The Biofore Company UPM

Environmental performance in 2016

UPM Plattling

Through the renewing of the bio and forest industries, UPM is building a sustainable 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 19,300 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

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 580 people and three paper machines, UPM Plattling produces up to 790,000 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.

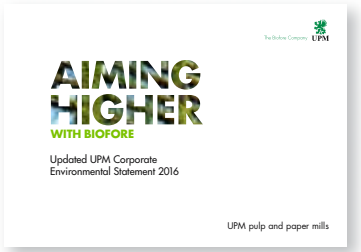
The organisation of UPM Plattling includes the two companies operating at the site, MD Papier GmbH and Rhein Papier GmbH. Production and administration of the two mills having already been closely interlinked for several years, so they are reporting jointly on their environmental performance in 2016, 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 Bavarian Forest. 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	Up to 790,000 tonnes per annum
Personnel	Ca. 580
Products	Magazine papers (SC and LWC) UPM Max UPM Ultra UPM Sol UPM Cat UPM Cote UPM Nova UPM Smart UPM Star
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 Performance in 2016 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 2016. 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 2018.

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Environmental year 2016

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 certified, too.

Every year, we set ourselves ambitious new environmental targets. The group-wide "Clean Run" campaign continued to be one of our focus areas in 2016. It is aimed at ensuring environmentally friendly production without environmentally relevant incidents. The mills are audited with respect to their environmental work and supported in their further development. The Plattling mill complied with all statutory environmental requirements in 2016.

There were four complaints overall from the neighborhood about noise nuisance. In all of the cases, we were able to identify the sources of noise and remove them. Causes and response measures were agreed with the authorities.

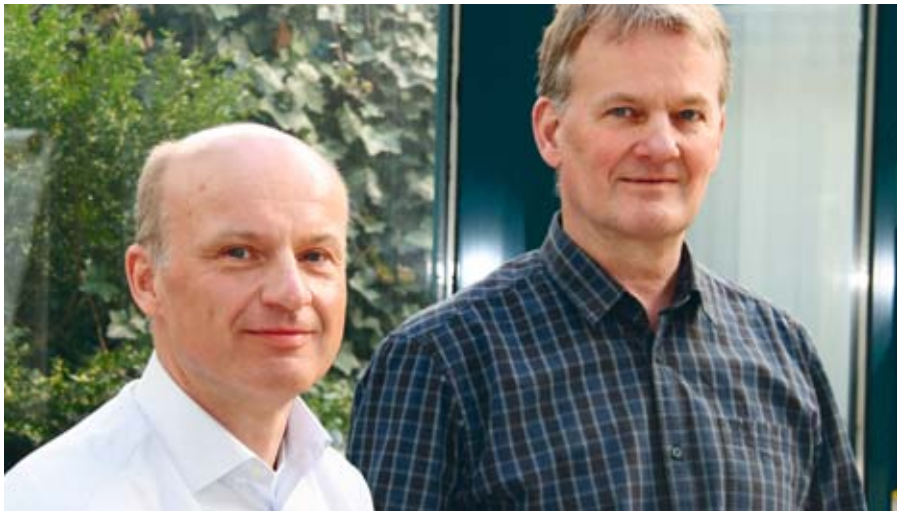
The innovative third treatment stage installed in the LWC effluent treatment plant in 2013, which consists of a two-stage ozone treatment with subsequent biofiltration, underwent further technical optimisation in 2016. The effluent treatment plant worked satisfactorily. We were able to considerably reduce the amount of flotation sludge from the third treatment stage of the LWC line, whose dewatering and disposal involves a great deal of effort. The operation of the hydrotechnical installations, which had been outsourced to an external partner, was reintegrated at the end of 2013. The integration into production allowed much improved communication on the operation of the effluent treatment plant. In 2016 too, the return to a fully continuous shift system increased the level of safety in preventing critical situations.

Health and safety at work

The topic of the annual health and safety day in 2016 was "noise". In addition, we offered preventive health care in the form of colorectal and skin cancer screening, which was very well received by our employees.

