

UPM Augsburg

ENVIRONMENTAL AND SOCIETAL RESPONSIBILITY 2018



UPM Augsburg

Founded in 1849, UPM Augsburg is sited near the city centre of Augsburg. The mill with a workforce of some 336 people produces up to 370,000 tonnes per annum of uncoated and coated supercalendered printing paper in reels, which is mainly used for magazines, advertising supplements, publicity booklets, sales literature and mail order catalogues.

In addition to recovered paper and pigments, virgin fibres such as groundwood pulp and chemical pulp from sustainable forestry are used as raw materials for paper production. The water required for the production process comes from deep wells on the mill site. The effluents are cleaned in Augsburg's municipal treatment plant. The steam required for the papermaking process is generated in a combined heat and power plant operating on natural gas. The mill's power needs are 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 2018 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 2018. 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 UPM Corporate Environmental and Societal Responsibility Statement and also this supplement will be published in 2020.

We deliver renewable and responsible solutions and innovate for a future beyond fossils across six business areas: UPM Biorefining, UPM Energy, UPM Raflatac, UPM Specialty Papers, UPM Communication Papers and UPM Plywood. We employ around 19,000 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 370,000 tonnes per annum
Personnel	Augsburg mill: approx. 336/Augsburg Office: approx. 350 (full time employees including apprentices, as at 31.12.2018)
Products	Magazine paper (LWC): UPM Ultra UPM Matt UPM Cote UPM Valor
Certificates	Augsburg mill: ISO 14001 – Environmental Management System Standard ISO 9001 – Quality Management System Standard ISO 50001 – Energy Management System Standard OHSAS 18001 – Occupational Health and Safety System 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 from UPM's Certificate finder (available at upm.com/responsibility)
Environmental labels	EU Ecolabel for copying and graphic paper



The mark of responsible forestry

FSC-certified products can be found at: www.fsc.org



PEFC-certified products can be found at: www.pefc.org



EU Ecolabel : FI/011/001

Review of year 2018

Environmental care is an integral part of the papermaking processes at UPM Augsburg. We have been working since 1997 with an integrated management system covering, by now, quality, environment and occupational health and safety and we are additionally reporting under EMAS (the EU's Eco-Management and Audit Scheme) in order to further develop our environmental work responsibly and document it in a transparent and traceable manner.

UPM "Clean run" campaign

In order to further 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 staff are informed about environmental issues relating to the mill.

Environmental audits

In the course of the reporting year, several environmentally relevant audits took place. The Augsburg Environmental Agency audited both the production plant and the power station without identifying any deficiencies.

Additionally, the mill was successfully audited by a customer in accordance with the IKEA IWAY standard. The mill was certified by the auditors to be working to a very high standard.

Working jointly to achieve goals

Each year, we set ourselves detailed new quality, environmental and occupational health and safety targets. 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 co-operation with customers, suppliers, authorities and the general public.

Environmental protection is a priority

As a company of the Finnish UPM Corporation we are committed to conserving the environment, continually optimising our production processes in order to minimise the impact of our operations on the environment and, very importantly, on the local community around our mill. Also in 2018 we undertook regular measurements

of airborne emissions from the mill and we are happy to report once again that our discharge levels were not just in compliance with, but usually well below the limit values.

All complaints were followed up immediately. In 2018 there were no complaints about tangible environmental impacts.



Gerhard Mayer,
General Manager

Eva Männer,
Manager OHSEM

Responsibility figures 2018

Waste



0 kg/t paper

Process waste to landfill

Air



Reduction of specific CO₂ emissions since 2009 by

30%

Water



Specific fresh water consumption reduced by

> 10%

since 2009



Energy

Specific energy efficiency improved by

12%

since 2009

Safety



Occupational safety is a high priority

0 accidents

There were no reportable accidents at UPM Augsburg for the third consecutive year.

Health



195

employees at the site participated in the measurement of the "Intima Media" thickness of the carotid arteries offered as part of the healthcare programme to prevent pathological vascular changes.

Certified fibre



Forest certification schemes like FSC and PEFC guarantee that wood, our most important raw material, comes from sustainable sources. UPM's target is to have all fibres used for papermaking certified by 2030.

90%

certified fibres used for papermaking.

