UPM BIOFORE
BEYOND FOSSILS

UPM Plattling

ENVIRONMENTAL AND SOCIETAL RESPONSIBILITY 2018

UPM Plattling

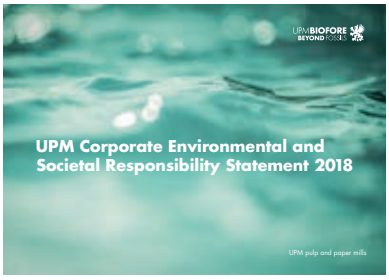
UPM Plattling is located north of Plattling, a small town at the foot of the Bavarian Forest, where the Isar flows into the Danube. With a workforce of a little over 600 people and three paper machines, UPM Plattling produces up to 785,000 tonnes annually of uncoated (SC) and coated (LWC) supercalendered 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 companies operating at the site, MD Papier GmbH and Rhein Papier GmbH. Production and administration of the two mills being closely interlinked, so they are reporting jointly on their environmental performance in 2018, too. 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 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 mills' own combined heat and power plants running on natural gas. The remainder of the power is supplied via the public grid.

Production capacity	785,000 tonnes/year of graphic paper
Personnel	609 (total heads as at 31 December 2018)
Products	Magazine Papers (SC and LWC) UPM Max UPM Ultra UPM Sol UPM Cat UPM Cote UPM Nova UPM Smart UPM Star
Side-products	Bark, windfalls and off-cuts
Certificates	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 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

FSC www.fsc.org FSC® C014719
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EU Ecolabel www.ecolabel.eu
EU Ecolabel : FI/011/001

Review of year 2018

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. In 2010, the site's energy management system was also certified. Every year, we set ourselves ambitious new environmental goals.

UPM Clean Run Campaign/ Compliance
Also in 2018, the Group-wide "Clean Run" campaign was one of our focus areas. It 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.

In September, the CO (carbon monoxide) limit was exceeded due to an incorrect burner setting on hot water boiler no. 5. Measures to remedy the deficiency and avoid similar incidents in the future were agreed with the responsible authority.

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

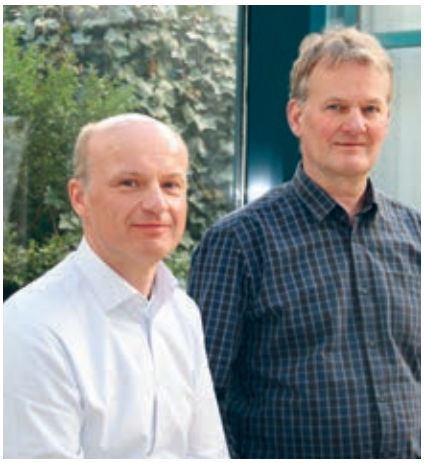
Stakeholder feedback
In January, we received a complaint about noise from the neighbourhood. The nuisance was due to logs from the debarking process falling on the interim storage area. The fall height reduction system minimising noise was defective during the period in question. The damage was repaired immediately.

In August, there was a complaint about odour nuisance from a local resident living near the main mill gate. It was due to unauthorised parking of trucks that had loaded bio-sludge for recycling. The forwarding agent was asked to instruct the drivers accordingly.

Decisions by authorities
The extension of the timber yard at MD Papier was approved in order for us to be able to store the large quantities of logs resulting from windthrow in the area. The rainwater drainage basin was renovated and improved to ensure proper infiltration in the future.

Environmental performance
As water is an essential element in the production of paper and is used in large quantities by the papermaking industry, our focus is on using water in such a way as to protect resources and waters.

The mill's joint effluent treatment for the LWC and SC production lines ran smoothly all year round. The officially approved limit values were complied with. The measures taken to reduce the amount of wastewater from the coating process are clearly visible in the effluent treatment plant. An improvement in comparison with previous years can be seen in the in the degradation performance of the LWC's effluent treatment and there are significantly lower material losses. The biofilters of the AOP plant (3rd treatment stage with ozone) were cleaned and achieved a very good elimination performance. Above all, we were able to slightly further reduce the AOX concentration in the effluent. The newly implemented gentle wood pulp bleaching method resulted in a lower COD load in the inflow from the SC line, resulting in a lower COD load in the effluent discharged into the Isar and a lower amount of bio sludge. The third treatment stages are therefore only used extremely rarely, which means that the effluent treatment plant is being operated in a very resource-efficient way. The specific amounts of fresh and wastewater were slightly on the high side. This was due to the very hot summer and an interruption in the operation of the PM 1 during the 4-month power plant shutdown. Energy savings were achieved by using a second innovative, highly efficient grindstone. By using an alternative type of chemical pulp, less grinding energy had to be used. Despite these successes, however, we were not quite able to achieve our energy savings target.



