



The Biofore Company

UPM

UPM Plattling

Environmental and Societal Responsibility 2017



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 some 590 people and three paper machines, UPM Plattling produces up to 765,000 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 2017 too. The Plattling site was founded in the open countryside in 1982. It was originally comprised of the PM 10 paper machine 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 region. 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	765.000 t/a graphic papers
Personnel	Approx. 590 (full time employees, including apprentices) as at 31.12.2017
Products	Magazine papers (SC and LWC) UPM Max UPM Ultra UPM Sol UPM Cat UPM Cote UPM Nova UPM Smart UPM Star
By-products	Bark, windfalls and off-cuts
Certificates	EMAS – EU Eco-Management and Audit Scheme ISO 14001 – Environmental Management System ISO 9001 – Quality Management System ISO 50001 – Energy Management System OHSAS 18001 – Occupational Health and Safety 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 Certificate Finder (available at www.upm.com/responsibility)
Environmental labels	EU Ecolabel (EU Flower)



UPM Plattling Environmental and Societal Responsibility 2017 is a supplement to the Corporate Environmental Statement of UPM's pulp and paper mills (available at www.upm.com) and provides mill-specific environmental performance data and trends for the year 2017. The annually updated mill supplements and the UPM Corporate Environmental Statement together form the joint EMAS Statement of UPM Corporation. The next Corporate Environmental Statement and also this supplement will be published in 2019.

UPM leads the forest-based bioindustry into a sustainable, innovation-driven, and exciting future across six business areas: UPM Biorefining, UPM Energy, UPM Raflatac, UPM Specialty Papers, UPM Paper ENA and UPM Plywood. Our products are made of renewable raw materials and are recyclable. We serve our customers worldwide. The group employs around 19,100 people and its annual sales are approximately EUR 10 billion. UPM shares are listed on NASDAQ OMX Helsinki. UPM – The Biofore Company – www.upm.com



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For PEFC products visit www.pefc.org



EU Ecolabel : FI/011/001

Review of the year 2017

Production and environment

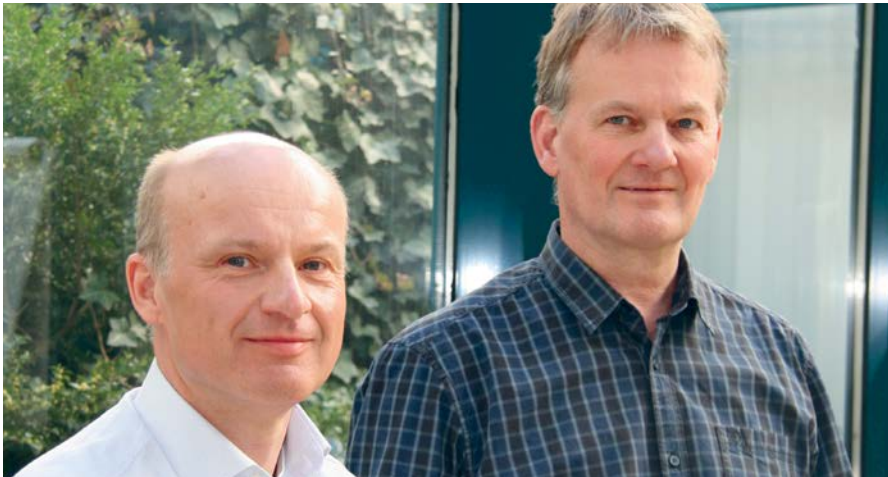
UPM Plattling has reported its environmental performance since as far back as 2000, when the site successfully gained certification to ISO 14001 and the EU Eco-Management and Audit Scheme (EMAS). As a company of the Finnish UPM – the Biofore Company, we want to demonstrate to our customers, suppliers, 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.

The Group-wide "Clean Run" project was one of our focus areas in 2017. The campaign is aimed at ensuring environmentally friendly production without environmentally relevant incidents. The mills are audited with regard to their environmental performance and assisted in their further development.

In the first quarter of the year, there were two complaints from the neighbourhood about noise nuisance. In one case, it was possible to quickly identify the source of noise and remove it. The causes were analysed and precautions were taken to prevent further incidents.