Community involvement

UPM Plattling supports the local fire brigades and a sports club with donations. Moreover we regularly organize mill visits for secondary schools and universities in order to give the younger generation an understanding of UPM's sustainability concept.



Mika Kämpe, General Manager

Wolfgang Haase, Manager Environment

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 reduce emissions 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 now 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.

As the method for calculating the NO_X load of the power plant was revised in 2012, this was set as the new reference year. The further reduction of the CO value was achieved by operating the plant in more favourable load conditions and without major disturbances. The NO_X value increased slightly, in exchange for a decrease of CO emissions. Depending on the combustion temperature, only one of the two emission values in the gas turbine can be optimised. SO_2 and particulate emissions are computed from the amount of gas burnt, rather than measured.

There were no deviations from the permit limits.

UPM Plattling has set itself the target to further reduce specific CO_2 emissions by efficient energy use. To this effect several measures were implemented in 2016. For instance, we reduced energy consumption in groundwood pulping and do no longer use some steam boilers in holding mode.

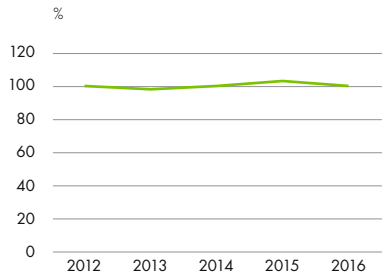
Emissions from the power plant

	Limit value (mg/Nm³)	Mean value measured (mg/Nm³)			
		2013	2014	2015	2016
CO	100	7.2	3.6	2.9	3.1
NO_X	50 (variable depending on supplementary firing)	24.8	23.2	27.8	31.3

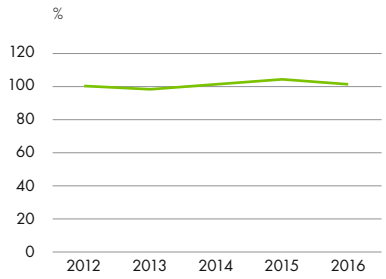
Emissions from the steam boiler

	Limit value (mg/Nm³)	Mean value measured (mg/Nm³)			
		2013	2014	2015	2016
CO	50	2.5	2.7	4.3	4.3
NO_X	100	77.6	71.6	71.6	72.4

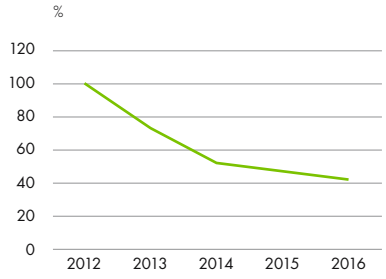
Fossil carbon dioxide, CO_2



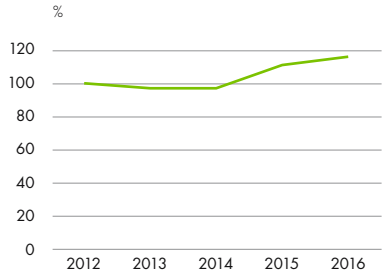
Dust



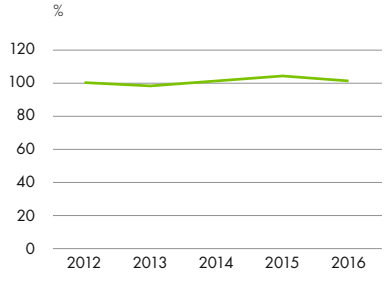
Carbon monoxide, CO



Nitrogen oxides, NO_X



Sulphur dioxide, SO_2



All graphs show the specific emissions per tonne of paper, in comparison with 2012.

Water

UPM Plattling drew 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. We were able to reduce our specific water consumption by 6%.

The mill's joint effluent treatment plant for the LWC and SC production lines operated trouble free throughout the whole year. There were no violations of permit limits.

We were able to bring down effluent volume by successfully implementing measures on PM 1. The COD and BOD_5 concentrations in the effluents discharged from the treatment plant were slightly higher than in the previous year.

