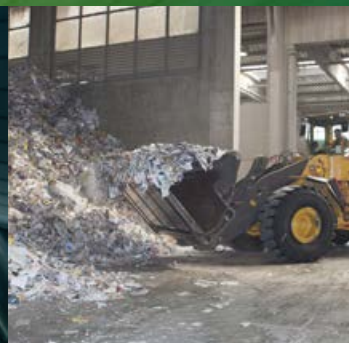


UPM Augsburg

ENVIRONMENTAL AND SOCIETAL RESPONSIBILITY 2022



UPM Augsburg

UPM Augsburg is located on the edge of Augsburg city centre. Founded in 1849, the site currently employs around 292 employees and produces up to 350,000 tonnes of coated supercalendered printing paper in reels per year. The paper is primarily used for magazines, newspaper inserts, advertising brochures and sales and mail order catalogues.

In addition to recovered paper and pigments, virgin fibres such as groundwood pulp and chemical pulp from sustainably managed forests are used as raw materials for paper production. The water required for the production process comes from deep wells on the mill site. The wastewater is cleaned in Augsburg’s municipal treatment plant. The steam required for the paper-making process is generated in a combined heat and power plant operating on natural gas. The mill’s electricity is supplied via the national grid.

The Augsburg site is also home to the head office of UPM Communication Papers and its functions.



UPM Augsburg Environmental and Societal Responsibility 2022 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 2022. 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 2024.

UPM delivers renewable and responsible solutions and innovates 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 17,200 people worldwide and our annual sales are approximately EUR 11.7 billion. Our shares are listed on Nasdaq Helsinki Ltd. UPM Biofore – Beyond fossils. www.upm.com

Production capacity	Up to 350,000 tonnes per annum
Personnel	Augsburg mill: 292 / Augsburg office approx. 99 (total number of employees as at 31 December 2022)
Products	Magazine paper (LWC): UPM Ultra UPM Matt UPM Cote UPM Valor
Certifications	Augsburg mill: ISO 14001 – Environmental Management Systems standard ISO 9001 – Quality Management Systems standard ISO 50001 – Energy Management Systems standard ISO 45001 – Occupational Health and Safety standard PEFC Chain of Custody – Programme for the Endorsement of Forest Certification FSC® Chain of Custody – Forest Stewardship Council® Augsburg mill and Augsburg office: EMAS – EU Eco-Management and Audit Scheme All certificates can be found in the UPM Certificate Finder (available at www.upm.com/responsibility)
Environmental labels	EU Ecolabel (EU flower) for copy and graphic paper



For more information about FSC certification visit fsc.org



For more information about PEFC certification visit pefc.org



EU Ecolabel : FI/011/001

Review of the year 2022

Environmental protection is an integral part of the papermaking processes at UPM Augsburg. Since 1997 we have been working with an integrated management system that combines quality, energy, environmental protection and occupational health and safety, and we also participate in the European Eco-Management and Audit Scheme (EMAS). This means we develop our environmental work independently and document our progress in a transparent and comprehensible manner.

UPM's "Clean Run" campaign

UPM is driving further improvements in environmental performance with the "Clean Run" campaign. All UPM mills are audited to assess the quality of their environmental work and determine any necessary action. In addition, all employees are informed about environmental issues relating to their mill.

Environmental audits

An internal environmental audit was carried out during the reporting year, when our environmental management system was audited by the UPM global environmental department. Execution and implementation at the Augsburg mill was certified as very good.

Working together to achieve goals

Each year, we set ourselves detailed new targets for quality, energy, environmental protection and occupational health and safety. We actively involve our employees both in the setting of goals and the implementation of targets. We consistently work on improving our environmental performance not just within the company, but also in our collaboration with customers, suppliers, authorities and the general public.

UPM is committed to "The Climate Pledge"

The aim of this cross-industry network of major companies is to jointly mitigate the climate crisis and to work towards achieving a carbon-neutral global economy. By signing the agreement in 2021, UPM has committed to achieving the objectives of the Paris Climate Agreement ahead of time.

Environmental protection is a priority

As part of the Finnish UPM Group, we attach great importance to environmental protection and continually optimise our paper production process. We keep

our environmental impact as low as possible, especially with regard to the immediate vicinity. In 2022, we continued to take regular measurements of airborne emissions. This showed once again that our values not only comply with the permissible limits, but in some cases even fall significantly below them.

