

# ENVIRONMENTAL performance in 2015





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 Paper Asia, UPM Paper Europe and North America and UPM Plywood. Our products are made of renewable raw materials and are recyclable. We serve our customers worldwide. The group employs around 19,600 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](http://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.

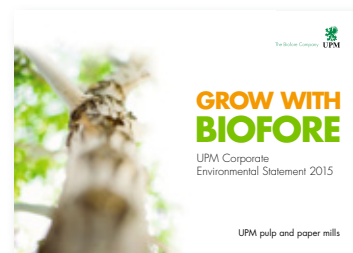
The organisation of UPM Plattling includes the two companies operating at the site, MD Papier GmbH and Rhein Papier GmbH. Production and administration of the two mills having already been closely interlinked for several years, so they are reporting jointly on their environmental performance in 2015, 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.

<b>Production capacity</b>	Up to 790,000 tonnes per annum		
<b>Personnel</b>	Ca. 580		
<b>Products</b>	Magazine papers (SC and LWC)		
	UPM Max	UPM Ultra	UPM Sol
	UPM Cat	UPM Cote	UPM Nova
	UPM Smart	UPM Star	
<b>Certificates</b>	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®		
	<i>All certificates can be found from UPM's Certificate Finder (available at <a href="http://www.upm.com/responsibility">www.upm.com/responsibility</a>)</i>		
<b>Environmental labels</b>	EU Ecolabel (EU Flower)		



UPM Plattling Environmental Performance in 2015 is a supplement to the Corporate Environmental Statement of UPM's pulp and paper mills (available at [www.upm.com](http://www.upm.com)) and provides mill-specific environmental performance data and trends for the year 2015. 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 2017.



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EU Ecolabel : FI/011/001

# Environmental year 2015

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.

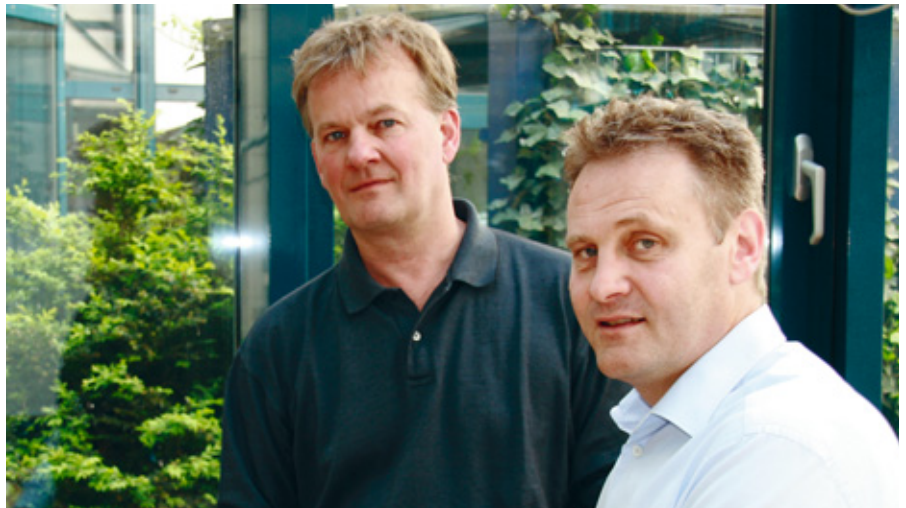
Every year, we set ourselves ambitious new environmental targets. The Group-wide "Clean Run" project continued to be one of our focus areas in 2015. The campaign is aimed at ensuring environmentally friendly production without environmentally relevant incidents.

In 2015, there was not a single "Clean Run"-related deviation at the site. In April and October, there were three complaints overall from the neighbourhood about noise nuisance. Although the complaints were immediately investigated, it was not possible, in one case, to identify a source of noise. In the other two cases, we were able to identify the sources of noise and remove them. Causes and response measures were agreed with the authorities.

In September there was one complaint about odour nuisance, whose source was removed.

