

UPM Augsburg

ENVIRONMENTAL AND SOCIETAL RESPONSIBILITY 2020



UPM Augsburg

Founded in 1849, UPM Augsburg is sited near the city centre of Augsburg. The mill with its workforce of some 319 people produces up to 350,000 tonnes per annum of coated supercalendered printing paper in reels, which is mainly used for magazines, newspaper supplements, advertising brochures, sales literature 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 2020 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 2020. 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 2022.

UPM delivers renewable and responsible solutions and innovates for a future beyond fossils across six business areas: UPM Biorefining, UPM Energy, UPM Raflatoc, 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 18,000 people worldwide and our annual sales are approximately EUR 8.6 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: approx. 319/ Augsburg Office: approx. 107 (total number of employees as at 31.12.2020)
Products	Magazine paper (LWC): UPM Ultra UPM Matt UPM Cote UPM Valor
Certificates	Augsburg mill: ISO 14001 – Environmental Management System ISO 9001 – Quality Management System ISO 50001 – Energy Management System 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® Augsburg mill and Augsburg Office: EMAS – EU Eco-Management and Audit Scheme All certificates can be found from UPM’s Certificate finder (available at upm.com/responsibility)
Environmental labels	EU Ecolabel for cop 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 2020

Environmental protection is an integral part of the papermaking processes at UPM Augsburg. Since 1997 we have used an integrated management system which now covers quality, energy, environmental protection and occupational health and safety, and we also participate in the EU Eco-Management and Audit Scheme (EMAS) in order to further develop our environmental work responsibility and document it in a transparent and traceable manner.

UPM's "Clean Run" campaign

In order to improve its environmental performance, UPM is promoting its group-wide "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 environmentally relevant audit took place during the reporting year, when an external auditor conducted an assessment to renew our certification to the EU Ecolabel (EU flower) without identifying any deficiencies.

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.

Environmental protection is a priority

As a company of the Finnish UPM Group, we are committed to conserving the environment and continually optimising our production processes in order to minimise the environmental impact of our operations, particularly in the immediate vicinity of our mill. We also took regular measurements of airborne

emissions from the mill in 2020, and we are happy to report that, once again, our discharge levels not only complied with the permissible limits, but were often well below these limits.

We always follow up any complaints immediately. In 2020, there were no complaints about tangible environmental impacts.



Gerhard Mayer,
General Manager

Eva Männer,
Manager OHSEM

Responsibility figures 2020

Energy



Specific electricity input for pulp preparation compared to 2019 improved by

9%

Waste



0 kg/t paper

process waste to landfill.

Energy



-14%

reduction in specific total energy use since 2010.

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.

91%

certified fibre used for papermaking.

Health



170

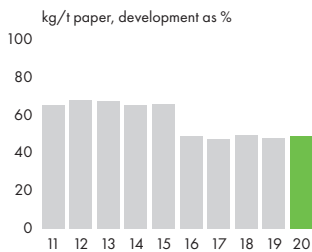
employees at the site participated in the "Bowel Cancer Screening" health prevention campaign.

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 Statement.

Carbon dioxide (fossil), CO₂



Reference year: 2000
Slight increase compared to 2019 due to lower production volumes in 2020.

CHP PLANT EMISSIONS 2020

	Limit value (mg/Nm ³)	Mean value of measurements (mg/Nm ³)
CO	50	1
NO _x	100	60

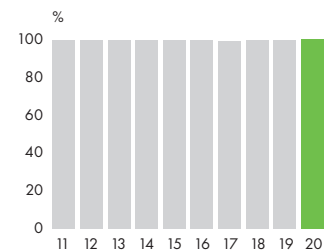
Waste



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 100%.

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.

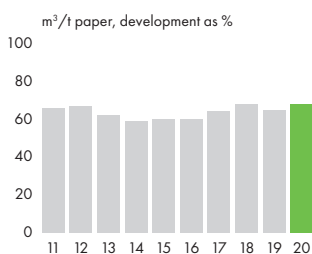
Part of the process water evaporates as the paper web dries. The thermal energy contained in the exhaust air is recovered and reused as much as possible. The remainder is discharged into the ambient

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.