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. Nevertheless, the statutory provisions regarding the discharge of cleaned effluents into the Isar could not be met in two instances. Technical and organisational improvements were made to ensure the safe operation of the treatment plant.

The innovative third treatment stage installed in the LWC effluent treatment plant in 2013, which consists of a two-stage ozone treatment with subsequent biofiltration, was successfully further improved in 2017 to optimise the elimination of organic substances from the wastewater.



Mika Kämpe,
General Manager

Wolfgang Haase,
Manager Environment

Responsibility figures 2017

Energy

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

5%

in the period 2013–2017

District heating from excess heat supplied to asparagus growers

15.5 GWh

to enable earlier harvesting

Health



Increase in the number of participants in preventive health check-ups by

83%

in the period 2013–2017

243 employees

attended the occupational health and safety day (March 2017)

Waste



All of the Plattling mill's production waste is

100%

materially recycled or incinerated with energy recovery

Safety



Reduction of lost time accidents by

75%

(at the beginning of the workplace safety campaign: 12, in 2017: 3)

In 2017 the employees made

917

safety walks

Employment



730 people

work at the site for UPM and various partner companies

There are currently

22 apprentices

at the site

Community



The vocational training information day was attended by

30 students

(September 2017)

UPM sponsors around

100

active members of the former mill sports club

Certified fiber



The proportion of certified fibres used for papermaking stood at

64%

In 2017

18,500 t

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

Water



Specific effluent volume (m³ per tonne of paper) reduced by

6%

in the period 2013–2017

Specific AOX load in treated effluent (t of AOX per tonne of paper) reduced by

33%

in the period 2013–2017



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.

While the emissions from the steam boilers remained on a similar level as in previous years, there was a significant rise in CO and NO_x emissions from the power plant. This is due to the fact that the plant generated some 14% more power than in 2016. The additional power was mainly generated by stepping up the operation of the steam turbine. 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.

There were no deviations from the statutory permit limits.

UPM Plattling has set itself the goal to further reduce specific CO₂ emissions by efficient energy use. To this effect several measures were implemented in 2017. For instance, measures were taken on the paper machines' wet sections and the dry stock content of coating colours was increased.

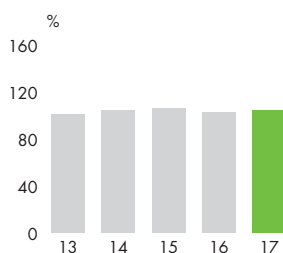
EMISSIONS FROM THE POWER PLANT

Limit value (mg/Nm ³)		Mean values measured (mg/Nm ³)					
		2012	2013	2014	2015	2016	2017
CO	100	11.0	7.2	3.6	2.9	3.1	7.1
NO _x	50 (variable depending on supplementary firing)	26.0	24.8	23.2	27.8	31.3	44.4

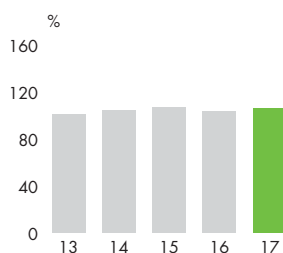
EMISSIONS FROM THE STEAM BOILER

Limit value (mg/Nm ³)		Mean values measured (mg/Nm ³)					
		2012	2013	2014	2015	2016	2017
CO	50	2.4	2.5	2.7	4.3	4.3	4.8
NO _x	100	84.0	77.6	71.6	71.6	72.4	75.5

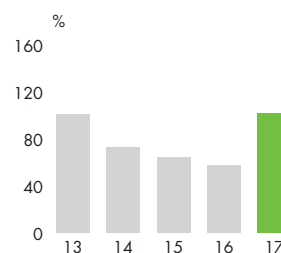
Fossil carbon dioxide, CO₂



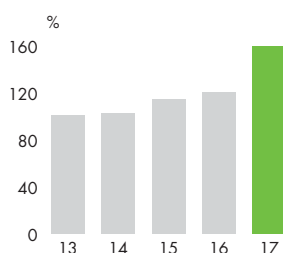
Dust



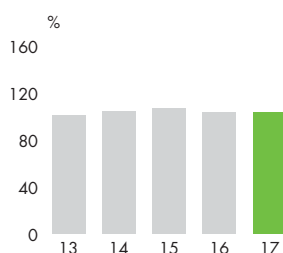
Carbon monoxide, CO



Nitrogen oxides, NO_x



Sulphur dioxide, SO₂



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 is on the same level as in the previous year. But in comparison with the level 5 years ago it is 5% down.

