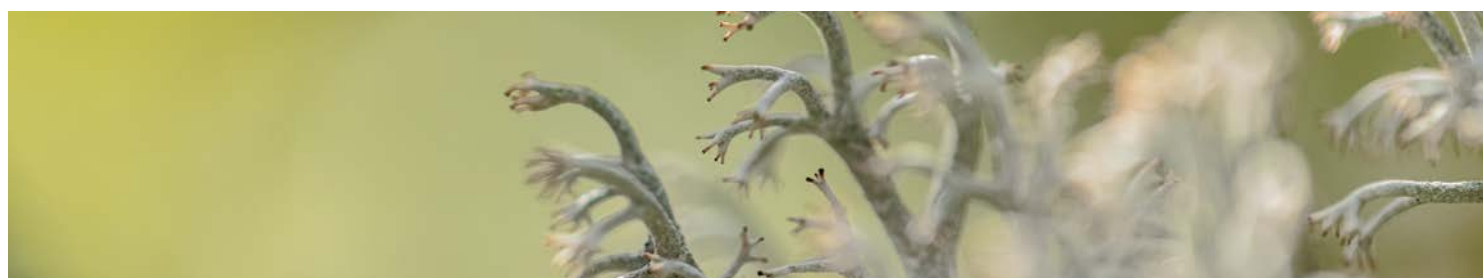
Environmental parameters

Data on production volumes and the consumption of raw material and energy, as well as all specific indicators per tonne of paper, are published as aggregated figures at group level in the Corporate Environmental and Societal Responsibility Statement for UPM's pulp and paper mills.

		2021	2022	2023
Production capacity	Paper (3 paper machines)	Up to 740,000 t	Up to 740,000 t	Up to 740,000 t
Raw materials and additives	Recovered paper Wood chips Fillers Process chemicals Operating supplies	See UPM Corporate Environmental and Societal Responsibility Statement for more information		
Energy	Renewable fuels Fossil fuels Purchased power Hydropower	15% 85%	15% 85%	19% 81%
Airborne emissions	Carbon dioxide, CO ₂ fossil (direct, Scope 1) ¹⁾ Carbon dioxide, CO ₂ fossil (indirect, Scope 2) Nitrogen oxides, NO _x Sulphur dioxide, SO ₂ Particulate matter Carbon monoxide, CO	135,866 t 384,234 t 150 t 1.1 t 2.1 t 48 t	149,833 t 358,423 t 132 t 1.3 t 2.1 t 45 t	113,549 t 258,192 t 106 t 3.6 t 0.1 t 23 t
Water intake	Process, cooling and drinking water of which cooling water of which drinking water	24,101,870 m ³ 18,335,352 m ³ 20,149 m ³	24,894,617 m ³ 19,295,720 m ³ 19,212 m ³	22,737,125 m ³ 18,469,850 m ³ 20,594 m ³
Discharges to water	Wastewater volume Chemical oxygen demand, COD Biological oxygen demand, BOD ₅ Phosphorus, P Nitrogen (inorganic), N Adsorbable organic halogen compounds (AOX) TOC TNb	5,109,588 m ³ 1,583 t 34 t 4 t 6 t 0.5 t 451 t 28 t	4,960,824 m ³ 1,413 t 31 t 4.4 t 4.9 t 0.5 t 430 t 25 t	3,870,814 m ³ 882 t 21 t 3.0 t 2.4 t 0.3 t 252 t 13 t
Waste and by-products²⁾	By-products – Ash – Saw dust Waste for recycling – Bed sand – Metal – Construction waste – Paper and board – Other – Sludge (AVV [Abfallverzeichnis-Verordnung – German Waste Catalogue Ordinance] 030305+030310) – Rejects (AVV 030307) Waste for disposal – Bed sand – Construction waste/rubble Reuse rate (non-hazardous waste and by-products) Hazardous waste	71,547 t 2,048 t 3,741 t 759 t 1,909 t 300 t 350 t 0 t 0 t 0 t 0 t 0 t 100% 1,454 t	64,977 t 1,377 t 3,526 t 600 t 1,027 t 263 t 353 t 2,106 t 477 t 0 t 0 t 0 t 100% 1,608 t	49,098 t 513 t 2,936 t 504 t 1,687 t 77 t 345 t 0 t 232 t 0 t 0 t 0 t 100% 1,259 t
Land use	Total land use: Sealed area: Nature-oriented area on site: Nature-oriented area off site:	38 ha 23 ha 8.5 ha 42 ha	38 ha 23 ha 8.5 ha 42 ha	38 ha 23 ha 8.5 ha 42 ha

¹⁾ The operation of the gas and steam plant (terminology is mill-dependent) is based on energy prices and the electricity produced is fed into the public electricity network. The site electricity needs are largely covered by the public electricity network. The Scope 1 CO₂ volume reported here for UPM Schongau excludes emissions from the electricity fed into the network.

