

UPM Plattling

ENVIRONMENTAL AND SOCIETAL RESPONSIBILITY 2019



UPM Plattling

UPM Plattling is located north of Plattling, a small town at the foot of the Bavarian Forest, where the Isar flows into the Danube. With a workforce of nearly 530 people and two paper machines, UPM Plattling produces up to 714,000 tonnes annually of uncoated (SC) and coated (LWC) supercalendered printing papers in reels and sheets for magazines, newspaper supplements, advertising brochures and sales and mail order catalogues.

The organisation of UPM Plattling includes the two production lines of Rhein Papier GmbH. The so far existing legal entity MD Papier GmbH was integrated into Rhein Papier GmbH in September 2019 The Plattling site was founded in the open countryside in 1982. It was originally comprised of the paper machine (PM) 10 to which the PM 11 was added in 1988. In 2007 the mill was expanded to include Rhein Papier GmbH's PM 1 paper machine. The PM 10 was closed in July 2019.

The raw materials used for papermaking include groundwood pulp, recovered paper, chemical pulp and natural pigments. Groundwood pulp is mainly made from forest thinnings from the surrounding areas. All wood fibres used in our production come from sustainable forestry. 99% of the water required for papermaking is taken from the Isar and only to a very small extent from a well on the premises. Process effluents are cleaned in two on-site treatment plants before they are discharged back into the Isar.

All of the steam and the majority of the power for the production processes are generated in the mill's co-owned combined heat and power plant running on natural gas. The remainder of the power is supplied via the public grid.



Production capacity	714,000 tonnes/year of graphic paper				
Personnel	529,5 (total heads as at 1 st January 2020)				
Products	Magazin papers (SC and LWC)) UPM Max UPM Ultra UPM Sol UPM Cat UPM Cote UPM Nova UPM Smart UPM Star				
Side-products	Bark, broken logs and off-cuts				
Certificates	Bark, broken logs and ott-cuts EMAS – EU Eco-Management and Audit Scheme 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 All certificates can be found from UPM's Certificate Finder (available at www.upm.com/responsibility)				
Environmental labels	EU-Ecolabel (EU-Flower)				



UPM Plattling Environmental and Societal Responsibility 2019 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 2019. 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 2021.

UPM offers 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. 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 18,700 people worldwide and our annual sales are approximately EUR 10.2 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



Promoting Sustainable Forest Management www.pefc.org

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

Review of year 2019

Environmental protection is an integral part of all papermaking processes. UPM Plattling has reported its environmental performance since as far back as 2000, when the site successfully gained certification to ISO 14001 and the EU Eco-Management and Audit Scheme (EMAS). As a company of the Finnish UPM – The Biofore Company – we want to demonstrate to our customers, suppliers, employees and the general public that responsible environmental protection is given high priority in our production processes. The continuous improvement process focuses on continuously reducing the demand for energy and water, maximum waste avoidance and the use of environmentally friendly auxiliary materials. Every year, we set ourselves ambitious new environmental goals.

The year 2019 was marked by the

Group's decision to shut down PM 10 due to the declining market for mechanical coated papers. Following the shutdown of PM 10 on 15 July, a large part of the products were transferred to PM 11, enabling Plattling to go on supplying its extensive range of papers. The targeted continuous improvement of environmental performance was significantly limited by the closure of PM 10. Although there were no violations of limit values, there was a clear deterioriation, especially of the specific values of the LWC machine PM 11. The aim here is to return to the 2018 level through process technology improvements and upcoming investments.

UPM Clean Run Campaign

The Group-wide Clean Run Campaign is aimed at ensuring environmentally sound production without environmentally relevant incidents. The mills are audited with regard to their environmental performance and assisted in their further development.

The discharge limits specified in the water permit were complied with. The same goes for the air emission limit values set in the BlmSch permits of the power generation plants.

The requirements of the 42nd BlmSchV for the proper operation of evaporative cooling towers were implemented. The cooling circuits are continuously monitored and effectively conditioned.

