The Biofore Company UPM

ENVIRONMENTAL performance in 2014

UPM Schongau

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 20,000 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 Schongau

UPM Schongau is sited on a bend on the Lech river in the Southern German town of Schongau.

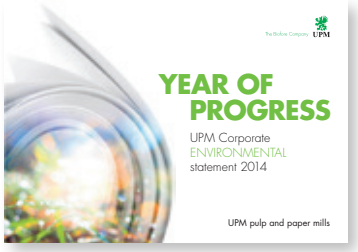
The site was founded in 1887. In 1962, one of the world's first flotation deinking systems went on line in Schongau. This processing technology was a major breakthrough for the recycling of used graphic paper into new printing paper.

Today, UPM Schongau produces printing paper in reels for newspapers, newspaper supplements, advertisers, brochures, magazines and catalogues on three paper machines. Recovered paper is in terms of volume the most important raw material at the site. Other raw materials used include sawmill residues and pigments as fillers. Pigments are partly made on the premises by the local supplier SMI.

The mill's energy generation plants were modernised. Power and steam are generated in combined heat and power plants. The existing power plants were complemented with a modern, highly efficient gas and steam turbine, increasing the mill's share of self-generated electricity.

A small part of the power consumption is covered with hydropower.

The wastewater from the production process is treated in the on-site effluent treatment plant.



UPM Schongau Environmental Performance in 2014 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 2014. 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 2016.

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Production capacity	Up to 760,000 tonnes per annum
Personnel	About 548 (total heads as at 31 December 2014)
Products	Standard and improved newsprint as well as supercalendered uncoated paper UPM Brite — UPM News UPM Eco — UPM EcoPrime UPM EcoBasic — UPM Book
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) and Blue Angel eco-label (RAL-UZ 14 or 72) for UPM News and UPM EcoBasic

FSC www.fsc.org FSC® C014719 The mark of responsible forestry

For FSC products, visit www.fsc.org

PEFC PEFC/02-31-80 Promoting Sustainable Forest Management www.pefc.org

For PEFC products, visit www.pefc.org

EU Ecolabel www.ecolabel.eu FI/11/001

DER BLAUE ENGEL weil überwiegend aus Altpapier und chlorfrei gebleicht schützt die RESSOURCEN

Environmental year in 2014

UPM Schongau's papermaking operations have an impact on people and environment at the site. We take this responsibility very seriously. This is why protecting the environment is central to our daily work.

As far back as the early sixties the commissioning of a deinking plant set the scene for sustainable resource conservation. Today the volume of paper recycled is roughly equivalent to the volume of paper produced. Some paper grades require an input of virgin fibres which, since the end of 2004, have come mostly from sustainable forestry. Nearly closed water circuits, heat recovery systems as well as a high recovery rate of process residue generated at the site have for a long time been the results of our environmentally responsible way of operating.

Papermaking is an intensive energy using process. This is why we have made great efforts in recent years to improve the mill's energy efficiency. In the spring of 2012, UPM Schongau's energy management successfully gained certification to DIN EN ISO 50001 and has been continuously further developed ever since. In this way UPM Schongau demonstrates efficient energy and resource use.

At the end of the year the new efficient gas power plant was put into service. It will increase the mill's self-generation of electricity from currently approximately 45% to 70%.

Investments in the recovery of ash allowed us to step up the portion of ash that is used as a product in its own right by 59% in comparison with the previous year. Applications include use as a soil stabiliser, as an additive for construction materials and as a replacement for soda lye in our own production plants.

The mill's oil separators were refurbished.

The effluent plant ran consistently. The disturbances in the previous year were due to substances contained in the recovered paper we buy as raw material. Appropriate action was taken.

In 2014 there were two complaints about recovered paper polluting public grounds.

In the field of workplace safety, work continued intensively to systematically identify hazards and follow them up. In particular, we reviewed and expanded our risk assessments in the course of the implementation of the permit-to-work system.

We identified focus areas and targets for health protection which we will start implementing in 2015.

Work is continuing at UPM Schongau to further develop and improve environmentally relevant processes.

Caius Murtola,
General Manager

Ute Soller,
Manager OHS/Environment/
Management Systems

Martin Heinrich,
Management System
Representative

Air

In 2014, airborne emissions remained largely constant on a low level. Energy generated from the incineration of process residue and used wood reduced our natural gas usage. The high proportion of mostly renewable fuels contributes to cutting fossil CO_2 emissions.

The mean carbon monoxide (CO) and nitrogen oxides (NO_X) emission concentrations from our fluidised bed boiler increased slightly. The remaining parameters remained approximately constant on a low level.

