

UPM Schongau

ENVIRONMENTAL AND SOCIETAL RESPONSIBILITY 2020



UPM Schongau

UPM Schongau is sited on a bend on the Lech river in the Southern German town of Schongau.

The site was founded in 1887. In 1962, one of the world's first flotation deinking systems went on line in Schongau. This processing technology was a major breakthrough for the recycling of used graphic paper into new printing paper.

Today, UPM Schongau produces printing paper in reels for newspapers, newspaper supplements, advertisers, brochures, magazines and catalogues on three paper machines. Recovered paper is in terms of volume the most important raw material at the site. Other raw materials used include sawmill residues and pigments as fillers. Pigments are partly made on the premises by the local supplier SMI.

The mill's energy generation plants were modernised. Power and steam are generated in combined heat and power plants. The existing power plants were complemented with a modern, highly efficient gas and steam turbine, increasing the mill's share of self-generated electricity.

A small part of the power consumption is covered with hydropower.

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



Production capacity	Up to 740,000 tonnes per annum									
Personnel	580 (total heads as at 31 December 2020)									
Products	Standard and improved newsprint as well as supercalendered uncoated paper: <table border="0"> <tr> <td>UPM Brite</td> <td>UPM News</td> <td>UPM ReCat</td> </tr> <tr> <td>UPM Eco</td> <td>UPM EcoPrime</td> <td>UPM MaxS</td> </tr> <tr> <td>UPM EcoBasic</td> <td>UPM Book</td> <td></td> </tr> </table>	UPM Brite	UPM News	UPM ReCat	UPM Eco	UPM EcoPrime	UPM MaxS	UPM EcoBasic	UPM Book	
UPM Brite	UPM News	UPM ReCat								
UPM Eco	UPM EcoPrime	UPM MaxS								
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 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 from UPM's CertificateFinder (available at www.upm.com/responsibility)									
Environmental labels	EU Ecolabel for all paper grades Blue Angel (RAL-UZ 14a or 72) for UPM News, UPM Eco H/G, UPM ReCat and UPM EcoBasic									



UPM Schongau 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 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 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



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 year 2020

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 plant 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 impacts of our 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 50 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).

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.

Papermaking requires large amounts of energy. In recent years, great efforts have therefore been made to improve energy efficiency at the site.

Also in 2020 we set ourselves targets and measures for continuous improvement in the areas of energy efficiency and the environment.

The global pandemic and the associated lockdowns led to a decline in the demand for printing papers, resulting in repeated production shutdowns, which also affected the environmental indicators and many projects. Priorities had to be changed and, consequently, some of the originally defined goals could not be addressed sufficiently.

Looking at individual units, several energy-saving projects were successfully implemented also in 2020.

For years now, airborne emissions have been well below the limit values. Over the past 10 years, we have been able to reduce the nitrogen oxide load by 28 % through the replacement of the steam power plant and other technical measures in the energy generation plants, such as flue gas recirculation.

The amount of waste and by-products in absolute terms remained more or less constant. The specific amount of waste decreased slightly.

Boiler ash was used as a product to 100%. Applications include use as a soil stabiliser, as an additive for construction materials and as a replacement for soda lye in our own production plants.

Another recovery option for ash was developed in co-operation with a filler ▶



Wolfgang Ohnesorg
General Manager



Ute Soller,
Manager OHS/Environment/
Management Systems



Martin Heinrich,
Management System Representative

Responsibility figures 2020

- ▶ supplier. Ash products shall be used in future to replace part of the burnt lime necessary for making calcium carbonate.

A catalytic converter was installed in the CHP plant in order to reduce the amount of formaldehyde in the flue gas. In order to ensure a safe and stable operation of the effluent treatment plant, further steps were taken to reduce chemical consumption, homogenise effluent volume and co-ordinating the production programme accordingly.

In 2020, complaints were received for odour nuisance. We are in close contact with the neighbourhood and started to systematically investigate the issue with an external expert.

As a fire prevention measure, sprinkler lines were renewed and respiratory protection exercises and training for working at heights were carried out in conjunction with the local THW branch.

Air



Specific emissions of nitrogen oxides from power plant have been reduced by

28%

from 2011–2020

Certified fibre



The share of wood chips from sustainable, certified forests (PEFC + FSC) was

84%

in 2020

74%

share of recycling fibers in the produced papers.