In isolated cases the measured value of legionella was exceeded in the evaporative cooling systems of the two vacuum systems. The direct cooling tower of vacuum plant 10 was permanently shut down in July. In vacuum plant 11, cleaning, disinfection and modification of the biocide conditioning were carried out several times with success. As contamination of the cooling circuit continues to occur sporadically, solutions in the form of technical improvements are being sought.

Legal requirements and compliance

UPM Plattling is informed of relevant changes or amendments to legislation by

an external service provider. This is done through a monthly newsletter, which is supplemented by circulars from various industry associations. The legal cadastre with all legal provisions applicable to the site is maintained on an Internet platform. There were no major effects regarding the site in 2019 due to changes in legislation.

Stakeholder feedback

In April, a neighbourhood resident made an anonymous report of noise on the mill premises. No noise source could be found. Another noise complaint in April concerned drivers behaving loudly in the truck parking lot.

In the case of an odour complaint phoned in in March, the mill could be excluded as the cause due to the prevailing wind direction. Since July there has been an increase in odour complaints. One identified source is the preliminary water treatment of PM1. There is a clear case of odour development in the water circuit of PM1 caused by anaerobic processes, especially during shutdown processes. The mill development department is already running a project to avoid odour-forming environments in the PM 1 circuit, and measures to combat odours have also been initiated. The authorities and complainants are involved. As a matter of principle, all reported odour nuisanc-

es must be investigated very thoroughly, as the mill is located in an agriculturally very active area.

Environmental performance

- In the Logistics division, several liquid gas-powered forklift trucks were procured. The rising share of liquid gas has increasingly reduced diesel consumption in the current year. The main advantage of liquefied petroleum gas (LPG) resides in significantly lower NO_v emissions and the absence of soot particle emissions.
- On the SC line, an upgrade of the blowing boxes resulted in a reduction of the fan output by approx. 3,500 MWh/a.
- Three measures were successfully implemented on the LWC line: The dry content of the coating colour formulations was increased, significantly reducing the drying energy required by the coating machine. The specific use of gas and steam for the IR emitters and the drying cylinders was reduced by about 60 kWh per tonne of paper. The first partial step in the refurbishment of the IR emitters was taken, further reducing the energy input at the coating machine by approx. 20 kWh per tonne of paper. On PM11, the retention agent is now diluted with white water instead of hot water, saving approx. 3,600 MWh of steam per year for heating the water.



Sebastian Loewenberg, General Manager

Wolfgang Haase,

Manager Environment

UPM Plattling

Responsibility figures 2019

Water

Spezific load in treated effluent (kg per tonne of paper)

AOX reduced by



COD reduced by



in the period 2013-2019



Raw materials



In 2019, the proportion of certified fibres used for papermaking stood at

73%



Recovered paper

In 2019

about **5.7** billion

paper labels removed from bottles were recycled to produce high quality fibre raw material

Waste



All of the Plattling mill's production waste is

100%

recycled as material or incinerated with energy recovery



Specific natural gas consumption of the coating machines reduced by

7.3%

in the period 2013-2019

Distridt heating from excess heat



supplied to asparagus growers to enable earlier harvesting



Employement

There are currently



at the site

Safety

In 2019 the employees made

1,115

safety and environmental observations

Health





participated in preventive health check-ups since 2013

In autumn



apples, bananas and oranges were offered free of charge as a "vitamin injection" to the employees



Community

UPM's sponsorship supports around

100

active member of the sports club (former mill sports club)





Energy generation is the primary source of airborne emissions from the paper mills. Through improving the energy efficiency of our production lines and using nothing but natural gas as a fuel we were able to maintain emissions on an acceptable level over the years.

In April of 2010, a new gas and steam turbine power plant servicing the whole site went on line, replacing eight gas fired steam boilers which are partly used as a backup source in the event of a power plant failure. Thanks to the efficiency of combined power and steam generation, the new power plant is much more efficient (by up to 85% in terms of primary energy use) than steam-only boilers.