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 2015. 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 hydro-technical 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 2015 too, the return to a fully continuous shift system increased the level of safety in preventing critical situations.



Wolfgang Haase, Manager Environment

Wolfgang Ohnesorg, General Manager

# 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<sub>x</sub> 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<sub>x</sub> 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<sub>2</sub> 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<sub>2</sub> emissions by efficient energy use. To this effect several measures were implemented in 2015. For instance, we reduced energy consumption in groundwood pulping and do no longer use some steam boilers in holding mode. The slight increase in specific CO<sub>2</sub> emissions was due to the optimised operation of the power plant.

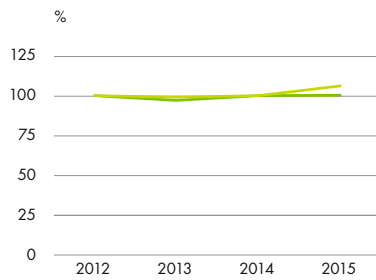
## EMISSIONS FROM THE POWER PLANT

	Limit value (mg/Nm <sup>3</sup> )	Mean value measured (mg/Nm <sup>3</sup> )			
		2012	2013	2014	2015
CO	100	11.0	7.2	3.6	2.9
NO <sub>x</sub>	50 (variable depending on supplementary firing)	26.0	24.8	23.2	27.8

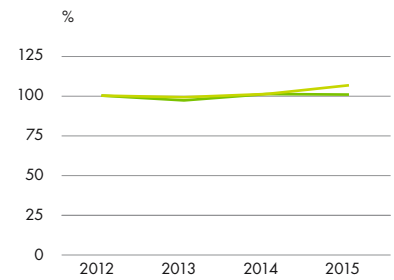
## EMISSIONS FROM THE STEAM BOILER

	Limit value (mg/Nm <sup>3</sup> )	Mean value measured (mg/Nm <sup>3</sup> )			
		2012	2013	2014	2015
CO	50	2.4	2.5	2.7	4.3
NO <sub>x</sub>	110	84.0	77.6	71.6	71.6

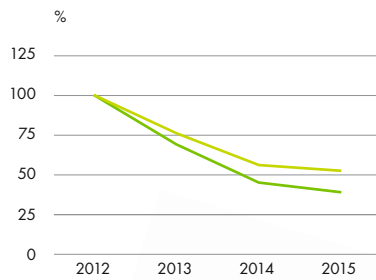
### FOSSIL CARBON DIOXIDE, CO<sub>2</sub>



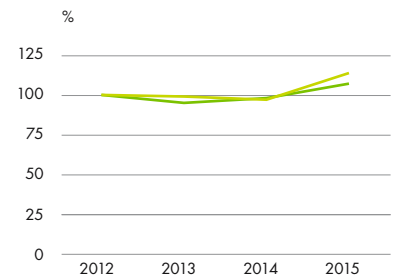
### DUST



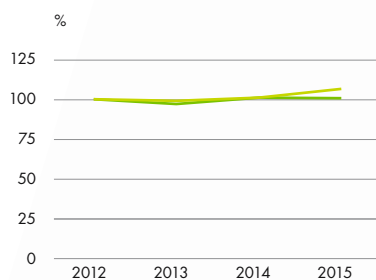
### CARBON MONOXIDE, CO



### NITROGEN OXIDES, NO<sub>x</sub>



### SULPHUR DIOXIDE, SO<sub>2</sub>



— LWC  
— SC

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

# Water

UPM Plattling drew 98.9% of the water required for the production process from the Isar, with the remaining 1.1% 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 remained on a similar level as in previous years.

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<sub>5</sub> 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. With 99.99% the recovery rate in 2015 was remained on the same very high level as in previous years. No waste went to landfill.