Water



Specific load of nitrogen in cleaned wastewater (tonne nitrogen per tonne of paper) was re-duced by

40%

from 2011 – 2020



Energy

District heating to city of Schongau was in-creased by

15%

from 2011 – 2020

Safety



In 2020 our employees conducted

1,613

Safety observations.



Employment

Currently

33

apprentices at UPM Schongau site
11 paper technologists
10 automation electronics technicians
12 industrial mechanics

Air



In 2020, airborne emissions remained largely constant on a low level. Energy generated from the incineration of process residue and used wood reduced our natural gas usage. The high proportion of mostly renewable fuels contributes to cutting fossil CO₂ emissions.

The mean emission concentrations of nitrogen oxides and particulates from

our fluidised bed boiler are clear below the limits.

The emissions from the power plants were in line with the limit values (half-hourly mean value concentrations) 100 % of the time.

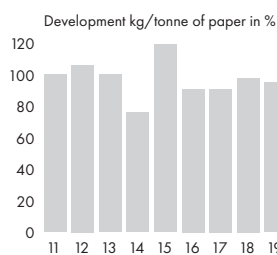
EMISSIONS FROM THE COMBINED HEAT AND POWER PLANT 2020

	Limit value (mg/Nm ³)	Mean value of measurements (mg/N m ³)
Fluidised bed boiler/Continuous measurement		
CO	50	13
Particulate matter	5	0.6
SO ₂	50	0.03
NO _x	150	121
Hg _{tot}	0.03	0.003
HCl	10	0.15
C _{tot}	10	0.05
Fluidised bed boiler/One-time measurement		
HF	1	n.d
Cd,Tl	0.05	n.d
Sb, As, Pb, Co, Cr, Cu, Mn, Ni, V, Sn	0.5	0.004
PCDD/F	0.1 ng/Nm ³	n.d
Gas-powerplant/Continuous measurement		
CO ⁽¹⁾	100–50	14
NO _x	75–100	26

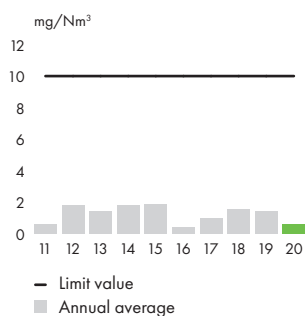
n.d. = not detectable

⁽¹⁾ The gas-powerplant has different values according to operating mode. The first value is valid for the gasturbine, the second value for the recovery boiler. When both are in operation a mixed calculation is done.

Nitrogen oxides, NO_x



Particulates



Waste

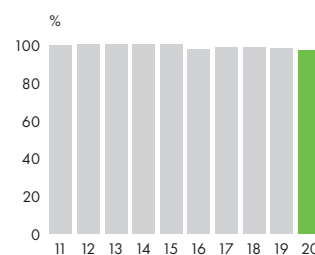


UPM Schongau's fluidised bed boiler is operating on solid fuels. The major part of the ash (75,408 t) resulting from the energy generation process is classified as ash product (in accordance with the German Closed Cycle Management Act) and used for construction materials and in the cement industry. However, the recovery rate is subject to seasonal cyclical fluctuations. In 2020 100% of the ash was used as a product. Furthermore, also sawdust (2,910 t) is classified as side-product which is 100% re-used.

In 2020, the recycling rate for non-hazardous waste and side-products was 97%. For part of the bed ash from the combined heat and power plant no recycling options could be identified. The majority of hazardous waste is bag filter ash from the combined heat and power plant.

Recovery rate

(non hazardous waste and side-products)



Water



A considerable amount of water from the Lech river is required to cool power stations, steam turbines, production machinery and heat recovery systems. Cooling water is not contaminated during use and can be discharged back directly into the river. The heat discharged into the river is continuously monitored. The process water used in paper production is bank filtrate from the Lech river. Only a fraction of the water is discharged as wastewater after it has been recycled within the process several times.

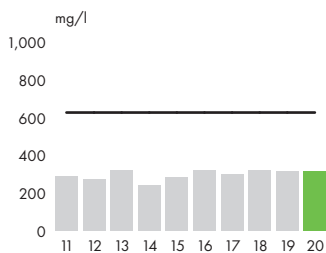
The capacity of the on-site multi-stage effluent treatment plant corresponds to that of a treatment plant for 420,000 people.

Effluents are first cleaned in a chemical-mechanical treatment stage and then in an anaerobic IC reactor. Finally, they are treated aerobically in an activated sludge tank and a clarifier tank.