We always follow up any complaints immediately. In 2022, there were no complaints about tangible environmental impact.



Gerhard Mayer,
General Manager

Eva Männer,
Manager OHSEM

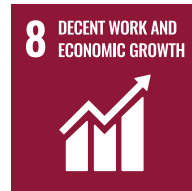
Contribution to UN Sustainable Development Goals in 2022



Energy

Specific electricity input for pulp preparation compared to 2019 improved by

24%



Healthcare

44

employees at the mill participated in the "Bioelectrical impedance analysis" preventive health campaign.



Water

Reduction of specific waste water generation since 2017

-17%



Certified fibre

Forest certification schemes like FSC® and PEFC guarantee that wood, our most important resource, comes from sustainable sources. UPM's target is to use only certified fibre for papermaking by 2030.

86%

certified fibre used for papermaking.



Waste

0 kg/t paper

process waste to landfill.

7 AFFORDABLE AND CLEAN ENERGY



Energy

Compared with 2021, overall power consumption improved by

8%

8 DECENT WORK AND ECONOMIC GROWTH



Occupational health and safety

In 2022, our employees conducted

328

safety observations.

7 AFFORDABLE AND CLEAN ENERGY



Energy

Compared with the previous year, specific use of steam at the PM improved by

11%



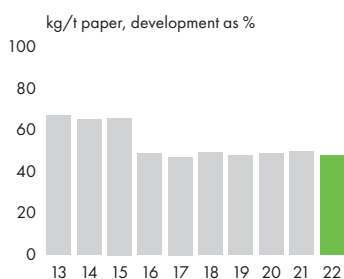
Air



Energy generation is the main source of air emissions from paper mills. Emissions can be reduced through the appropriate choice of fuels and combustion technology, and through flue gas purification. UPM Augsburg has set itself the target of further reducing CO₂ emissions by efficient energy use, as per the strategy

set out in the UPM mills' Corporate Environmental and Societal Responsibility Statement.

Carbon dioxide (fossil), CO₂



Reference year: 2000

CHP EMISSIONS IN 2022

	Limit value (mg/Nm ³)	Mean value of measurements (mg/Nm ³)
CO	50	0.04
NO _x	100	68

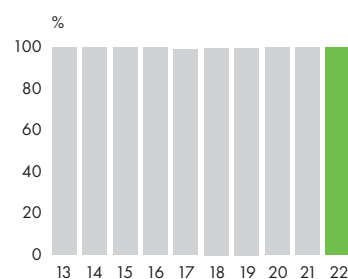
Waste



In line with the circular economy principle, the majority of production waste is recycled. All waste is forwarded to waste management facilities and disposed of in compliance with the relevant statutory requirements.

UPM Augsburg aims to maintain the waste recovery rate at its current level of 99.9%.

Recovery rate



Water



The water for the production process is drawn from deep wells on the mill premises. Virtually continuous water recycling within our systems reduces water use.

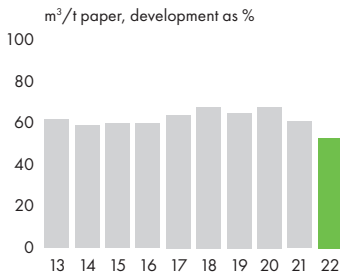
Part of the process water evaporates as the paper web dries. The thermal energy contained in the exhaust air is recovered and reused as much as possible. The remainder is discharged into the ambient air as water vapour. Cooling water is

taken from the Proviantbach, Schäfflerbach and Stadtbach canals.

The process water is recycled several times before it is discharged as effluent to the Augsburg municipal treatment plant for purification.

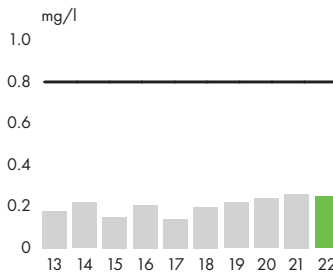
The "Water emissions" emission values on page 10 are the intake values for the Augsburg municipal treatment plant.