The mill's joint effluent treatment plant for the LWC and SC production lines

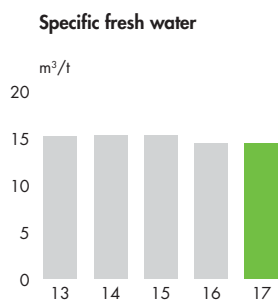
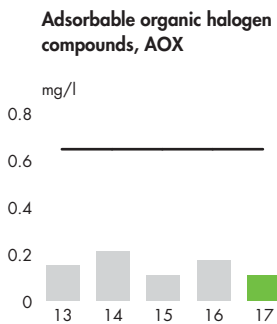
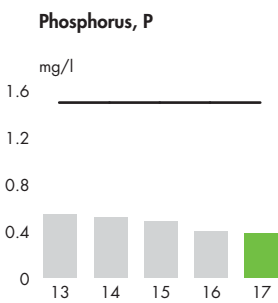
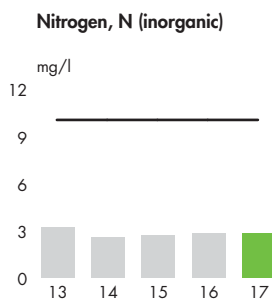
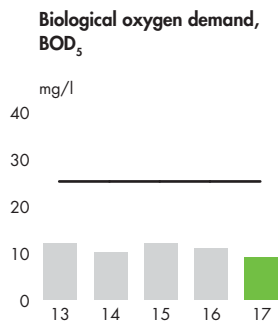
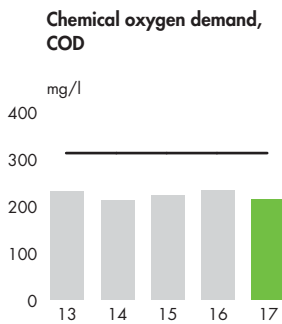
operated mostly trouble free throughout the whole year. However, following a technical failure, there was a short-term exceedance of the COD and BOD₅ in the outflow from the treatment plant. To solve the problem, a technical solution in the form of redundant equipment parts was installed. During a peak load period in the treatment plant, the BOD₅ outflow limit was exceeded in spite of good COD elimination. This parameter is difficult to monitor as the result takes 5 days to come through.

The COD outflow concentration was slightly lower than last year following an optimisation of the bleaching chemicals used for mechanical pulp

bleaching. Adjusting the operation of the chemical-physical third treatment stage also contributed to this.

Following technical changes, in the same way as for reporting energy-related emissions, 2013 was set as the reference year for water emissions.

Emissions from the joint effluent treatment plant



— Limit value

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 was 5% lower than in the previous year. Hazardous wastes increased by about 20%. This is due to major hydraulic oil changes that must be carried out every few years. The overall recovery rate in 2017 was 100%. No 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.

In 2017, out of the above-mentioned standards, 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" were particularly highlighted and dealt with in depth.

Looking back, the accident figures at the site have significantly improved. For instance, the number of lost time accidents sank from 12 in 2012, when the safety campaign started, to three accidents in 2017. However, we have by far not reached our goal. We are still working intensively to completely prevent, in particular, all serious accidents. To this end, we are planning to standardize high-risk activities, conduct more in-depth risk assessments, raise the awareness for the risks associated with working at height 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 conducive 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:

- At the occupational health and safety day, people were shown what forces act on your body when jumping from 50 cm height. They had an opportunity for measuring stress using the Viennese test system and learned how to exercise with a Thera-Band
- Events took place at regular intervals in the mill's canteen to promote a healthy diet and light meals
- The employees were given stroke information
- 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 check-ups:

- Skin and colon cancer screening, which were well received by the employees
- Two health courses for women where the participants learned how to contribute to breast cancer prevention by performing self-exams with the MammaCare method
- Diabetes and blood pressure measurements by the in-house paramedics

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. We aim towards long-term involvement in order to be a reliable partner.