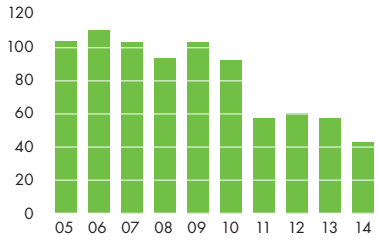
In the emissions from the fluidised bed boiler, there were 9 deviations from permit limits (7 x half-hourly mean value of CO concentration, 2 x daily average value of NO_X concentration), which were mostly caused by problems with the solid fuel supply and resulting load fluctuations. However, the half-hourly mean values for CO and NO_X concentrations were in line with the permit limits for 99.9% and 99.6% of the time respectively.

Over the past 10 years, we have been able through various measures (e.g. fabric filters) to reduce the annual NO_X loads.

The annual particulate matter loads increased slightly. But at 1.8 mg, the mean concentration remains well below the permit limit of 10 mg.

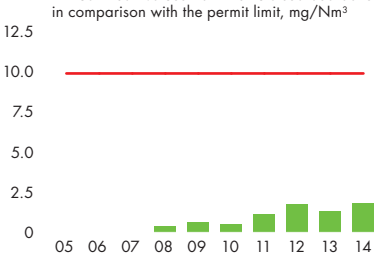
NITROGEN OXIDES, NO_x

Development kg/tonne of paper in %



PARTICULATES

Annual mean values from the fluidised bed boiler in comparison with the permit limit, mg/Nm³



Annual average — Limit value

EMISSIONS FROM THE COMBINED HEAT AND POWER PLANT 2014

	Limit value (mg/m³ Ntr)	Mean value of measurements (mg/m³ Ntr)
Fluidised bed boiler/Continuous measurement		
CO	50	12
Particulate matter	10	1.8
SO_2	50	0.3
NO_X	200	173
Hg_{tot}	0.03	0.0086
HCL	0.6	0.03
Fluidised bed boiler/One-time measurement		
C_{tot}	20	< 2
HF	1	< 0.1
Cd, Ti	0.05	< 0.1
Sb, As, Pb, Co, Cr, Cu Mn, Ni, V, Sn	0.5	< 2
PCDD	0.1 ng/m³ Ntr	n.d.
PCDF	0.1 ng/m³ Ntr	n.d.
Steam boiler/Continuous measurement		
CO	100	2.2
NO_X	350	8.5

n.d. = not detectable

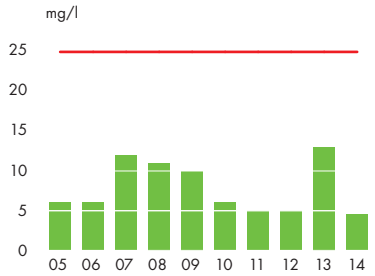
Water

A considerable amount of water from the Lech river is required to cool power stations, steam turbines, production machinery and heat recovery systems. Cooling water is not contaminated during use and can be discharged back directly into the river. The heat discharged into the river is continuously monitored. The process water used in paper production is bank filtrate from the Lech river. Only a fraction of the water is discharged as wastewater after it has been recycled within the process several times.

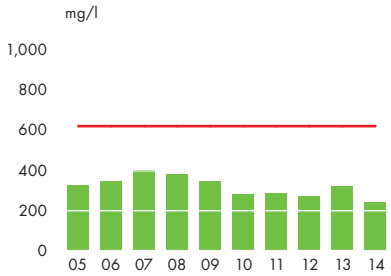
The capacity of the on-site multi-stage effluent treatment plant corresponds to that of a treatment plant for 420,000 people. Effluents are first cleaned in a chemical-mechanical treatment stage and then in an anaerobic IC reactor. Finally, they are treated aerobically in an activated sludge tank and a clarifier tank.

The quality of the treated effluents is continuously monitored, both internally and by the authorities in charge.