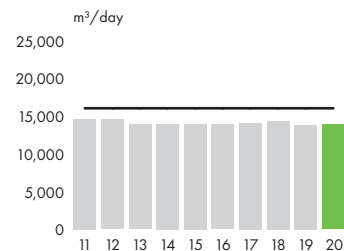
The quality of the treated effluents is continuously monitored, both internally and by the authorities in charge.

During the 10-day Christmas shutdown, the BOD₅ concentration limit was exceeded on three consecutive days. The BOD₅ load during this period remained far below the concentration limit.

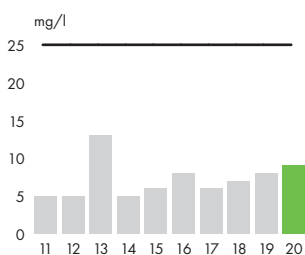
Chemical oxygen demand, COD



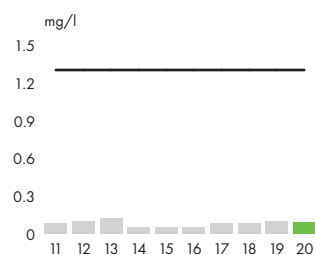
Effluent volume



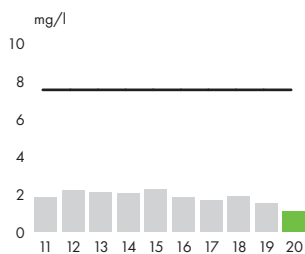
Biological oxygen demand, BOD₅



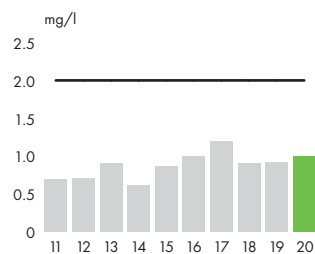
Adsorbable organic halogen compounds, AOX



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: 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 acci-

dents 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 center (factory gate), detailed flow charts are available for different types of emergencies. For emergencies of a larger scale, there is an emergency staff who decides 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 co-operation and open dialogue with various stakeholders as well as, for example, 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 positive contributions to the local economy. We apply several precautionary measures to mitigate and remedy potential negative environmental and social impacts on our surrounding communities.

Occupational safety

At UPM, we aim to be the industry leader in occupational health and safety. Our clear goal is zero fatal and serious accidents.

Our clear goal is zero fatal and serious accidents. We are working to eliminate accidents in our sphere of influence through continuous improvement and effective risk management.

The year 2020 was marked by the Corona pandemic which led to a multitude of operational protective measures deriving from it. The crisis required a high degree of responsiveness from everyone. A large number of organisational measures and regular adjustments of production volume to the market situation, including short-time working periods, were necessary. Communication with the employees was intensified. Our employees were very understanding of the measures and kept the mill running with their flexibility. In this way, we mastered the past year well in terms of health aspects.

Despite a large number of continued actions, e.g. safety observations by employees, and safety walks by managers, we were not able to further reduce the number of accidents (accidents with at least one lost day per one million of working hours) from 2.4 in 2019. The frequency even rose to 7.5.

UPM has not yet reached its safety target and work is continuing to completely prevent any serious accidents.

Occupational healthcare

Our employees' health is very important to us. That is why UPM Schongau is continuously working to create conditions that are conducive to their wellbeing.

Unfortunately, due to the extraordinary situation caused by the Corona pandemic, many health courses and offers had to be paused or postponed. Nevertheless, some classes such as yoga, back training and outdoor sports could be offered temporarily. Also, the online lectures and classes organised as part of UPM Schongau's health management scheme were very well received during this challenging time.

Bicycle leasing has now become an integral part of our health promotion programme. We are pleased that also in 2020 we were able to support many employees with this offer.

Ergonomics in the workplace is an important topic of occupational health management. In 2020, UPM Schongau started to take a close look at workplaces. They are now gradually being equipped with height-adjustable desks.