The operative start of the cutsize line having substantially changed the range

of paper grades made on PM 10, in this way considerably influencing the mill's environmentally relevant parameters, 2013 was set as the reference year for reporting energy-related emissions. With the closure of PM 10, 2020 will probably be set as the new reference year.

The emissions from the power plant were on a similar level as in 2018. As in 2018, the power plant also in 2019 generated the maximum possible amount of power. The higher steam quantity required for this was essentially generated by the auxiliary firing downstream of the gas turbine. The auxiliary firing system can typically cause higher CO and NO_x emissions, which explains the continuing high level of CO.

The emissions of the steam boiler plants are on an acceptable level for CO and

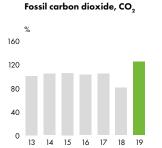
 NO_{χ} . Due to the power plant's stable operation, the steam boilers were only rarely used.

In 2019, the specific emission loads of the power generation plants were higher than in the previous year. The paper production-independent energy demand of auxiliary plants such as the deinking plant, waste water treatment plant, hall heating, etc. had to be allocated to lower production volumes due to the closure of PM10. PM1 also had a very poor operating rate in 2019. Frequent start-up and shut-down procedures also lead to higher specific emission values.

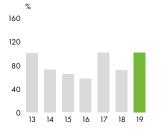
EMISSIONS FROM THE POWER PLANT

	Limit value (mg/Nm³)	Mean values measured (mg/Nm³)							
		2012	2013	2014	2015	2016	2017	2018	2019
CO	100	11.0	7.2	3.6	2.9	3.1	7.1	6.6	6.5
NO _x	50 (variable depending on supplementary firing)	26.0	24.8	23.2	27.8	31.3	44.4	40.4	28.7

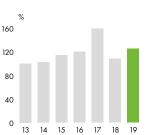
EMISSI	EMISSIONS FROM THE STEAM BOILER								
	Limit value (mg/Nm³)	Mean vo	alues measure	ed (mg/Nm³)					
		2012	2013	2014	2015	2016	2017	2018	2019
CO	50	2.4	2.5	2.7	4.3	4.3	4.8	3.4	2.7
NO _x	100	84.0	77.6	71.6	71.6	72.4	75.5	84.7	78.6



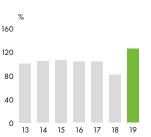
Carbon monoxide, CO



Nitrogen oxide, NO_x



Sulphur dioxide, SO₂



All graphs show the specific emissions per tonne of paper in comparison with 2013





UPM Plattling drew more than 99% of the water required for the production process from the Isar, with the remaining 1% to cover temporary demand peaks coming from a well on the mill premises. In a modern process water treatment plant, particulate contaminants are removed from the river water and water hardness is reduced.

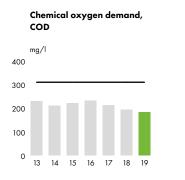
The process water is first used for cooling and then for the paper production process.

The specific waste water volume increased significantly compared to the previous year. This is mainly due to the LWC line. The SC line with PM 1 has been operating at a very good level for many years. The main reason is the closure of PM 10, which had operated in a joint water circuit with PM 11. As long as the systems have not yet been adapted, e.g. with a connection between PM 11 and PM 1, which has yet to be realised, the LWC paper line operating individually will negatively affect the specific fresh and waste water volumes.

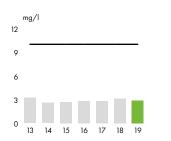
The mill's waste water treatment plant for the LWC and SC production lines operated mostly trouble free throughout the whole year. Due to an error in the online measurement, the nutrients were erroneously lowered, which led to a drop in the efficiency of ARA. The effluent values for BOD_5 and CODwere close to the permit limit values. A malfunction of the newly installed biocide plant PM 1 resulted in an excessive biocide dosage. However, this had no effect on the cleaning performance of the wwtp. In August 2018, Annex 28 to the Waste Water Ordinance was amended. It sets out the requirements for the discharge of papermaking effluents. The parameters TOC (total organic carbon) and TNb (total bound nitrogen) were newly added and are now mandatory. It is expected that the water permit will be adjusted in mid 2020, also in view of the reduced production capacity. The new parameters have already for years been measured online in the effluent from the treatment plant in preparation for the amendment of the law.