Wastewater volume



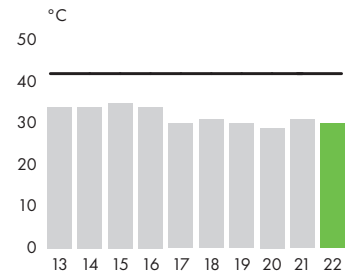
Reference year: 2000

Adsorbable organic halogen compounds (AOX)



— Limit value
■ Annual mean value

Temperature



Organisational structure and emergency organisation

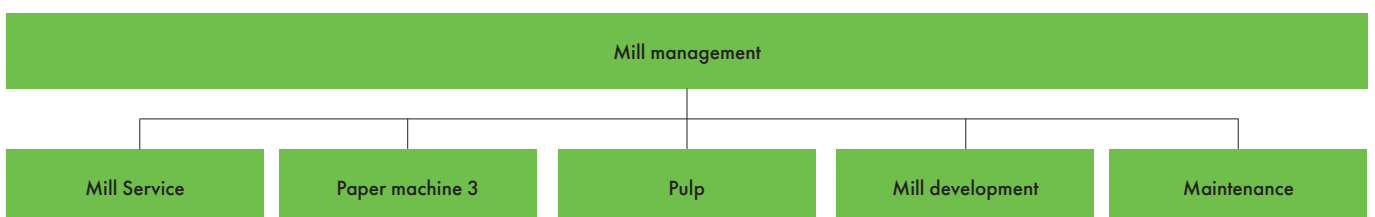
Operators are appointed for environmentally relevant production plants and ancillary facilities.

As required by law, appointed officers advise the mill management and the specialist departments in the following areas: emission 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. Guidelines are in place to minimise the effects of an emergency as far as possible, ranging from alarms to emergency measures and follow-up work. Detailed flow charts are available for different types of emergency. A crisis team has been appointed to decide on action to be taken in the event of emergencies on a larger scale.



Societal responsibility

Improving our environmental performance

We take responsibility for the environment and are committed to minimising the impact of our production operations on our employees and the environment. For example, a solution was found within the UPM Group to use the ash from our fibre residue as a soil stabiliser and as an additive for construction materials. Additionally, UPM sets itself environmental goals that are in line with the Agenda 2030 sustainability targets. A new UPM-wide environmental policy our "Responsibility Statement" was published in 2020.

Significant environmental aspects:

The environmental aspects identified as significant are taken into account by appointing officers and implementing an appropriate operational structure, and by considering these aspects in the mill's targets.

Chemicals

Use of synthetic binders:

In order to continue the replacement of fossil fuels in line with UPM's "Beyond fossils" strategy, the proportion of synthetic binder was reduced by a further 5% in 2022 following the 17% reduction in 2021. This was achieved by replacing the synthetic binder with natural wheat starch.

Less chelating agent and system cleaner used in the water circuit of the grinding department

The amount of chelating agent and system cleaner used in the formulation for the grinding department water circuit was reduced by 50% from April 2022 onwards.

Chemical substitution

During fire extinguisher maintenance, 20 "SG9" foam-based extinguishers containing C8 were identified and replaced with environmentally sound "SX9green" fire extinguishers that use a fluorine-free extinguishing agent.

Hazard analysis of hydrogen sulphide

H₂S gas is a by-product of the production process, and can prove fatal in the worst-case scenario. The danger caused by H₂S can be controlled in confined spaces (where it typically occurs) via the "Confined spaces" safety standard, but the gas is difficult to detect in atypical places (e.g. in ventilated halls) where high concentrations occur suddenly

and briefly. For this reason, a working group developed a hazard analysis that includes the following measures: Substance/water mixtures are categorically never stored for long periods without ventilation or biocide treatment. Screening the production halls for H₂S concentrations revealed new findings. New hazard areas have been defined and documented on the basis of these findings. Staff may only enter these areas if they are carrying a warning device or have their own work permit. All affected employees received training on the requirements using a specially created training document.

Water

Following the reduction from 8.0 m³/t in 2020 to 7.1 m³/t in 2021, the specific wastewater volume was significantly reduced again in 2022, to 6.2 m³/t. In addition to converting the PM3 suction roll to a hydroseal, the most important measure was continuing the trial for the filtration of PM3 super clear filtrate with an Azud filter as a hot water substitute for the PM3.

Energy

Chemical pulp energy consumption

The measures to reduce energy consumption in pulping and grinding were successfully continued in 2022.

After a reduction of 41 kWh/t in 2020 compared to 2019, a further reduction of 45 kWh/t was achieved in 2021 and a further reduction of 22 kWh/t in 2022.