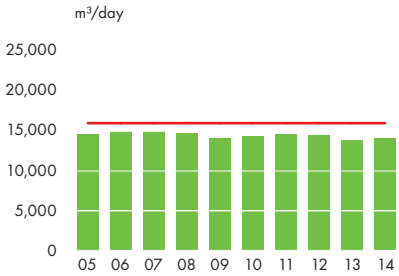
BIOLOGICAL OXYGEN DEMAND, BOD_5



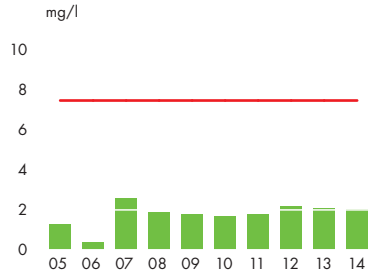
CHEMICAL OXYGEN DEMAND, COD



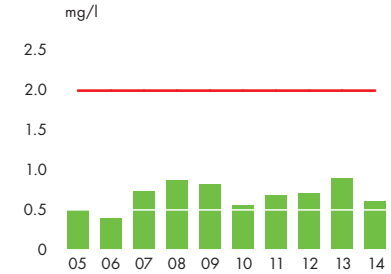
EFFLUENT VOLUME



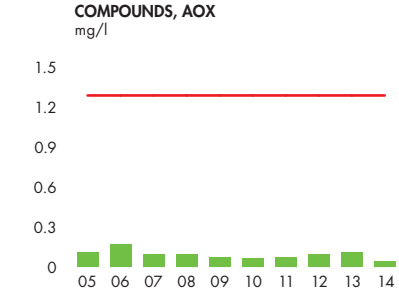
NITROGEN (INORGANIC), N



PHOSPHORUS, P



ADSORBABLE ORGANIC HALOGEN COMPOUNDS, AOX

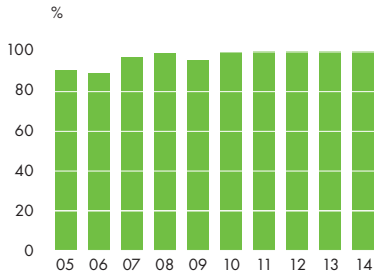


Annual average — Limit value

Waste

Ash from the fluidised bed boiler operating on solids constitutes the largest waste fraction at UPM Schongau. In 2014, 100% of the ash was recovered and sold mostly to the construction materials and cement industries for reuse. However, the recovery rate is subject to seasonal and cyclical variations.

RECOVERY RATE



Environmental parameters 2014

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.

Production capacity	Paper	Up to 760,000 t (3 paper machines)
Raw materials and additives	Recovered paper Wood chips Process chemicals Operating supplies	See UPM Corporate Environmental Statement for more information
Energy	Renewable fuels Fossil fuels Purchased power Hydropower	28% 72% See UPM Corporate Environmental Statement for more information
Emissions to air	Carbon dioxide, CO_2 (fossil) Nitrogen oxides, NO_x Sulphur dioxide, SO_2 Particulates Carbon monoxide, CO	246,565 t 143 t 0.5 t 1.5 t 9.8 t
Water intake	Process, cooling and drinking water – of which cooling water – of which drinking water	51,811,178 m^3 45,942,566 m^3 43,202 m^3
Discharges to water	Effluent volume Chemical oxygen demand, COD Biological oxygen demand, BOD_5 Phosphorus, P Nitrogen (inorganic), N Adsorbable organic halogen compounds, AOX	5,129,178 m^3 1,268 t 24 t 3.2 t 9.2 t 0.6 t
Waste*	Total volume of which – ash – fluidised bed sand – metal – wood residue – other – hazardous waste Recovery rate	98,953 t 88,703 t 4,077 t 1,235 t 1,801 2,987 t 150 t 99.96%
Size of mill area	Built on or sealed	35 ha

**incl. moisture*

Performance against targets in 2014

TARGET	TARGET ACHIEVED?
Energy	
Implement preparatory project to recover heat from effluents	Preparatory project carried out. Heat recovery is basically feasible, but currently not economically viable.
Reduce specific energy consumption of PM 9 by optimising the refining of recovered fibre pulp and the turbair plant of PM 9 (–200 Wh/year in comparison with 2013)	Yes, power consumption reduced by 12,600 MWh/year.
Waste	
Increase the amount of ash that is used as a product (by at least 15% in comparison with 2013)	Yes, increase by 50% achieved.
Environmental awareness	
Keep staff informed and sharpen their awareness for energy and environment by introducing an environmental calendar	Yes, calendar distributed to all departments.

Current targets

TARGETS AND MEASURES	DEADLINE	DEPARTMENT RESPONSIBLE
Energy		
Heat recovery in general Various options identified through preparatory project Evaluate options and plan details	12/2015	WETW
Waste		
Further increase the amount of ash that is used as a product (by at least 50% in comparison with 2014)	12/2015	Manager By-Products
Airborne emissions		
Reduce temporary emission peaks from the fluidised bed boiler by refurbishment and optimisiation Start planning details in 2015; completion by the end of 2018	31.12.2018	Manager Power Plant

EMAS
Verified environmental management
REG.NO. FI - 000058

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 GmbH, Schongau mill, Friedrich-Haindl-Strasse 10, 86956 Schongau, Germany, as indicated in the Environmental Statement 2014 of the mentioned site (registration no. 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 2014 of UPM GmbH, Schongau mill, reflect a reliable, credible and correct image of all the activities of UPM GmbH, Schongau mill, within the scope mentioned in the Environmental Statement 2014.

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, 28 April 2015

Astrid Günther
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06/2015