Mika Kämpe, General Manager

Wolfgang Haase, Manager Environment

UPM Plattling

Responsibility figures 2018

Employment

750 people

work at the site for UPM and various partner companies

There are currently

22 apprentices

at the site

Water

Specific effluent volume (m^3 per tonne of paper) reduced by

3.4%

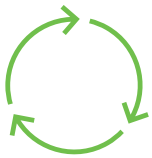
in the period 2013–2018

Specific COD load in treated effluent (kg of COD per tonne of paper) reduced by

18%

in the period 2013–2018

Recovered paper



In 2018

about 6.5 billion

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

Raw materials

In 2018, the proportion of certified fibres used for papermaking stood at

66%

Community

806

employees and their partners attended the mill's 35th anniversary celebrations

UPM's sponsorship supports around

100

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

Energy

Specific energy consumption
(kWh per tonne of paper) reduced by

5%

in the period 2013–2018

District heating from excess heat

16,192 MWh

supplied to asparagus growers to
enable earlier harvesting

Waste

All of the Plattling mill's production waste is

100%

recycled as material or incinerated
with energy recovery

The volume of hazardous wastes
was reduced by

31%

in comparison with 2017

Health

Increase in the number of participants
in preventive health checkups by

111%

in the period 2013–2018

283 employees

attended the "Heart Days" on the subject
of heart health (November 2018)

Workplace safety

Reduction of lost time accidents by

50%

(at the beginning of the workplace safety
campaign in 2012: 12, in 2018: 6)

In 2018 we spent

281,000 EUR

on workplace safety

Air

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.

The emissions from the power plant were on a similar level as in 2017. As in 2017, the power plant also in 2018 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. As a result, the auxiliary firing caused higher CO and NO_x emissions. The slight improvement in emissions is due to the power plant's stable operation with only few start-up operations.

The changes in emissions from the steam boiler installations are due to the burner settings. Due to the power plant standstill in 2018, the steam boiler plants had long operating times compared to previous years, allowing for the burners to be adjusted for optimum combustion. Thanks to the good burner settings, CO emissions could be reduced, which in turn led to slightly higher NO_x emissions.

The significantly lower emission loads are due to the 4-month shutdown of the power plant following a major technical failure. During this period, 100% of the electricity required was supplied from the public grid, so there were no emissions from energy generation at the site. The process steam was generated by the back-up boilers during this period.

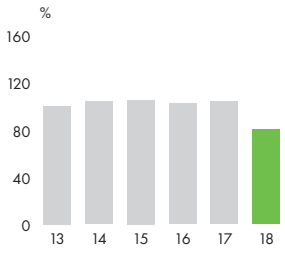
EMISSIONS FROM THE POWER PLANT

	Limit value (mg/Nm³)	Mean values measured (mg/Nm³)						
		2012	2013	2014	2015	2016	2017	**2018**
CO	100	11.0	7.2	3.6	2.9	3.1	7.1	**6.6**
NO_x	50 (variable depending on supplementary firing)	26.0	24.8	23.2	27.8	31.3	44.4	**40.4**

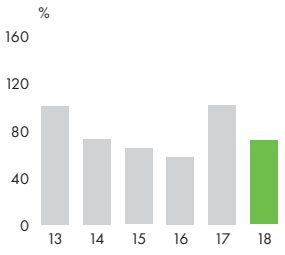
EMISSIONS FROM THE STEAM BOILER

	Limit value (mg/Nm³)	Mean values measured (mg/Nm³)						
		2012	2013	2014	2015	2016	2017	**2018**
CO	50	2.4	2.5	2.7	4.3	4.3	4.8	**3.4**
NO_x	100	84.0	77.6	71.6	71.6	72.4	75.5	**84.7**

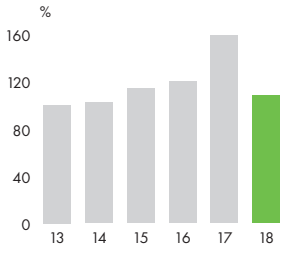
Fossil carbon dioxide, CO_2



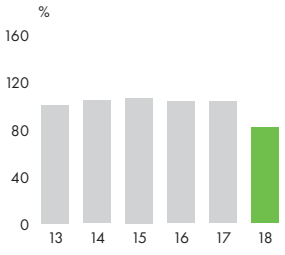
Carbon monoxide, CO



Nitrogen oxide, NO_x



Sulphur dioxide, SO_2



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

Water

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.