Alerting and emergency planning

153

employees at the site were taught the correct handling of fire extinguishers.

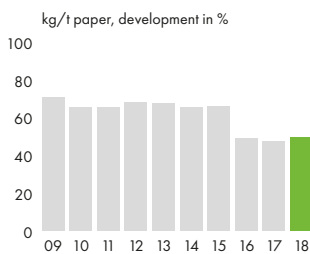
Air



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

In 2018 the half-hourly CO limit was exceeded in one instance following a technical failure. Appropriate counter-measures were taken in agreement with the authority in charge.

Carbon dioxide (fossil), CO₂



Reference year: 2000
Slight increase in comparison with 2017 due to the lower production volume in 2018

EMISSIONS FROM THE CHP PLANT 2018

	Limit value (mg/Nm ³)	Mean value measured (mg/Nm ³)
CO	50	1
NO _x	100	66

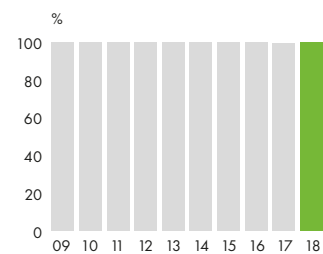
Waste



In line with the principle of closed-loop recycling, the majority of production residues is recycled. Hazardous wastes are forwarded to licensed waste disposal contractors and disposed of in compliance with the relevant statutory requirements.

UPM Augsburg strives to maintain the recovery rate of solid residue, which presently stands at 99.6%, on its current level.

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. We recover and reutilise as much as possible of the thermal energy contained in the exhaust air. The remainder is discharged into the air as water vapour. Cooling water is

taken from the Proviant, Schaeffler and Stadtbach canals.

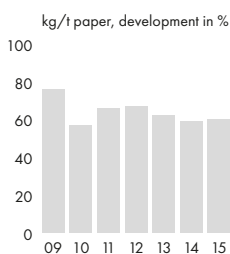
The process water is recycled several times before it is discharged as effluent to the municipal treatment for purification.

There were no exceedances of the limit values stated in the mill's operating permit (solids load, AOX, temperature, pH value, volume streams, volumes discharged).

In 2018 the legionella bacterial load was for a short while too high. Appropriate counter-measures were taken in agreement with the authorities.

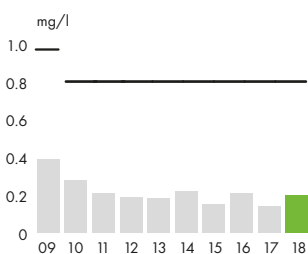
The cooling tower system was replaced by a closed heat exchanger system. The potential risk of legionella contamination was thereby eliminated.

Effluent volume



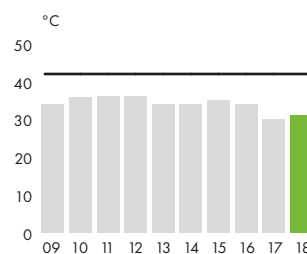
Reference year: 2000
Slight increase in comparison with 2017 due to the lower production volume in 2018

Adsorbable organic halogen compounds, AOX



— Limit value
■ Annual mean value

Temperature



Organisational structure and emergency organisation

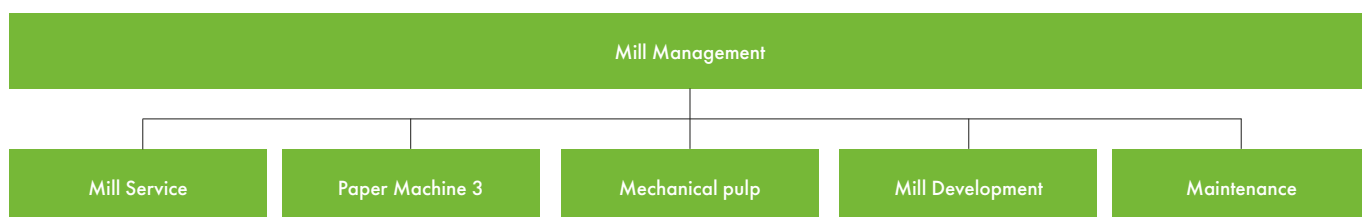
Operators in charge are appointed for environmentally relevant production plants and ancillary facilities.