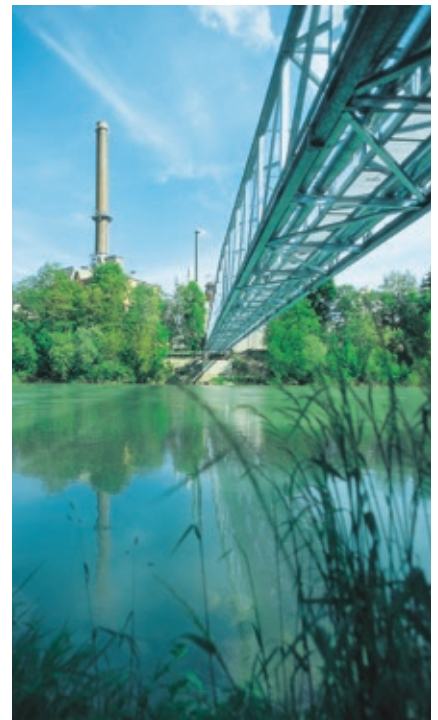
Community involvement

We take our responsibility at the Schongau site seriously. We see ourselves as a partner of the local community and are involved in a number of projects and campaigns. In the sports' field, we supported TSV Schongau in 2020 by sponsoring jerseys. Together with the region's clubs, we remain hopeful that a normal playing season will soon be possible again.

The UPM Group provided 10,000 face masks via its Share and Care Programme to communities at mill locations.

UPM Schongau decided to donate the masks to three social institutions. The donated masks were a great help to the AWO senior citizens' centre in Peiting, the old people's home of the Heiliggeist-Spital-Stiftung in Schongau as well as the Marienheim in Peiting.

Support for children's and youth work and promoting young talent in the



River Lech



In training for apprentices our raw material recovered paper is an important topic

region are matters of concern to us. We are regularly involved in various campaigns, such as Jugend forscht or trade fairs and events.

Since 2018, UPM Schongau has been involved in the Natura 2000 species protection programme "Lebensraum Lechtal" with approximately 2 hectares. This measure serves to protect endangered animal and plant species that occur in this area and to restore the biotope network along the Lech and is part of a long-term concept for the ecological upgrading of this area. Grass and bushes will be kept short by grazing cows, enabling weakly competitive plants such as gentian, oxeye and lady's slipper to thrive.

Cooperation with schools and education

At the Schongau site, we are currently training electronics technicians, industrial technicians and paper technologists. Last September, a future paper technologist started a dual study programme at UPM Schongau.

With this type of study, practical phases in a company alternate with theoretical phases at a university. At the end of the



Colleagues with paper rolls

course, the graduate has acquired a Bachelor's degree and completed vocational training. The Schongau paper mill works together with the University of Applied Sciences in Munich.

In 2020, a total of 15 girls and boys completed an internship at UPM Schongau. In cooperation with the region's schools, good solutions were found,

despite the restrictions caused by the Corona pandemic. This gave the students an opportunity to get to know the commercial and industrial career options at the Schongau site in more detail.

We are happy to report that some of the students decided already during the internship that they were going to train with UPM Schongau!

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 (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	26% 74%	27% 73%	31% 69%
		See UPM Corporate Environmental and Societal Responsibility Statement for more information		
Emissions to air	Carbon dioxide, CO ₂ (fossil) ¹⁾ Nitrogen oxides, NO _x Sulphur dioxide, SO ₂ Particulates Carbon monoxide, CO	268,712 t 187 t 1.2 t 3.9 t 60 t	247,085 t 165 t 0.8 t 3.3 t 58 t	237,429 t 142 t 0.2 t 2.0 t 38 t
Water intake	Process, cooling and drinking water – of which cooling water – of which drinking water	28,100,124 m ³ 22,161,331 m ³ 22,617 m ³	22,316,176 m ³ 16,623,352 m ³ 19,018 m ³	20,871,958 m ³ 15,159,566 m ³ 17,723 m ³
Discharges to water	Effluent volume Chemical oxygen demand, COD Biological oxygen demand, BOD ₅ Phosphorus, P Nitrogen (inorganic), N Adsorbable organic halogen compounds, AOX	5,217,390 m ³ 1,667 t 36 t 5 t 7 t 0.4 t	5,040,024 m ³ 1,617 t 40 t 4.7 t 7.5 t 0.4 t	5,060,754 m ³ 1,620 t 41 t 5.1 t 5.1 t 0.5 t
Waste and side-products²⁾	Side-products – ash – sawdust Waste for recycling – fluidised bed sand – metal – construction waste – paper + board – other Waste disposal – fluidised bed sand – construction waste Recovery rate ³⁾ Hazardous waste	82,087 t 3,391 t 2,890 t 1,148 t 199 t 314 t 230 t 1,389 t 0 t 98% 1,535 t	76,217 t 2,706 t 2,496 t 1,099 t 832 t 384 t 289 t 1,589 t 231 t 98% 1,329 t	75,408 t 2,910 t 1,359 t 744 t 902 t 375 t 563 t 2,715 t 0 t 97% 1,621 t
Land use	Total use of land Total sealed area Total nature-oriented area on site Total 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 combined power plant is operated depending upon the cost of electricity and feeds the gen-erated power into the public grid. The mill's electricity requirements are largely covered with power from the public grid. The CO₂ emissions reported for UPM Schongau are the actual fossil CO₂ emissions from the site, excluding flows of electricity.

