The Biofore Company UPM

ENVIRONMENTAL
performance in 2014

UPM Fray Bentos

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 Fray Bentos

The pulp mill is located on the coast of the river Uruguay, five km away from the city of Fray Bentos.

Construction of this state-of-the-art pulp mill began in 2005 and the total investment was of 1.2 billion US dollars. The Environmental Authorization for Operation was granted by authorities on November 8th, 2007. The environmental authority in Uruguay is the Ministry of Housing, Territorial Planning and Environment (MVOTMA) through the National Direction for the Environment (DINAMA). Through the use of modern techniques high quality pulp is efficiently produced, most of it for the Asian and European markets.

The annual capacity of the mill is of 1.3 million tons of bleached eucalyptus pulp, and the mill uses approximately 4.5 million cubic metres of wood. Wood procurement is under the responsibility of UPM Forestal Oriental, which has been pioneering the development of eucalyptus plantations in Uruguay for 25 years, since 1990. UPM has a 91% ownership in the Fray Bentos pulp mill and 100% in UPM Forestal Oriental. The UPM mill complex also accommodates the operations of four chemical plants that supply the bleaching chemicals for the process. These plants are under the responsibility of Kemira, which operates three of them (hydrogen peroxide, sodium chlorate, chlorine dioxide) while the fourth (oxygen) is operated by Praxair.

Maintenance of pulp mill operations is outsourced to Andritz, which supplied most of the production equipment for the construction of the mill.

Production capacity	1,300,000 ADt
Personnel	180
Products	UPM Euca (bleached eucalyptus kraft pulp)
By-products	Electricity
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 ISO 22000 – Food Safety 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	UPM pulp products have the approval for use in EU Ecolabel and Nordic Ecolabel paper products.
Awards	2014 National Energy Efficiency Award in the industrial sector, from the Ministry of Industry, Energy and Mining of Uruguay

UPM Fray Bentos 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.

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

Environmental year 2014

Performance

The Fray Bentos pulp mill achieved in 2014 a high level of capacity utilization, maintaining its reliability in pulp quality as well as a high level of environmental performance.

Two permit non-compliances occurred during the year. The first one was in January, when the concentration of Biochemical Oxygen Demand (BOD) exceeded the effluent discharge standard in one daily sample. The second was in October, during the annual shutdown, when insufficient aeration in the secondary wastewater treatment caused values over the standards for Total Phosphorus and BOD; this second exceedance lasted five days. None of the non-compliant discharges posed any potential risk of damage to the environment and corrective actions were implemented at the mill in agreement with the authorities.

Emissions into the air remained at very good levels, with all parameters within the conditions of the permit limit.

Handling of malodorous gases was at very good level in 2014, in accordance with internal targets. There were less than five odour events reported in nearby areas that could have been related to disturbances in the operation of the mill, including those related to the annual shutdown. Odours originated at the pulp mill do not pose any risk of harm to the environment or human health. The mill continues to communicate in advance to the community, local press, national stakeholders and members of the follow-up commission when there will be a planned activity that might cause the emission of odorous compounds to the air, as well as answering openly all related questions from stakeholders.

No complaints were received during 2014 about nuisance related to noise from the mill.

Landfill operation was normal and planning of the second stage was done during 2014: construction will proceed during the first half of 2015 and as a result, the landfill area will roughly double. Green liquor dregs constitute approximately 90% of the total amount of solid waste bound for the landfill site.

UPM Fray Bentos pulp mill is self-sufficient in electrical consumption through the energy generated by burning black liquor. About 22% of this biomass-based electricity generated at the mill in 2014 was supplied to the national grid.

The mill's emissions are within the ranges associated to Best Available Techniques (BAT) as established in the European Commission Implementing Decision of 26 September 2014.

UPM Fray Bentos received the National Energy Efficiency Award 2014 in the category of large industrial consumers. The prize is awarded by the Ministry of Industry, Energy and Mining. The mill presented projects related to the optimization of the compressed air system and improving the efficiency of steam traps, pumping and pulp screening.