Because of the lower inflow loads after the closure of PM10 and the resulting free capacity of wwtp, the average effluent concentrations could be all reduced.

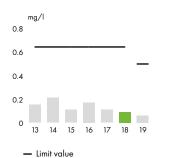
Emissions from the joint effluent treatment plant

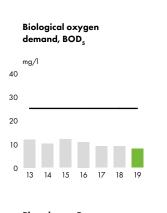


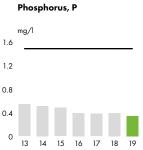
Nitrogen, N (inorganic)

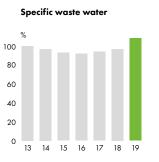


Adsorbable organic halogen compounds, AOX









Developmet of waste water volume per tonne of paper in comparison with 2013

Waste |||

In keeping with the concept of circular economy, the majority of production waste is recycled locally. Hazardous wastes are forwarded exclusively to specialised waste management com-panies to be disposed of in accordance with legal requirements. The specific volume of total waste including by-products was in 2019 1% higher and therefore nearly on the same level of the previous year.

There was an increase in specific fibre residues due to the new calculation basis after the closure of PM10 production. The amount of broken wood was more than halved. The rejects from recovered paper processing were halved due to improvements in raw material input. Hazardous waste increased by 44%. In 2019 there was an increase in disposal of sand traps content, especially in the waste water system of the recovered paper plant. In 2019, the recycling rate for all residual materials was 99.95%, which is the very high level that has been maintained for years. No process waste went to landfill.

Societal responsibility

Safety first!

The Plattling site has been working for many years to improve occupational safety. The safety campaign launched by UPM in 2012, involving the implementation of safety standards, resulted in measures being taken that go beyond statutory requirements. They include safety walks by managers, targeted safety discussions and the documentation of safety observations by all staff. The aim is to raise the employees' awareness of unsafe conditions and activities. An extensive exchange of experience with other UPM mills on accidents and high-risk incidents as well as cross-site occupational safety audits make the knowledge and findings of others available to us to eliminate potential risks from the outset.

Looking back, the accident figures at the site have worsened in comparison with the previous year. The number of lost time accidents increased by 50% from 6 to 9. These were only minor accidents.

We are still working intensively to completely prevent all serious accidents and highlight occupational safety as a management task.

Preventive healthcare

We spend a large part of our lives at work, where the workplace conditions can impact our health either positively or negatively. Healthy, resilient and motivated employees are prerequisite for the success and competitiveness of our mills. This is why we want to create working conditions that are conductive to our employees' health, raise their health consciousness and at the same time strengthen and maintain their satisfaction and motivation.

To this end, we implemented a corporate health management programme with a large number of offerings:

- Information event of the company health insurance about diabetes
- Psychical stress factors at the workplace were identified and risk assessments carried out
- Events took place at regular intervals in the mill's canteen to promote a healthy diet and light meals
- Training for in-house paramedics and first aid courses

Additionally, increasing emphasis is being placed on prevention and health promotion. UPM offers its employees various preventive health checkups:

- Skin and colon cancer screening, which were well received by the employees
- Diabetes and blood pressure measurements by the in-house paramedics

Plattling's Safety Day in April of 2019 was attended by 139 participants. The Plattling traffic safety authority was again on site with 2 simulators for measuring reaction time and braking distance. Navigating a course wearing "drunk goggles", the participants were able to experience just how impaired the vision of a drunk person is. Under the motto "Don't give stress a chance", the Viennese Test System was used to determine the individual reaction strategy people develop under psychological stress. Dangers of being pulled in were demonstrated using the so-called conveyor belt model for illustration. Using a so-called jump scale model, it was possible to demonstrate the weight that acts on your "bones" when you jump off a forklift, loader or ladder the wrong way. The Safety Day offers a lot of information that can be used for achieving the "accident-free mill".