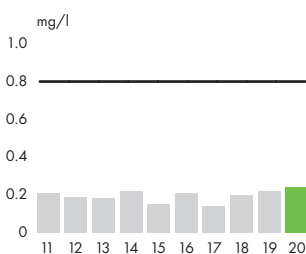
In 2020 there was only one failure to comply with the limit values specified in the mill's operating permits (sediment volume, AOX, temperature, pH value, volume flows, discharge volumes), when the volume of wastewater sediment exceeded the limit due to a technical malfunction. Appropriate countermeasures were taken in consultation with the authorities.

Wastewater volume



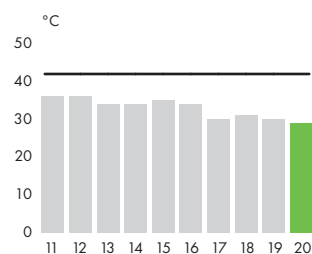
Reference year: 2000
Slight increase compared to 2017 due to lower production volumes in 2020.

Adsorbable organic halogen compounds (AOX)



— Limit value
■ Annual mean value

Temperature



Organisational structure and emergency organisation

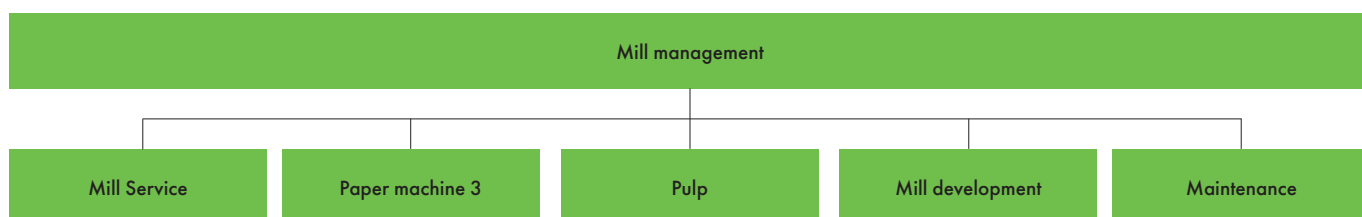
Operators are appointed for environmentally relevant production plants and ancillary facilities.

As required by law, appointed officers advise the mill management and the specialist departments in the following areas: immission 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.

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 polyacrylamide:

Consumption of cationic polyacrylamide, which is used for the mechanical separation of solids in wastewater, has been reduced through two measures: Firstly, a more efficient flocculant has been in use since the beginning of the year. Secondly, automated metering was introduced in August as part of major works. This enabled the specific flocculant consumption for the amount of recovered paper pulp generated to be reduced from 0.98 kg/t of recovered paper pulp to 0.7 kg/t – a decrease of more than 28% in comparison to 2019. The full savings achieved through automation will only become apparent in 2021.

Use of synthetic binders:

In line with the UPM "Beyond fossils" strategy, implementing the "enzymatic preparation of coating starch" project in 2020 created the conditions for reducing the synthetic binder content in our paper coating and replacing it with natural wheat starch. A further minimisation of synthetic binder content is planned for 2021.

Chemical incident processing

In 2020, approximately 10 tonnes of coating starch spilled during an unloading process from a truck. The material, classified as water hazard class 1, was deposited over an area of approximately 1000 m². The spill was completely cleared and there was no danger to the water body at any time.

A loosened clamp on the discharge hose was identified as the cause. The incident was reported to the Environment authority. The Environment authority was notified of the clean-up status and of the action taken. Measures have been defined to prevent incidents of this kind in the future.