Environmental monitoring

Environmental monitoring activities under the responsibility of UPM Fray Bentos and implemented by several external experts continue to show, seven years after the startup, that there is no negative impact on the environment related to the operation of the pulp mill.

Updated results of the environmental monitoring activities are available in our website: www.upm.com.uy.

Transparency

In order to ensure a transparent and effective communication with the community and national stakeholders, the mill participated in 2014 in the two sessions of the follow-up commission established in March 2007. Material presented by the company and by the authorities in these meetings is available in DINAMA's webpage. (http://www.mvotma.gub.uy/comision-de-seguimiento-upm.html)

The results of monitoring activities carried out separately by the Uruguayan authorities, who also perform monthly inspections at the mill, confirm the ones obtained in the mill's monitoring program. Those results are periodically presented to the follow-up commission in Fray Bentos. Additional information on compliance with legal requirements can be found both in UPM's and DINAMA's webpages.

The environmental product declaration for Fray Bentos pulp was updated and made available to customers.

The mill has arranged a system of weekly visits to the site which is open to the general public free of charge. Since 2008, over 25,000 persons from Uruguay and several other countries have visited our facilities.

Juha Kääriäinen,
Vice President, UPM Uruguay Operations

Gervasio Gonzalez,
Environmental Manager

Air

Emissions into the air remained at very good levels, with all parameters within the conditions of the environmental permit.

Handling of malodorous gases was at good level in 2014, and in accordance with internal targets. There were less than five odour events reported in nearby areas that could have been related to disturbances in the operation of the mill, including those related to the annual shutdown. In general, these complaints corresponded to short duration events (about 15 minutes or less) of light or mild intensity. Odours originated at the pulp mill do not pose any potential risk of harm to the environment or human health.

Ambient air quality measurements show that the operation of the pulp mill has no significant effect on the concentrations of pollutants in the air. Concentrations of all measured parameters have remained within the limits established in the environmental permit.

Water

UPM Fray Bentos acquires fresh water from the Uruguay river. The operations require about 0.84 m^3 of water per second and generate about 0.63 m^3 per second of treated effluent.

In January, the BOD_5 of one daily sample was 69.5 mg/l, over the permit limit of 60 mg/l. The cause was low dissolved oxygen in one of the aeration basins of the effluent treatment plant, which in turn originated from the plugging of the diffusers' membranes. Due to these partially plugged membranes, injection of air into the effluent being treated was not enough to support the activity of the living microorganisms (biosludge), and therefore the efficiency of the treatment was reduced, causing the mentioned increase in the BOD of the treated effluent.

During the annual maintenance shutdown in October, insufficient aeration in the secondary treatment caused an exceedance of P and BOD in daily effluent samples: P was above the permit limit (5 mg/l) during five days, and BOD was over the permit limit (60 mg/l) during four days.

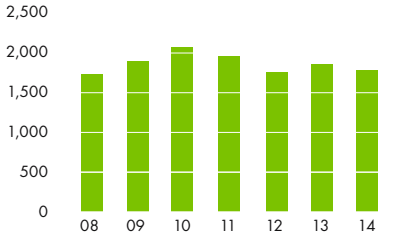
In both cases authorities were informed and corrective actions taken. None of the non-compliant discharges posed any potential risk of damage to the environment.

No other exceedances related to legal requirements for wastewater occurred in 2014.

Because of the high phosphorus content of eucalyptus raw material, the internal target for phosphorus load in the final effluent was exceeded in seven months. Phosphorus discharge is expected to lower during 2015, after a new system for removing phosphorus from raw effluent is implemented.