As required by law, appointed officers advise the mill management and the specialist departments in the following areas: 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. From alerting to immediate action and follow-up,

there are guidelines to minimise the effects of an emergency as far as possible. Detailed flow charts are available for different types of emergencies. For emergencies of a larger scale, there is a crisis team who decides on any further action to be taken.



Social responsibility

Improving our environmental performance

We take responsibility for the environment and are committed to minimising the impacts of our operations on people and the environment. For example, a solution was found within the UPM Group to use the ashes from fibre residues as a soil stabiliser and as an additive for construction materials. Additionally, UPM sets itself environmental goals that are in line with our sustainability targets for 2030.

Significant environmental aspects: Chemicals

At the turn of the year, the cooling water circuit of the PM3 vacuum system was converted to a closed system. As a result, it no longer falls under the provisions of the 42nd BImSchV (Federal Immission Control Act) and no longer has to be treated with biocides. In this way we are able to reduce our biocide use by approx. 17 t/a.

By optimising the coating colour recipe, we were able to significantly reduce the coating colour's binder content. The proportion of synthetic binder in the coating colour was reduced by 8%, decreasing the paper's synthetic binder content by 5%. This corresponds to a reduction of approx. 200 t/year. This result was achieved without any deterioration in paper quality and without the need for additional chemicals.

Compliance with legal requirements

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

Promotion of young talent at UPM Augsburg

The Augsburg mill is a member of the corporate network "Talente für die Region Bayerisch-Schwaben e.V." and is actively involved in showing students and young academics from the area professional perspectives as well as offering a platform for exchange of experience. In cooperation with the Association of German Paper Mills e.V., pupils 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 employee volunteering

The Augsburg site is looking back on a long tradition of support for children in need. Last year, the Cent Parade made donations to "Der bunte Kreis" and the St. Nikolaus children's hospice. Both organisations take care of seriously ill children and their families and help them in their difficult everyday life. Working with the Cent Parade, UPM employees donate the cent amounts on their monthly salary statements for charity.

Children's Christmas party and corporate sports club

Another long-standing tradition is the Christmas party for children of UPM staff. Every year, three to twelve year olds are invited to watch a performance of the Augsburg Puppenkiste puppet theater, followed by a visit of Father Christmas. Additionally, UPM Augsburg has for many years been supporting the activities of the UPM-Kymmene 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, high-performing and motivated workforce is prerequisite for the Augsburg's mill success and competitive edge. We aim to create a health-promoting environment for our employees, promote health and safety awareness among them, and thus lay the foundation for job satisfaction and motivation. Recent years have seen significant improvements in the field of occupational health. For more than three years, the mill has been operating without a single reportable accident and was also able to considerably reduce the number of minor injuries and incidents. In recognition of this outstanding achievement, the Augsburg mill was given the "Best Improver" award 2017, which is a proof of continuous commitment to and improvements in all areas of occupational health and safety.

Since the implementation of a corporate health management system, occupational health and safety, health promotion and occupational integration management have become increasingly interlocked. Disease prevention and

health promotion have become increasingly important. UPM Augsburg offers its employees preventive health checks, for example in the form of Intima-Media measurements or skin cancer screening.

The annual safety day was renamed in 2018 „Safe & Healthy“ day. The programme addressed both health and safety topics and offered the employees an opportunity for exchange. The fact that each individual employee is responsible for his or her own health is illustrated by the foundation of a leisure group. Colleagues meet in order to exercise together, but without any claim to top performance. This year, for example, they played football golf and went on a tunnel tour on a big construction site in Augsburg.

As a further step towards integral corporate health management and a culture of occupational health and safety at the Augsburg, the Occupational Safety Mission Statement was revised and is now called Occupational Health and Safety and Mission Statement.

Moreover, since September of 2017, mineral water is provided to the employees free of charge.

Environmental parameters 2018

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.