This was due to the lower effluent volume which, with effluent load remaining unchanged, leads to slightly higher concentrations. The treatment capacity of our plants has permanently improved since the installation of the ozone-stage in 2013.

Following changes in terms of permit and technical issues the year 2012 was set as the reference year for reporting emissions.

Emissions from the joint effluent treatment plant

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 corresponded to that in the previous year. For another year in a row we were able to reduce the amount of hazardous waste, namely by 9%. With 100% the recovery rate in 2016 remained on the same very high level as in previous years. No waste went to landfill.

Environmental parameters 2016

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 790,000 tonnes (3 paper machines)	
Raw materials and additives	Recovered paper Roundwood Chemical pulp Pigments Process chemicals Operating supplies	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 Sulpur dioxide, SO_2 Particulate matter	227,132 t 83.0 t 15.3 t 2.3 t 0.14 t	185,031 t 65.6 t 8.5 t 1.8 t 0.11 t
Water intake	Process water Cooling water	5,979,605 m^3 0 m^3	3,999,862 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	8,638,150 m^3 2,001 t 89.5 t 3.1 t 24.3 t 1.5 t	
Waste*	Total volume of which – Deinking sludge – Fibre residues – Biosludge – Bark and wood residues – Others Hazardous waste Recovery rate (total)	91,718 t 23,697 t 11,548 t 13,672 t 40,262 t 2,539 t 45.5 t 100%	135,123 t 0 t 6,876 t 20,272 t 106,966 t 1,010 t 65.4 t 100%
Size of mill area	Built on or sealed	15.64 ha	14.73 ha

** Including moisture*

Performance against targets in 2016

Targets	Target achieved?	Comments
Water Reduce specific fresh water consumption on PM 1 by 0.5 l/kg	No	Fresh water consumption remained on a similarly good level as in the previous year.
Water and air Comply with "Clean Run" provisions	Yes	There were neither incidents with negative environmental impacts nor violations of limit values.
Raw materials Reduce material losses – on PM 1 by 10% in comparison with 2014 – on PM 10 and PM 11 by 20%	 Yes No	 – Material losses were reduced by 20%. – It was not possible to implement the planned measures due to process-related reasons.
Chemical use – Continue exploring ways to reduce COD load of effluents from bleaching groundwood pulp – Reduce share of synthetic binding agents by 2%	 Yes No	 – The project was continued. – Owing to a loss in quality, the amount of synthetic binding agents could be reduced by only 1%.
Energy Reduce energy consumption by 10,000 MWh/a	Yes	We were able to reduce energy consumption beyond our target through efficiency improvement and modifications in the production process.

Current targets

Unless otherwise stated, the reference year is 2016

Targets and measures	Deadline	Department responsible
Water Reduce specific fresh water consumption on PM 10 and PM 11 by 0.5 l/kg	12/2017	Production
Water and air Comply with "Clean Run" provisions	12/2017	Production, Environmental Management
Raw materials Reduce material losses on PM 10 and PM 11 by 10% in comparison with 2016	12/2017	Production
Chemical use Continue exploring ways to reduce COD load of effluents from bleaching groundwood pulp	12/2017	Groundwood Pulping
Energy Reduce energy consumption by 5,000 MWh/a	12/2017	Groundwood Pulping, Production, Energy Production

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 updated Environmental Statement 2016 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 2016 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 2016.

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, 6 April 2017

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

MORE WITH BIOFORE

UPM leads the integration of bio and forest industries into a sustainable future. Biofore stands for innovation, responsibility and efficiency.
www.upm.com

UPM Plattling

MD Papier GmbH
Nicolausstrasse 7
94447 Plattling
Germany
Tel. +49 9931 502-0
Fax +49 9931 502-103

Rhein Papier GmbH
– Operating Site Plattling –
Nicolausstrasse 7
94447 Plattling
Germany
Tel. +49 9931 89606-0
Fax +49 9931 89606-509

For further information, please contact:
Mika Kämpe
General Manager
Tel. +49 9931 502-0

Wolfgang Haase
Manager Environment
Tel. +49 9931 502-505

E-mail: info.plattling@upm.com

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