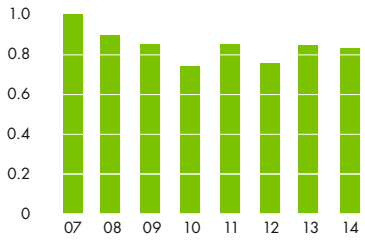
NITROGEN OXIDES, NO_x

t/a (measured as NO_2)



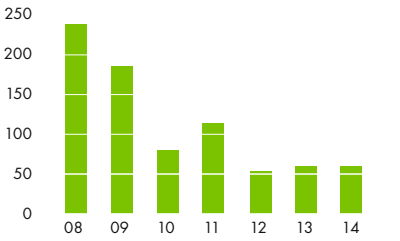
EVOLUTION OF FUEL OIL CONSUMPTION

(tons, relative to 2007)



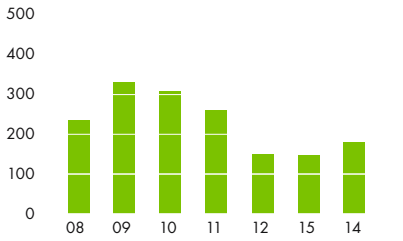
SULPHUR DIOXIDE, SO_2

t/a



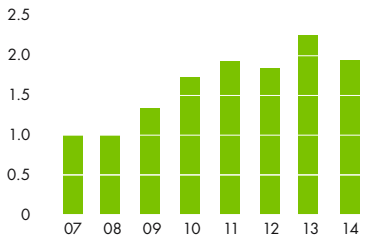
BIOLOGICAL OXYGEN DEMAND, BOD_5

t/a



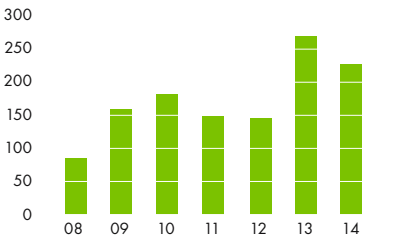
EVOLUTION OF ELECTRICITY SUPPLIED TO THE NATIONAL GRID

(GWh, relative to 2007)



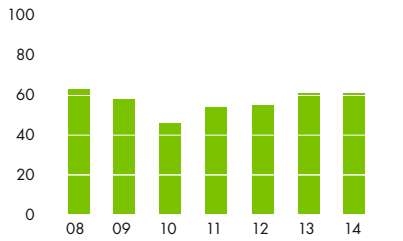
DUST

t/a



NITROGEN (INORGANIC), N

t/a



Water quality monitoring results show that there is no significant variation between the sampling points located upstream and downstream from the mill that could be caused by its operation. Variation in time is similar in all sampling points, either reference points or near receptors of the mill's effluents.

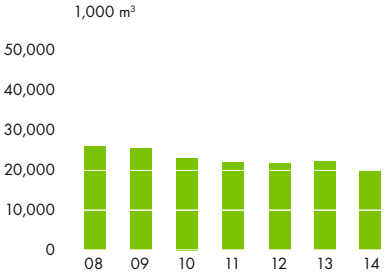
Fish monitoring results continue to show that the amount of different fish species found after the start-up of the mill is at the same level found during the baseline studies, and the situation is the same at all three study areas, either upstream or downstream from the mill. The condition of fish caught has been observed to be good without any macroscopic deformities or abnormalities. There are no differences in the general condition of fish caught from the different study areas.

The fish bile investigations indicate that the concentrations of chlorophenolic compounds and phytosterols are within the variation limits as observed during the baseline studies and there are no indications of changes in the concentration levels caused by the effluent discharged from the UPM pulp mill or any other sources.

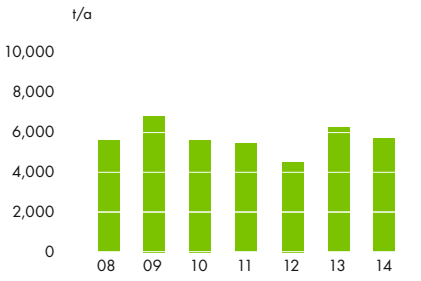
Muscle concentrations of dioxins, furans and PCBs were below the Total Daily Intake recommendations and, based on the observed concentrations and international recommendations there would be no limitations to human consumption of the studied fish.

The results indicate that the effluent discharge from the UPM Fray Bentos mill has not caused any impacts on the fish community and species diversity, or on the exposure level of fish, as compared to the situation prior to the mill operation.