²⁾ Quantity in t absolute dry



Performance against targets in 2023

TARGETS	TARGET ACHIEVED?
1 Energy and fossil CO₂ savings <ul style="list-style-type: none"> – Increase in performance of CHP 2 through APC solutions: constant operation and closer to boiler performance limits; savings of 2,500 t CO₂/a and 13,000 MWh/a – Replacement of the existing TMP heat recovery system; savings of 14,000 t CO₂/a and 70,000 MWh/a – Setup of an electrode boiler for steam production through electricity; savings of 7,500 t CO₂ 	<ul style="list-style-type: none"> – Implemented Dec 2023, evaluation in Q2/2024 – Project in advanced stages; completion in Q2/2024 – Savings currently lower due to utilisation – Project in advanced stages; completion in Q2/2024
2 Wastewater: Expert opinion on reduction of loads of parameters relevant to wastewater charges, with study of offset possibilities	Not implemented due to decommissioning of PM 6
3 Waste Plan for checking product quality of fabric filter ash and preparation for decision-readiness	BImSchG (<i>Bundes-Immissionsschutzgesetz</i> – Federal Immission Control Act) notification set up; testing postponed to 2024
4 Airborne emissions Implement measures to prevent mercury peaks in CHP 2 flue gas	Yes, target achieved
5 Clean Run category 3 Reduction of incidents involving airborne emissions by optimising CHP 2 operation	Yes, target achieved

Current targets for 2024

TARGETS AND MEASURES	DEADLINE	DEPARTMENT RESPONSIBLE
1 Energy and fossil CO₂ savings <ul style="list-style-type: none"> – Develop pre-engineering for energy efficiency project “Excess steam-heat storage in the existing steam power plant container” (potential to save 2,500 MWh/year) and apply for investment – Technological concept development for high-temperature heat storage for excess steam. Steam to be drawn directly from CHP 2 (450°C; 45 bar) – Optimised hot water production at PM 7 and 9 (saving of 2,300 MWh/year) – Project to utilise hood condensate at PM 7; carry out detailed planning and apply for investment (potential to save approx. 1,700 MWh/year) 	31/12/2024	AL EN / WETW
2 Wastewater Reduce the specific wastewater volume Decrease average to < 9 m ³ /t paper; based on paper production of 500,000 t/year. Average for 2023 = 10.3 m ³ /t)	31/12/2024	AL HST/AL WETW
3 Waste Start a pilot project on the material recycling of wet felt and pressed felt	31/12/2024	Sourcing
4 Airborne emissions Increase the amount of recovered paper delivered by rail (to at least 10%).	31/12/2024	Logistics + Sourcing
5 Clean Run category 3 Reduce airborne emission and wastewater discharge incidents: – stabilise/optimize/adapt how the production plants operate, the different grades and plant downtimes	31/12/2024	AL EN/AL HST



Environmental verifier's declaration on verification and revalidation activities

The undersigned EMAS environmental verifier Astrid Günther (DE-V-0357), acting on behalf of the environmental audit organisation “TÜV NORD CERT Umweltgutachter GmbH”, licensed for NACE Code 17.12 (Manufacture of articles of paper and paperboard), declares to have verified whether the UPM GmbH Schongau mill site located at Friedrich-Haindl-Straße 10, Schongau, 86956, Germany, as indicated in the updated Corporate Environmental and Societal Responsibility Statement 2023 of the aforementioned site (registration no. FI-000058), meets all requirements of Regulation (EC) No 1221/2009 of the European Parliament and of the Council of 25 November 2009 as amended by Regulation (EU) 2017/1505 and Regulation (EU) 2018/2026 of the Commission on the voluntary participation by organisations in a Community Eco-Management and Audit Scheme (EMAS).

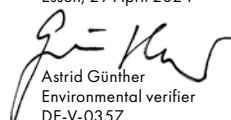
By signing this declaration, I declare that:

- the verification and validation have been carried out in full compliance with the requirements of Regulation (EC) No. 1221/2009,
- the outcome of the verification and validation confirms that there is no evidence of non-compliance with applicable legal requirements relating to the environment,

– the data and information contained in the updated Corporate Environmental and Societal Responsibility Statement 2023 of UPM GmbH, Schongau mill, present a reliable, credible and accurate image of all the activities of UPM GmbH, Schongau mill, within the scope indicated in the updated Corporate Environmental and Societal Responsibility Statement 2023.

This declaration is not equivalent to EMAS registration. EMAS registration can only be granted by a competent body under Regulation (EC) No. 1221/2009. This declaration shall not be used as a standalone piece of public communication.

Essen, 29 April 2024


 Astrid Günther
 Environmental verifier
 DE-V-0357
 TÜV NORD CERT Umweltgutachter GmbH



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