²⁾ incl. moisture

³⁾ Calculation includes non hazardous waste and Side-products



Performance against targets in 2020

TARGET	TARGET ACHIEVED?
1 Energy <ul style="list-style-type: none"> Recover condensate from heat recovery units of paper machines Establish working group to reduce compressed air usage 	<ul style="list-style-type: none"> Target achieved – concept developed, costs are being calculated and submitted internally for approval Target achieved
2 Water <ul style="list-style-type: none"> Engineer concept for automatic control to stabilise operation of effluent treatment plant and achieve long-term load reduction Explore potential for reducing specific process water usage taking into consideration future evolution of paper grade mix Design concept to reduce discharge of unpolluted rainwater to treatment plant 	<ul style="list-style-type: none"> Target achieved Implementation under way, to be continued in 2021 Target achieved: concept developed Target not yet achieved, to be continued in 2021
3 Waste <ul style="list-style-type: none"> Develop concept for using bag filter ash as a product, or explore alternative recovery options 	Postponed to 2021
4 Air emissions <ul style="list-style-type: none"> Reduce air emissions by having BCTMP and wood pulp delivered by rail – possible through increase of storage capacity in PM 8 building (2018: 24 lorries, 2019: 42 lorries) 	Target achieved (2020: 12 lorries)
5 Environmental incidents – Clean Run category 3, 4 and 5 <ul style="list-style-type: none"> Cut the number of incidents (2020: 0; 2019: 3) 	Not achieved (1 incident in 2020)
6 Biodiversity <ul style="list-style-type: none"> Cultivate open spaces on mill premises as flower meadows/bee pastures (approx. 1700 m²) 	Target achieved

Targets for 2021

TARGETS AND MEASURES	DEADLINE	DEPARTMENT RESPONSIBLE
1 Energy <ul style="list-style-type: none"> Optimise hot water system in the entire mill through previously unused condensation steam from CHP 3 and condensate recovery from heat recovery systems of paper machines (saving 5000 MW of energy) Integrate heat exchanger in heat recovery system of PM 9 (implementation of concept from 2019), saving 5600 MW of live steam. Develop concept for targeted, grade-specific energy use during TMP grinding 	31.12.21	Manager APC department
2 Water <ul style="list-style-type: none"> Carry out conceptual engineering study for automated control system enabling process stabilisation in WWTP and long-term load reduction Develop concept for treating sulphur in inflow to WWTP Develop concept for reducing inflow of unpolluted rainwater to WWTP 	31.12.21	Manager Pulp Production
3 Waste <ul style="list-style-type: none"> Develop concept for using bag filter ash as a product, or explore alternative recovery options 	31.12.21	Manager WETW
4 Air emissions <ul style="list-style-type: none"> Master's thesis „UPM SOG and carbon neutrality“ to identify possible concepts Buy new wheel loader with 15% lower diesel consumption for wastepaper warehouse 	31.12.21	Manager OHS/Environment Manager pulp production
5 Environmental incidents – Clean Run category 3, 4 and 5 <ul style="list-style-type: none"> Cut the number of incidents (2020: 1; 2021: 0) 	31.12.21	Manager Pulp Production/Energy



Environmental verifier's declaration on verification and validation 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, Schongau mill, Friedrich-Haindl-Strasse 10, 86956 Schongau, Germany, as indicated in the updated Environmental Statement 2020 of the mentioned site (registration no. FI-000058), meets all requirements of Regulation (EC) No 1221/2009 as amended by Commission Regulation (EU) 2017/1505 and (EU) 2018/2026, 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 updated Environmental Statement 2020 of UPM GmbH, Schongau mill, reflect a reliable, credible and correct image of all the

activities of UPM GmbH, Schongau mill, within the scope mentioned in the updated Environmental Statement 2020.

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.

Essen, 07-05-2021


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.**



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