While the focus in 2020 was on the use of new refiner plates (known as "cutback plates") and the reduction of idle power, the focus in 2021 and 2022 was on measures for the technological optimisation of the grinding values ("freeness adjustment").

In particular, the targeted use of automated laboratory measurements enabled the required quality to be monitored much better and the required grinding energy to be controlled in a targeted manner. In addition, the refiner operation was further developed so that the number of refiners to be used was optimised depending on the grade programme and the amount of pulp required.

On the basis of the measures described, total energy consumption in pulping and grinding has therefore been reduced

by 108 kWh/t, or 24%, in the last three years.

Steam consumption of the paper machine in 2022

The steam consumption of the paper machine underwent a very gratifying development in the 2022 reporting year. Thanks to significantly improved efficiency and better heat utilisation as a result, as well as the targeted reduction of the hood supply air temperature, the amount of steam per tonne of finished paper was reduced by 11% compared to the previous year. Consequently, there have been CO₂ savings of the same magnitude.

Total power consumption per tonne of paper

2022 was infamously an extreme year in terms of energy prices and their volatility, dominated by discussions of imminent restrictions on the electricity and gas supply.

This prompted many businesses to develop and implement appropriate risk reduction measures, focusing on energy-saving measures in particular – and the Augsburg mill was no exception.

The measures implemented include the introduction of a "Stop&Go" approach with corresponding changes in formulation and consistent replacement of electricity-intensive groundwood pulp with less energy-intensive fibre and filler materials.

Thanks to the above-mentioned changes in the formulations plus various individual measures, the energy consumption per tonne of paper was reduced by an impressive 8% or so compared to 2021.

Waste

Fibres – reducing fibre losses in recovered paper processing

The recovered paper processing yield increased from 66.5% to 70.0% in 2022. This corresponds to a reduction of around 6600 tonnes of fibre residue per annum.

The main measure for achieving this was the implementation of an advanced process control (APC) system. The control system connects all the individual control loops to each other, which reduces process fluctuations. The higher yield consequently led to a reduction in the use of virgin filler and virgin fibre pulp on the paper machine, as well as

a lower specific energy requirement for recovered paper processing.

Waste separation – dismantling of decommissioned slitter 2

2022 saw the slitter on paper machine 2 dismantled as well. Four different waste codes were defined for this process: three for non-hazardous waste and one for hazardous waste. Around 346 tonnes of waste were generated in total, 100% of which was recycled or recovered.

Waste separation – further measures

The wooden crates, aluminium rods and screens/felts that accrue when changing the clothing on the PM3 are delivered in their entirety directly after a clothing change to our main disposal company, which separates them accordingly and sends them for recycling or recovery.

A metal collection point has been set up at the PM3 to facilitate on-site separation.

A return system for oil and grease drums that have been emptied of residual material has been organised with a disposal company, which recycles them.

Legal compliance

The applicable environmental regulations are adhered to and the existing environmental management system is proactive in responding to changes.

Biodiversity

In order to control the continuing large population of feral pigeons on the mill premises, a supervised pigeon loft was set up at a central location in 2019 in cooperation with the Augsburg animal welfare association (Tierschutzverein Augsburg e.V.), to provide the birds with healthy food and potential nesting sites. Once the pigeons have grown accustomed to the pigeon loft and feel safe in it, their homing instinct means that they spend up to 20 hours a day there. This makes it possible to foster good health, control the population by replacing eggs and reduce fouling on the mill premises. In 2021, it was possible to start exchanging eggs. During the year, a sparrowhawk broke into the loft several times, which drove the pigeons out of the loft on numerous occasions. Unfortunately, the loft cannot make "sparrowhawk-proof".

Promotion of young talent at UPM Augsburg

As a member of the Bavarian/Swabian branch of the "Talente für die Region" (Talent for the Region) business networking company, the Augsburg mill is actively involved in making students and young academics from the area



aware of professional opportunities and offering a platform for an exchange of experiences. In collaboration with the German pulp and paper association (Verband deutscher Papierfabriken e.V.), schoolchildren and students are given insights into the paper industry, different areas of responsibility and opportunities for development, but also into training as a paper technologist or paper engineer.

UPM gets involved

"Humanitarian aid for Ukraine"

In 2022, all UPM employees were called upon to participate in a fundraising campaign for the Red Cross. Every donation counted! UPM has doubled the donations raised by its employees and has donated the corresponding amount to the Red Cross. The Red Cross Emergencies Fund has used the donations collected for humanitarian aid operations in Ukraine.