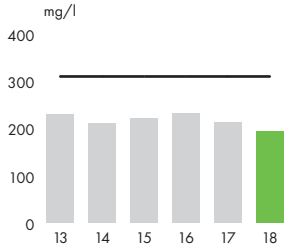
The process water is first used for cooling and then for the paper production process. Our specific water consumption was slightly higher than in the previous year. The reason for this is the hot summer, which led to an increased need for cooling water. Further reasons included several weeks of stop and go operation of the PM 1 following the power plant failure and the associated inefficient use of process water.

The mill's joint effluent treatment plant for the LWC and SC production lines operated mostly trouble free throughout the whole year. In July and August, there was a short term drop in the treatment performance of the biological stage of the LWC effluent treatment line, the causes of which could not be completely clarified. The limit values were not exceeded at any time. In general, the degradation performance of the LWC line has improved due to improved retention of coating colour-containing wastewater, which can impair the biological stages' treatment performance.

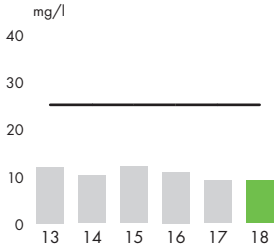
The COD outflow concentration has fallen for another year in a row. The substitution of sodium hydroxide solution in groundwood bleaching by magnesium hydroxide led to a lower inflowing COD load into the treatment plant and thus to a better cleaning result. The AOX outflow concentration has also decreased. N and P are at a similar level, with fluctuations within a certain range. 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. These parameters have already for years been measured online in the effluent from the treatment plant in preparation for the amendment of the law.

Emissions from the joint effluent treatment plant

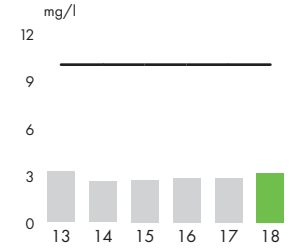
Chemical oxygen demand, COD



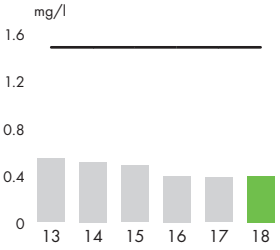
Biological oxygen demand, BOD_5



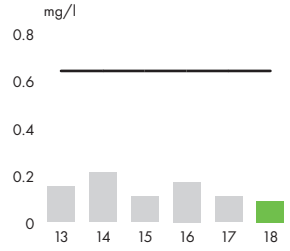
Nitrogen, N (inorganic)



Phosphorus, P

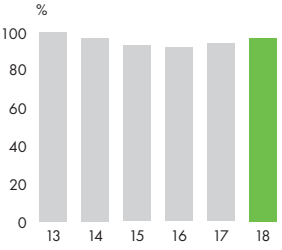


Adsorbable organic halogen compounds, AOX



— Limit value

Specific waste water



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 companies to be disposed of in accordance with legal requirements. The specific volume of waste in 2018 was again 5% lower than in the previous year. A major factor in this was the significantly lower biosludge quantity resulting from the decreased COD concentration in the inflow to the treatment plant, as the biological elimination of COD is directly proportional to the volume of biosludge.

Hazardous wastes decreased by about 30%. The overall recovery rate in 2018 was 98.98%. No processing wastes went to landfill.

Social 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.

In 2018, the implementation of the six so-called "life saving standards" on the subjects of "Working at height", "Risk assessments", "Permit to work", "Confined spaces", "Lock-out/Tag-out" and "Mobile equipment and cranes" continued to be driven forward.

Looking back, the accident figures at the site have worsened in comparison with the previous year. The number of lost time accidents doubled from 3 to 6, luckily all of them minor. 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:
- There were seminars with an external coach on "Escaping the stress trap" and "Emotional health"
- 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

Two "Heart Days" took place where our employees gained interesting insights by means of a walk-through heart model and were given information about heart health.

The main attractions at the annual Safety Day with over 200 participants included the following:
- Finding out what stress type you are (Viennese test system)
- Walking around in a GERT age simulation suit
- Practical fire fighting exercises
- Reaction and braking distance simulation
- An accident simulator where the visitors could try to get out of an overturned car – a very impressive experience!

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.