Engaging with communities

Building and maintaining good relations with local communities close to our operations is essential for us and our business success. Through our societal engagement activities, for instance in the form of sponsorships and donations, we encourage these communities to develop positively and vibrantly.





We build a sustainable, innovation-driven future by sharing our expertise and assets for causes we care about. The focus areas of the UPM Share and Care Programme are: Reading & learning, responsible water use and boosting bio-innovations.

Depending on the project in question, there are various forms of support by UPM, for instance, financial assistance, membership in local organisations, product or in-kind donations or employee volunteering. Our sponsoring activities on the local level aim towards long-term involvement in the communities near our sites.

UPM Plattling gives financial support to the former mill sports team, which is now operating as an independent sports club under the name of MDSC. For employees' children up to 10 years old, there is a visit by Father Christmas with presents and a cultural programme organised by the MDSC.

Cooperation with schools and vocational training

The Plattling site currently offers vocational training as:

- Paper technologist
- Machine and equipment operator
- Warehousing logistics expert
- Electronics technicians for industrial systems
- Electronics technicians for
- automation technologyIndustrial mechanic

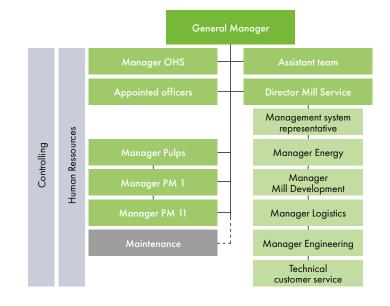


Secondary schools, colleges and universities regularly visit the mill. School leavers and graduates are addressed at technical symposiums or events held by the paper industry association. In Plattling, like at many other sites, UPM offers young people the opportunity to enter the world of papermaking through summer jobs, internships, traineeships and bachelor and master theses. Our aim is to build and develop networks to create a sustainable link between schools and industry.

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 and water protection, fire protection, waste, radiation and laser protection, internal rail operations and hazardous goods. In addition, there are designated representatives responsible for the integrated management system (quality, environment, energy and occupational safety).

Emergency plans have been defined for emergencies of all kinds, such as fire, environmental incidents and industrial accidents. From alerting to immediate action and follow-up, there are guidelines to minimize the effects of an emergency as far as possible and prevent similar events in the future. For emergencies of a larger scale, there is an emergency staff who decides on any further action to be taken and provides follow-up.



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.

		Rhein Papier GmbH		
		2017	2018	2019
Production capacity	Up to 3 (3 pape	Up to 714.000 t (3 resp. 2 paper machines)		
Raw materials and additives	Recovered paper Roundwood Chemical pulp Pigments Process chemicals Consumables		PM Corporate Envir nsibility Statement fc	
Energy	Fossil fuels Purchased power		100% PM Corporate Envir nsibility Statement fo	
Emissions to air	Carbon dioxide, CO ₂ (fossil) Nitrogen oxide, NO _x Carbon monoxide, CO Sulpur dioxide, SO ₂ Particulates	435,396 t 204.7 t 44.2 t 4.3 t 0.27 t	332,003 t 136.7 t 30.4 t 3.3 t 0.20 t	410,970 t 127.1 t 34.8 t 4.1 t 0.25 t
Water intake	Process water Cooling water	10,339,569 m³ 0 m³	10,073,965 m ³ 0 m ³	9,143,873 m ³ 0 m ³
Discharges to water	Effluent volume Chemical oxygen demand, COD Biological oxygen demand, BOD ₅ Phosphorus, P (total) Nitrogen, N (inorganic) Adsorbable organic halogen compounds, AOX	9,131,956 m ³ 1,933 t 71.9 t 3.2 t 24.9 t 1.0 t	9,244,969 m ³ 1,737 t 61.1 t 3.3 t 28.3 t 0.85 t	8,297,831 m ³ 1,537 t 66.9 t 2.8 t 23.4 t 0.53 t
Side-products and waste ¹⁾	Total waste volume of which Side-products – Bark and wood residues Waste for recovery – Deinking sludge – Fibre residues – Biosludge – Wood and bark waste – Paper recovery rejects – Scrap metal – Construction waste – Other waste Waste for disposal Hazardous waste	2)	210,229 t 132,617 t 26,659 t 17,536 t 28,212 t 142 t 1,460 t 482 t 124 t 2,897 t 0 t 100 t 99,98%	170,655 t 101,405 t 23,917 t 17,729 t 24,470 t 190 t 763 t 406 t 31 t 1,601 t 0 t 143 t 99,95%
Size of mill area	Recovery rate (total) Sealed area Nature-oriented area on site Total area	32.3 ha 20.0 ha 52.3 ha	32.3 ha 20.0 ha 52.3 ha	32.3 ha 20.0 ha 52.3 ha