Furthermore, 249 litres of disinfectant was donated to the Ukrainian association of Augsburg (Ukrainischer Verein Augsburg e.V.), which passed the donation on to the coordination centre of the "Augsburg Help Ukraine" initiative so it could be routed to a Ukrainian hospital.

UPM employee volunteering

The Augsburg mill can look back on a long tradition of support for children in need. Last year, the Cent Parade made donations to the "Bunter Kreis" charity and the St. Nikolaus children's hospice. Both organisations provide support for seriously ill children and their families, and help them with the challenges of daily life. The Cent Parade involves UPM employees donating the cent amounts from their monthly wage packets to charity.

Corporate sports association

For many years, the mill has also supported the work of the UPM-Kymmene Augsburg e.V. corporate sports association.

Corporate health management

Health is a valuable asset. UPM Augsburg is working intensively to protect and promote the health of its employees, as a healthy, efficient and motivated workforce is a prerequisite for the Augsburg mill's success and competitive edge. We aim to create a healthy environment for our employees, increase their awareness of health and occupational safety, and thus lay the foundation for job satisfaction and motivation. Recent years have seen significant improvements in the field of health and safety. Since the implementation of a corporate health management system, occupational health and safety, health support and occupational integration management have become intertwined. The promotion of health and preventive healthcare have become increasingly important. For example, the mill's employees have been provided with free mineral water since September 2017.

In January 2021, we developed a concept to help protect the health of non-smokers. In addition to the concept of reducing our smoking areas, non-smoking seminars have been and will continue to be offered through Allen Carr. Eight colleagues have participated in the seminars so far. Moreover, 22 out of the 30 smoking areas were either relocated or closed by the end of 2022. With this project we have been able to improve the execution of three important goals: healthier working conditions for all, improved fire safety, and further development of the implementation of legal requirements.

Environmental parameters

Data on production volumes, raw material and energy consumption, as well as all specific indicators per tonne of paper, is published as a total figure. This information can be found in the UPM paper and pulp mills' Corporate Environmental and Societal Responsibility Statement.

		2020	2021	2022
Production capacity	Paper	Up to 350,000 t	Up to 360,000 t	Up to 350,000 t
Raw materials and additives	Recovered paper Round wood Pulp Pigments Process chemicals Consumables	See information in the joint part of the Environmental and Societal Responsibility Statement		
Energy	Fossil fuels External power supply	See information in the joint part of the Environmental and Societal Responsibility Statement		
Emissions to air	Carbon dioxide (fossil), CO ₂ Nitrogen oxide, NO _x Carbon monoxide, CO Sulphur dioxide, SO ₂	59,473 t 19.8 t 5.6 t 0.4 t	69,879 t 22.6 t 6.3 t 0.5 t	64,069 t 22.4 t 4.5 t 0.4 t
Water use	Process water Cooling water	2,450,742 m ³ 9,236,055 m ³	2,584,787 m ³ 10,763,158 m ³	2,129,671 m ³ 9,972,593 m ³
Water emissions	Wastewater volume Chemical oxygen demand, COD Biological oxygen demand, BOD ₅ Phosphorus, P Nitrogen (inorganic), N Adsorbable organic halogen compounds, AOX	2,341,831 m ³ 6,696 t 3,199 t 12.2 t 34.9 t 0.6 t	2,375,045 m ³ 6,737 t 3,568 t 10 t 39.5 t 0.6 t	2,000,519 m ³ 5,701 t 2,952 t 6.4 t 36.3 t 0.5 t
By-products and non hazardous waste¹⁾	By-products in accordance with Section 4 of the German waste management act (KrWG): Wood residue Waste for recovery: – Fibre residue – Deinking residue – Waste wood – Metal – Construction waste – Other ²⁾ Waste for disposal: – Construction waste – General waste, e.g. – Other Recovery rate	13,534 t 84,100 t 2,218 t 43 t 2,387 t ³⁾ 239 t ³⁾ 599 t 0 t 18 t 12 t 100%	17,812 t 80,982 t 2,388 t 54 t 1,653 t ³⁾ 80 t ³⁾ 314 t 0 t 18 t 11 t 99.9%	11,776 t 68,536 t 2,697 t 25 t 547 t ³⁾ 90 t ³⁾ 334 t 0 t 18 t 0 t 99.9%
Hazardous waste		51 t	96 t	46 t
Plant area	Sealed areas (including third party-operated hydropower plants) Semi-natural areas on mill premises Semi-natural areas outside mill premises Total surface area	23.7 ha 3.6 ha 0 ha 27.3 ha	23.7 ha 3.6 ha 0 ha 27.3 ha	23.7 ha 3.6 ha 0 ha 27.3 ha