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.

In addition to providing financial support to Plattling's voluntary fire brigade, UPM Plattling is now also taking a hands-on approach. The mill's firefighters have gained official approval as a mill fire brigade, enabling the already good co-operation to be further strengthened. The fire brigade has access to digital radio and more in-depth training, enabling direct emergency response on site.

Cooperation with schools and vocational training

The Plattling site currently offers vocational training as:

- Paper technologist
- Machine and system operator
- Warehousing logistics operator
- Electronics technicians for industrial engineering
- Industrial mechanic

In September, 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.



Environmental parameters 2017

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 Statement.

		MD Papier GmbH (LWC)	Rhein Papier GmbH (SC)
Production capacity	Paper	Up to 765,000 t (3 paper machines)	
Raw materials and additives	Recovered paper Roundwood Chemical pulp Pigments Process chemicals Consumables	See UPM Corporate Environmental Statement for more information	
Energy	Fossil fuels Purchased power	100% See UPM Corporate Environmental Statement for more information	
Emissions to air	Carbon dioxide, CO ₂ (fossil) Nitrogen oxides, NO _x Carbon monoxide, CO Sulphur dioxide, SO ₂ Particulates	249,605 t 119.2 t 27.2 t 2.5 t 0.15 t	185,791 t 85.4 t 17.0 t 1.8 t 0.11 t
Water intake	Process water Cooling water	5,996,002 m ³ 0 m ³	4,343,567 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	
Waste*	Total waste volume of which – Deinking sludge – Fibre residues – Biosludge – Bark and wood residues – Other waste Hazardous waste Recovery rate (total)	93,879 t 24,637 t 12,143 t 14,429 t 39,818 t 2,767 t 85.5 t 100%	130,078 t 0 t 4,828 t 18,009 t 106,274 t 906 t 60.6 t 100%
Size of mill area	Built on or sealed	15.64 ha	14.73 ha

* Including moisture



Performance against targets in 2017

TARGETS	ACHIEVEMENT	COMMENTS
Water Reduce specific fresh water consumption on LWC line (PM 10 and PM 11) by 0.5 l/kg	No	Fresh water consumption only partly reduced
Water and air Comply with "Clean Run" provisions	No	There were two exceedances of the outflow concentration limit
Raw materials Reduce material losses on LWC line (PM 10 and PM 11) by 10 % in comparison with 2015	-	Could not be measured due to readjustment of the measuring system
Chemical use Continue exploring ways to reduce COD load of effluents from bleaching groundwood pulp	Yes	Plant trials successful, technical implementation planned for 2018
Energy Reduce energy consumption by 5,000 MWh/a Investigate solids losses	Yes	Energy consumption reduced beyond target by modifications in the production process

Targets for 2018

Unless otherwise stated, the reference year is 2017

TARGETS AND MEASURES	DEADLINE	DEPARTMENT RESPONSIBLE
Water Reduce specific fresh water consumption on LWC line (PM 10 and PM 11) by 0.4 l/kg	12/2018	Production
Water and air Comply with "Clean Run" provisions (0 category 3–5 deviations)	12/2018	Production, Environmental Management
Raw materials Reduce material losses on LWC line (PM 10 and PM 11) by 10%	12/2018	Production
Chemical use Reduce COD load of effluents from bleaching groundwood pulp by 10% in comparison with 2017	12/2018	Groundwood Pulping
Energy Reduce energy consumption by 5,000 MWh/a	12/2018	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 (MD Papier GmbH and Rhein Papier GmbH) in 94447 Plattling, Nicolausstrasse 7, Germany, as indicated in the updated Environmental Statement 2017 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 updated Environmental Statement 2017 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 updated 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.

Essen, 29 May 2018

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



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