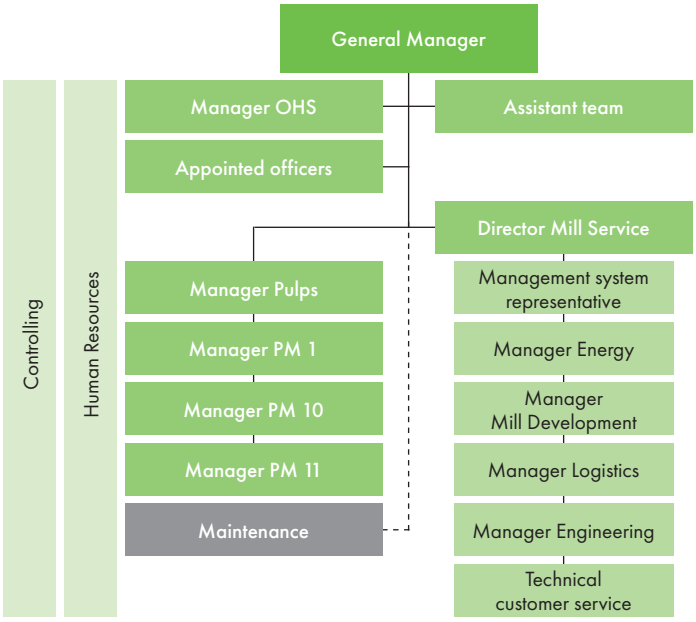
Cooperation with schools and vocational training
The Plattling site currently offers vocational training as:
- Paper technologist
- Machine and equipment operator
- Warehousing logistics expert
- Electronics technicians for industrial systems
- Industrial mechanic

In July, a vocational training information day was held, where interested students and parents were able to gather information through a mill visit and discussions with apprentices and instructors. 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 minimise 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 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.

		MD Papier GmbH (LWC)	Rhein Papier GmbH (SC)
Production capacity	Paper	Up to 785,000 t (3 paper machines)	
Raw materials and additives	Recovered paper Roundwood Chemical pulp Pigments Process chemicals Consumables	See UPM Corporate Environmental and Societal Responsibility Statement for more information	
Energy	Fossil fuels Purchased power	100% See UPM Corporate Environmental and Societal Responsibility Statement for more information	
Emissions to air	Carbon dioxide, CO_2 (fossil) Nitrogen oxide, NO_X Carbon monoxide, CO Sulpur dioxide, SO_2 Particulates	175,598 t 73.9 t 18.6 t 1.8 t 0.11 t	156,405 t 62.8 t 11.8 t 1.5 t 0.09 t
Water intake	Process water Cooling water	5,835,913 m^3 0 m^3	4,238,052 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	9,244,969 m^3 1,737 t 61.1 t 3.3 t 28.3 t 0.85 t	
Side-products and waste*	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 Recovery rate (total)	86,257 t 36,943 t 26,659 t 5,443 t 12,987 t 94 t 1,460 t 305 t 106 t 2,201 t 0 t 58 t 99.98%	123,972 t 95,674 t 0 t 12,092 t 15,225 t 48 t 0 t 176 t 18 t 696 t 0 t 43 t 99.99%
Size of mill area	Built on or sealed	17.6 ha	14.7 ha

* incl. moisture

Performance against targets in 2018

Unless otherwise stated, the reference year was 2017.

TARGETS	TARGET ACHIEVED?	COMMENTS
1 Water Reduce specific fresh water consumption on LWC line (PM10 and PM11) by 0.4 l/kg	No	Fresh water consumption could not be reduced
2 Water and air Comply with "CleanRun" provisions (0 category 3–5 deviations)	No	CO limit on a hot water boiler exceeded in one instance (category 3)
3 Raw materials Reduce material losses on LWC line (PM10 and PM11) by 10%	Yes	Material losses reduced by 12%
4 Chemical use Reduce COD load of effluents from bleaching groundwood pulp by 10% in comparison with 2016	Partly	Target narrowly missed in spite of significant reduction by 7%
5 Energy Reduce energy consumption by 5,000 MWh/a	Partly	Energy consumption reduced by only 3,744 MWh/annum

Current targets

Unless otherwise stated, the reference year is 2018.

TARGETS AND MEASURES	DEADLINE	DEPARTMENT RESPONSIBLE
1 Water Reduce specific fresh water consumption on LWC line (PM10 and PM11) by 0.5 l/kg	12/2020	Production
2 Water and air Comply with "CleanRun" provisions (0 category 3–5 deviations)	12/2019	Production, Environmental management
3 Raw materials Reduce material losses on LWC line (PM10 and PM11) by 10%	12/2020	Production
4 Chemical use – Reduce share of synthetic binders by 2% – Run trials to subsitute soda lye with ash by products	12/2019	Mill Development Paper recovery plant, Mill Development
5 Energy Reduce energy consumption by 5,000 MWh/a	12/2019	Groundwood Pulping, Production, Energy Generation

EMAS
Verified environmental management
REG.NO. FI - 000058

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 (MD Papier GmbH and Rhein Papier GmbH) in 94447 Plattling, Nicolausstrasse 7, Germany, as indicated in the Environmental 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 2018 of UPM Plattling (MD Papier GmbH and Rhein Papier GmbH) reflect a reliable, credible and correct image of all the activities of UPM Plattling (MD Papier GmbH and Rhein Papier GmbH) within the scope mentioned in the Environmental Statement 2018.

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, 06.06.2019

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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