Production capacity	Paper	Up to 370,000 t
Raw materials and additives	Recovered paper Round wood Chemical pulp Pigments Process chemicals Operating supplies	See UPM Corporate Environmental and Societal Responsibility Statement for more information
Energy	Fossil fuels Purchased power	See UPM Corporate Environmental and Societal Responsibility Statement for more information
Airborne emissions	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
Water intake	Process water Cooling water	4,222,237 m ³ 7,355,374 m ³
Discharges to water	Effluent volume Chemical oxygen demand, COD Biological oxygen demand, BOD ₅ Phosphorus, P Nitrogen, N (inorganic) Adsorbable organic halogens, AOX	2,611,806 m ³ 6,818 t 3,252 t 9.9 t 36.8 t 0.5 t
Side products and wastes*	Total waste volume (excluding mixed waste), of which side products under §4 KrWG: – Wood residues Wastes for recovery: – Fibre residues – Deinking residues – Waste wood – Metal – Construction waste – Other residues** Wastes for disposal: – Construction waste – Residual waste – Other waste 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
Size of mill area		22 ha

* All figures incl. moisture

** Other recyclable waste and residual waste for recovery



Performance against targets in 2018

TARGETS	TARGET ACHIEVED?
1 Energy – Use boiler no. 10 as “back-up” saving 500 MWh of gas per annum and, consequently, reducing CO ₂ , fresh water consumption and effluent volume – Reduce specific power consumption to 1220 kWh per tonne of paper	– Not achieved to date due to problems with controls of other boilers and boiler no. 10 having to remain operative. We are currently investigating with PM 3 whether the use of boiler no. 10 as back-up can be achieved in the coming months. – Not achieved. 2018: 1270 kWh. Target not achieved due to recipe changes (increase of groundwood content) and lower than expected paper machine efficiency.
2 Recycling – Increase DIP volume on PM 3 to 400 t/d on average – Reduce packaging paper use by 15% per tonne of paper (by using two instead of three layers of packaging for deliveries within EU)	– Not achieved. 2018: 370 t/d, due to temporary quality problems with Butzen and recipe changes to reduce pulp content. – Achieved. 2018: Reduction by 17.3%.
3 Water Maintain specific effluent volume at 7 l/kg	Not achieved: 2018: 8.0 l/kg, due to higher water use of wet debarking drum and lower paper machine efficiency.
4 CleanRun No category 3 and 4 deviations	Not achieved (two category 3 deviations).

Targets for 2019

TARGETS AND MEASURES	DEADLINE	DEPARTMENT RESPONSIBLE
1 Energy a) Use boiler no. 10 as “back up”, saving 500 MWh of gas per annum and, consequently, reducing CO ₂ , fresh water consumption and effluent volume b) Reduce specific power consumption of PM 3 to 570 kWh/t (by maintaining efficiency and taking targeted energy saving measures) c) Reduce specific power consumption for groundwood production to 2,430 kWh/t d) Reduce specific power consumption for DIP production to 640 kWh/t e) Reduce specific power consumption of pulp plant to 395 kWh/t	12/2019 12/2019 12/2019 12/2019 12/2019	Energy Production Production Production Production
2 Recycling Increase DIP volume on PM 3 to 400 t/d on average	12/2019	Production
3 Water Reduce specific effluent volume to 7.2 l/kg	12/2019	Production
4 Sustainability Draw up roadmap to achieve UPM’s 2030 sustainability targets	Q2/2019	Mill management
5 CleanRun No category 4 and 3 deviations	12/2019	Mill management



Environmental verifier's declaration on verification and revalidation activities

Environmental verifier, Astrid Günther (DE-V-0357), acting for TÜV NORD CERT Umweltgutachter GmbH, licensed for the scope NACE Code 17.12 (papermaking), declares to have verified whether the site UPM GmbH, Augsburg mill, in 86153 Augsburg, Georg-Haindl-Strasse 4+5, Germany, as indicated in the UPM Corporate Environmental and Societal Responsibility Statement 2018 of the mentioned site (registration number FI-000058), meets all requirements of Regulation (EC) No 1221/2009 of the European Parliament and of the Council of 25 November 2009 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 has 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 of the Environmental Statement 2017 of UPM GmbH, Augsburg mill, reflect a reliable, credible and correct image of all the activities

of UPM GmbH, Augsburg mill, within the scope mentioned in the Environmental Statement 2017.

This document is not equivalent to EMAS registration. EMAS registration can only be granted by a Competent Body under Regulation (EC) No 1221/2009. This document shall not be used as a stand-alone piece of public communication.

Augsburg, 16. April 2019

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.**



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