¹⁾ All figures including moisture

²⁾ Other recyclable waste and general waste for recovery

³⁾ Decommissioned paper machine at the mill being dismantled as of 2020



Performance against targets in 2022

TARGETS	TARGET ACHIEVED?
1 Energy use – Reduce energy use for RCF; actual target for 2021: –5 kWh/t – Reduction of specific energy use for chemical pulp production; actual target for 2021: –15 kWh/t	– Target achieved: now –20 kWh/t – Target achieved: now –22 kWh/t
2 Recycling Reduce recovered paper loss factor by –0.5%	Target achieved: now –3.5% points (33.5% => 30% in 2022)
3 Water Reduce specific wastewater generation by –0.3 m ³ /t compared to 2021 (higher water purification via sand filter and Azud filter, hydroseal sealing system on the suction roller)	Target achieved: now –0.9 m ³ /t.
4 Chemicals Reduce synthetic binder in coating colour by 10% compared to 2021 (Measures: use of native starch)	Target partially achieved; synthetic binder has been reduced by 5% in standard formulations.
5 Waste Reduce volume of general waste by –5% compared to 2021 (Measures: departmental analysis of current situation and deducing measures for reduction)	Target achieved: now –9%
6 CleanRun – Reduce category 0–2 incidents by 50% compared to 2021 (especially in the wastewater sector) – No category 4 and 3 deviations	– Target not achieved – Target achieved

Targets for 2023

TARGETS AND MEASURES	DEADLINE	DEPARTMENT RESPONSIBLE
1 Energy use – Reduce energy use for RCF; actual target for 2022: –10 kWh/t – Reduce energy use at the PM; actual target for 2022: –8,000 MWh/a – Reduce compressed air consumption by 200,000 Nm ³ compared to 2022	12/2023 12/2023 12/2023	Production Production Production
2 Water Reduce specific waste water volumes by –0.3 m ³ /t compared to 2022 (higher water purification via sand filter and Azud filter, hydroseal sealing system on the suction roller)	12/2023	Production
3 Chemicals – Reduce defoamer use in coating colour by 20% compared to 2022 – Reduce chelating agent in the grinding shop by 20% compared to 2022	12/2023 12/2023	Production Production
4 Waste Reduce volume of general waste by –5% compared to 2022 (Measures: departmental analysis of current situation and deducing measures for reduction)	12/2023	Production
5 CleanRun – Reduce category 1 and 2 incidents by 50% compared to 2022 – No category 4 and 3 deviations	12/2023 12/2023	Production Mill management



Environmental verifier's declaration on verification and revalidation activities

The undersigned EMAS environmental verifier Astrid Günther (DE-V-0357), acting for the environmental audit organisation "TÜV NORD CERT Umweltgutachter GmbH", licensed for the area NACE Code 17.12 (paper production), declares to have verified whether the site of UPM GmbH, Augsburg mill in 86153 Augsburg, Georg-Haindl-Str. 4+5, Germany, as indicated in the updated Environmental and Societal Responsibility Statement 2022 of the aforementioned mill (registration number FI-000058), complies with all the requirements of Regulation (EC) No. 1221/2009 of the European Parliament and of the Council of 25 November 2009, as amended by Commission Regulation (EU) 2017/1505 and Commission Regulation (EU) 2018/2026, on the voluntary participation by organisations in an 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 the applicable environmental regulations,

– the data and information in the updated Environmental and Societal Responsibility Statement 2022 of UPM GmbH, Augsburg mill, reflect a reliable, credible and accurate image of all activities of UPM GmbH, Augsburg mill, within the scope mentioned in the updated Environmental and Societal Responsibility Statement 2022.

This declaration is not equivalent to EMAS registration. EMAS registration can only be granted by a competent authority under Regulation (EC) No. 1221/2009. This declaration must not be used as an independent basis for public communication.

Augsburg, 4 August 2023

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



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