# Environmental parameters 2015

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)
<b>Production capacity</b>	Paper	Up to 790,000 tonnes (3 paper machines)	
<b>Raw materials and additives</b>	Recovered paper Roundwood Chemical pulp Pigments Process chemicals Operating supplies	See UPM Corporate Environmental Statement for more information	
<b>Energy</b>	Fossil fuels Purchased power	100% See UPM Corporate Environmental Statement for more information	
<b>Emissions to air</b>	Carbon dioxide, CO <sub>2</sub> (fossil) Nitrogen oxides, NO <sub>x</sub> Carbon monoxide, CO Sulphur dioxide, SO <sub>2</sub> Particulate matter	231,974 t 79.2 t 16.9 t 2.3 t 0.14 t	173,619 t 55.2 t 8.6 t 1.7 t 0.11 t
<b>Water intake</b>	Process water Cooling water	6,340,040 m <sup>3</sup> 0 m <sup>3</sup>	3,727,379 m <sup>3</sup> 0 m <sup>3</sup>
<b>Discharges to water</b>	Effluent volume Chemical oxygen demand, COD Biological oxygen demand, BOD <sub>5</sub> Phosphorus, P (total) Nitrogen, N (inorganic) Adsorbable organic halogen compounds, AOX	8,274,392 m <sup>3</sup> 1,815 t 92.6 t 3.4 t 21.4 t 0.9 t	
<b>Waste*</b>	Total volume of which – Deinking sludge – Fibre residues – Biosludge – Bark and wood residues – Others Hazardous waste Recovery rate (total)	92,749 t 24,848 t 9,704 t 15,780 t 39,601 t 2,752 t 63.8 t 99.99%	120,418 t 0 t 7,904 t 21,324 t 90,334 t 803 t 52.6 t 99.99%
<b>Size of mill area</b>	Built on or sealed	156,400 m <sup>2</sup>	147,300 m <sup>2</sup>

\* Including moisture



# Performance against targets in 2015

TARGETS	TARGET ACHIEVED?	COMMENTS
<b>Water</b> Reduce specific fresh water consumption on PM 1 by 1 l/kg	Yes	Specific fresh water consumption down by more than 1 l/kg
<b>Water and air</b> Improve environmental responsibility in all organizational levels in production	Yes	Environmental observations reported by staff
<b>Raw materials</b> – Reduce material losses on PM 1 by 20% – Increase share of DIP on PM 1 by 100%.	No Yes	– Material losses down by 4.6% – Share of DIP in the fibre mix increased by more than 100%
<b>Chemical use</b> Continue exploring ways to reduce COD load of effluents from bleaching groundwood pulp	Yes	Successful trials with magnesium hydroxide
<b>Energy</b> Reduce specific power consumption by 20,000 MWh/a	No	Only 90% of the targeted savings achieved

## Current targets

Unless otherwise stated, the reference year is 2015

TARGETS AND MEASURES	DEADLINE	DEPARTMENT RESPONSIBLE
<b>Water</b> Reduce specific fresh water consumption on PM 1 by 0.5 l/kg	12/2016	Production
<b>Water and air</b> Comply with "Clean Run" provisions	12/2016	Production, Environmental Management
<b>Raw materials</b> Reduce material losses – on PM 1 by 10% in comparison with 2014 – on PM 10 and PM 11 by 20%	12/2016 12/2016	Production Production
<b>Chemical use</b> – Continue exploring ways to reduce COD load of effluents from bleaching groundwood pulp – Reduce share of synthetic binding agents by 2%	12/2016	Groundwood Pulping Mill Development
<b>Energy</b> Reduce energy consumption by 10,000 MWh/a	12/2016	Groundwood Pulping, Production



### Environmental verifier's declaration on verification and validation activities

Environmental verifier, Astrid Günther (DE-V-0357), acting for TÜV NORD CERT Umweltgutachter GmbH, licensed for the scope NACE Code 17.12 (papermaking), declares to have verified whether the site UPM Plattling (MD Papier GmbH and Rhein Papier GmbH) in 94447 Plattling, Nicolausstrasse 7, Germany, as indicated in the Environmental Statement 2015 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 2015 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 2015.

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, 4 May 2016

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

# MORE WITH BIOFORE

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