Water

The wet debarking drum (built in 1956) in the grinding plant is at the end of its service life and was decommissioned on 7 April 2020. The unit is driven by carrier water. The seals designed to keep the carrier water in the system were severely clogged. This resulted in substantial carrier water loss directly into the wastewater. It was no longer possible to repair the seals. The drum's last recorded fresh water consumption was 199,853 m³ (in 2019) and has now been completely eliminated as a result of the shutdown (in 2020, 73,134 m³ was used up to the cease of operations). Since the shutdown, groundwood debarking has been temporarily restricted to one line (the "two-metre line"). During this period, no wood longer than two metres can be debarked. This leads to limited availability of groundwood. In the medium term, the six-metre saw will be brought back into use for a project that is expected to be operational in the week commencing 15 March 2021. This will enable the full range of timber lengths to be accessed again when sourcing wood.

Energy

A successful and highly impressive reduction of energy consumption for pulping and grinding was achieved in 2020. The use of new refiner plates (cut-back plates) in particular resulted in significant savings in the refiners' idle power consumption. This in turn opened up additional potential, in the sense that a refiner could be dispensed with completely at times (depending on the programme selected) and the required volume could still be ground.

As a result, the specific power input for dissolving and grinding pulp in 2020 was significantly reduced by 41 kWh/t – a 9% decrease in comparison to the previous year.

Fibres — reducing fibre losses in recovered paper processing

The recovered paper processing yield increased from 64.6% to 65.1% in 2020. This corresponds to a reduction of almost

900 tonnes of fibre residue per annum. The main measure for achieving this was the regular adjustment of the ash and brightness values in the recovered paper stock. At the same time, this leads 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 and in the overall paper production process.

Waste separation — dismantling of decommissioned paper machine 2

The paper machine for manufacturing SC paper, which was built in 1955 and shut down in 2017, began to be dismantled in 2020. An external specialist company was commissioned to work closely with UPM Augsburg to determine the relevant waste codes and disposal methods. Eleven different waste fractions were defined in 2020: ten of non-hazardous waste and one of hazardous waste. Since the hazardous waste was potentially contaminated insulation material, disposal via landfill was stipulated. A total of about 2264 tonnes of waste was generated in 2020, of which only 0.05% was disposed of – 99.95% of the waste was recycled or recovered. The dismantling work on the paper machine and its downstream facilities is not yet complete and will continue into 2021.





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 dovecote and feel safe in it, their homing instinct means that they spend up to 20 hours a day there. This makes it possible to promote their state of health, control the population by replacing eggs and reduce fouling on the mill premises. About 80 pigeons were housed in the loft at the end of 2020, and the trend is rising.

Promotion of young talent at UPM Augsburg

As a member of the Bavarian and Swabian branch of the "Talente für die 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 a collaboration with the German pulp and paper association (VDP), school-children 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

As part of its "Share&Care" programme, the Augsburg mill has donated 20,000 protective face masks to various social institutions and charities, including homeless and addiction centres.

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 club.

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.