incl.moisture
 Reporting of waste data was changed in 2018.



Performance against targets in 2019

Unless otherwise stated, the reference year was 2018

TARGETS	TARGET ACHIEVED?	COMMENTS
1 Water Reduce specific fresh water consumption on LWC line (PM 10 and PM 11) by 0.5 l/kg	No	Due to the closure of PM10 in the middle of the year the specific fresh water demand of the remaining PM11 has been process related increased for 2,1 I/kg
2 Water and Air Comply with "CleanRun" provisions (0 category 3–5 deviations)	Yes	No exceedances at wwtp and power plant
3 Raw materials Reduce material losses on LWC line (PM10 and PM11) by 10%	No	Due to the closure of PM10 and paper grade switch to the remaining PM11 the fiber losses have been increased process related for 30%
 4 Chemical use – Reduce share of synthetic binders by 2% – Run trials to subsitute soda lye with ash by products 	No No	 Only reduction of 1% could be realized. Trials could not be carried out. Target will be continued in 2020
5 Energy Reduce energy consumption by 5,000 MWh/a	Yes	The target achievement was even exceeded with a reduction of 20,849 MWh/a

Targets for 2020

Unless otherwise stated, the reference year is 2019

TARGETS AND MEASURES	DEADLINE	DEPARTMENT RESPONSIBLE
1 Water After closure of PM10 adjustment of spec. fresh water demand of LWC line onto level of 2018 with 15,6 l/kg	12/2021	Production (Investments needed)
2 Water and Air Comply with "CleanRun" provisions (0 category 3–5 deviations)	12/2020	Production, Environmental management
3 Raw materials and chemicals		
 Reduction of chemical pulp at PM1 for 1% (points) 	12/2020	Production
 Reduction of flocculation aid at bio sludge press for 5% 	12/2020	wwtp, Mill Development
– Trials for substitution of caustic soda with ash side products	12/2020	Paper recovery plant, Mill Development
4 Residues Increasing of dry solid content of bio sludge at least on 1% (points)	12/2020	wwtp, Mill Development
5 Energy Reduce energy consumption by 4,000 MWh/a	12/2020	Groundwood Pulping, Production, Energy Generation



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 Plattling, Rhein Papier GmbH, in 94447 Plattling, Nicolausstr. 7, Germany, as indicated in the updated Environmental Statement 2019 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, as amended by Commission Regulation (EU) 2017/1505, 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 2019 of UPM Plattling, Rhein Papier GmbH, reflect a reliable, credible and correct image of all the activities of UPM Plattling, Rhein Papier GmbH, within the scope mentioned in the updated Environmental Statement 2019. 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.

Plattling, 19. June 2020

Astrid Günther

Astria Gunner 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.**

UPM Plattling

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