Environmental parameters

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

		2018	2019	2020
Production capacity	Paper	Up to 370,000 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 UPM Corporate Environmental and Societal Responsibility Statement for more information		
Energy	Fossil fuels External power supply	See UPM Corporate Environmental and Societal Responsibility Statement for more information		
Emissions to air	Carbon dioxide (fossil), CO ₂ Nitrogen oxide, NO _x Carbon monoxide, CO Sulphur dioxide, SO ₂	67,406 t 28.6 t 7.5 t 0.7 t	65,860 t 22.9 t 6.5 t 0.5 t	59,473 t 19.8 t 5.6 t 0.4 t
Water intake	Process water Cooling water	4,222,237 m ³ 7,355,374 m ³	2,788,781 m ³ 11,073,237 m ³ ³⁾	2,450,742 m ³ 9,236,055 m ³
Wastewater discharge to external treatment plant	Wastewater volume Chemical oxygen demand, COD Biological oxygen demand, BOD ₅ Phosphorus, P Nitrogen (inorganic), N Adsorbable organic halogen compounds, AOX	2,611,806 m ³ 6,818 t 3,252 t 9.9 t 36.8 t 0.5 t	2,529,897 m ³ 7,255 t 3,275 t 10.5 t 40.3 t 0.6 t	2,341,831 m ³ 6,696 t 3,199 t 12.2 t 34.9 t 0.6 t
By-products and waste¹⁾	Total waste volume (excluding hazardous waste) of which By-products in accordance with §4 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 Hazardous waste	109,928 t 17,384 t 89,426 t 2,075 t 55 t 246 t 46 t 558 t 106 t 27 t 5 t 99.6% 273 t	109,550 t 15,872 t 90,065 t 2,405 t 51 t 251 t 45 t 735 t 102 t 18 t 6 t 99.6% 341 t	103,201 t 13,534 t 84,100 t 2,218 t 43 t 2,387 t ⁴⁾ 239 t ³⁾ 599 t 0 t 18 t 12 t 100% 51 t
Land use	Total surface area Sealed areas (including third party-operated hydropower plants) Semi-natural areas on mill premises Semi-natural areas outside mill premises	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 23.7 ha 3.6 ha 0 ha

¹⁾ All figures incl. moisture

²⁾ Other recyclable waste and residual waste for recovery

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

⁴⁾ More than 200 tonnes of track ballast disposed of during maintenance work in 2020



Performance against targets in 2020

TARGETS	TARGET ACHIEVED?
1 Energy use – Stabilise and reduce energy use for groundwood pulp; actual target for 2019: –10 kWh/t – Reduce energy use for RCF; actual target for 2019: –20 kWh/t – Reduction of specific energy use for pulp production; actual target for 2019: –45 kWh/t	– Target not achieved; actual energy use for groundwood pulp for 2020: +22 kWh/t – Target not achieved; actual energy use for RCF for 2020: –5 kWh/t – Target not achieved; actual power use for chemical pulp for 2020: –41 kWh/t
2 Recycling Reduce recovered paper loss factor by –0.5%	Target achieved; losses reduced by 0.5%
3 Water Reduce specific wastewater volumes by –0.2 l/kg by 2019 (Measures: efficiency increase for PM 3, reduce water loss from wet debarking drum (replace seals))	Target not achieved due to low capacity utilisation
4 CleanRun No category 4 and 3 deviations.	Target not achieved; one category 3 incident in 2020

Targets for 2020

TARGETS AND MEASURES	DEADLINE	DEPARTMENT RESPONSIBLE
1 Energy use – Stabilise and reduce energy use for groundwood pulp; actual target for 2020: –10 kWh/t – Reduce energy use for RCF; actual target for 2020: –10 kWh/t – Reduction of specific energy use for chemical pulp production; actual target for 2020: –25 kWh/t	12/2021	Production
2 Recycling Reduce recovered paper loss factor by –0.5%	12/2021	Production
3 Water Reduce specific wastewater volumes by –0.3 l/kg by 2020 (higher water purification via sand filter and shutdown of wet debarking drum)	12/2021	Production
4 Chemicals Reduce synthetic binder in coating colour by 10% compared to 2020 (Measures: use of native starch)	12/2021	Production
5 Waste Reduce volume of general waste by –5% compared to 2020 (Measures: departmental analysis of current situation and deducing measures for reduction)	12/2021	Production
6 CleanRun No category 4 and 3 deviations.	12/2021	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 Statement 2020 of the aforementioned site (registration number FI-000058), meets all requirements of Regulation (EC) No. 1221/2009 of the European Parliament and of the Council dated 25 November 2009, as amended by Regulation (EU) 2017/1505 and Commission Regulation (EU) 2018/2026, 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 the applicable environmental regulations,
- the data and information in the updated Environmental Statement 2020

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 Statement 2020.

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 May 2021

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

We reduce the world's reliance on fossil-based materials by developing renewable and responsible products and solutions in all our businesses. **UPM Biofore – Beyond fossils.**



www.upm.com

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