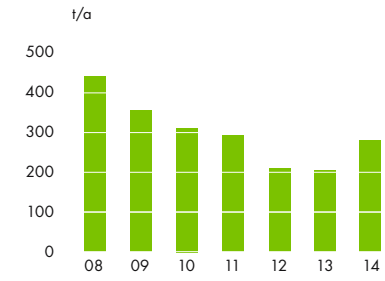
EFFLUENT FLOW (PROCESS WASTEWATER)



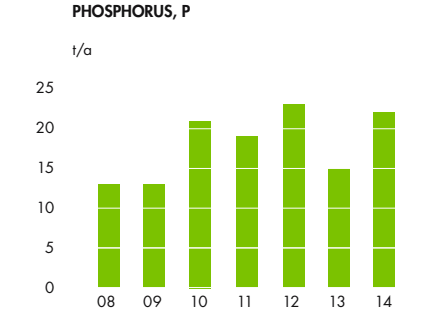
CHEMICAL OXYGEN DEMAND, COD



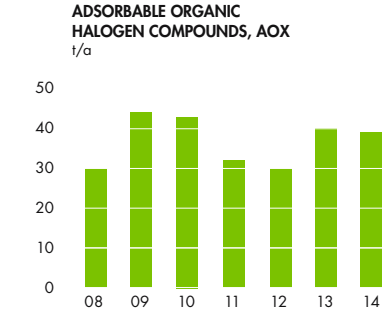
TOTAL SUSPENDED SOLIDS, TSS



PHOSPHORUS, P



ADSORBABLE ORGANIC HALOGEN COMPOUNDS, AOX



Waste

The UPM Fray Bentos landfill site is located inside the mill complex. In 2014 the landfill received 61,000 t of waste (on wet basis).

The design of the second stage of the landfill was reviewed during 2014, with no significant modifications to the original project. Construction will proceed during the first half of 2015 and as a result, the landfill area will roughly double.

Green liquor dregs constitute near 90% (on wet basis) of the total amount of solid waste bound for the landfill site.

Wood waste (mainly bark and wood fines) continues to be returned to plantations for soil improvement as well as sludge from the primary clarifier. However, in 2014 about one third of the wood waste (on wet basis) was used as a biofuel for electricity generation in external facilities.

Secondary sludge, i.e. excess biosludge from the activated sludge system, is burned in the recovery boiler by mixing it with the black liquor.

The generation of hazardous waste in 2014 amounted to 90 t, of which two thirds correspond to filtration cake from the production of sodium chlorate, spent batteries from electrical rooms, and used lubricating oils.

SOLID WASTE TO INDUSTRIAL LANDFILL

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	Pulp	1,300,000 t
Raw materials and additives	Wood Pulping and bleaching chemicals	See UPM Corporate Environmental Statement for more information
Energy	Biogenic fuels Fossil fuels	94% 6%
Emissions to air	Carbon dioxide, CO_2 (fossil) Nitrogen oxides, NO_x Sulphur dioxide, SO_2 Dust Total reduced sulphur, TRS	135,000 t 1,780 t 59 t 230 t 8 t
Water intake	Process and cooling water	26,600,000 m^3
Discharges to water	Process waste water Process waste water quality indicators – Biological oxygen demand, BOD_5 – Chemical oxygen demand, COD – Suspended solids, TSS – Nitrogen, N (total) – Phosphorus, P (total) – Adsorbable organic halogen compounds, AOX	19,900,000 m^3 180 t 5,710 t 280 t 61 t 22 t 39 t
Waste	Waste to industrial landfill* Green liquor dregs Water treatment sludge Other Waste recycled* Wood and bark waste Primary sludge (fiber sludge) Others Domestic waste* (to landfill) Hazardous waste	 25,000 t 1,400 t 1,400 t 70,300 t 6,000 t 290 t 340 t 90 t
Size of mill area		500 ha

** Dry weight*

Environmental objectives

Among the objectives set for 2015, the following can be highlighted:
– Continue transparent and effective communication of environmental issues to all stakeholders.
– Comply with laws, local permits and other external commitments subscribed by the mill.
– Ensure continued compliance of requirements set in the Ministry Resolution 1334/2013, which granted authorization to increase annual production.
– Contribute to UPM's corporate commitment to environmental responsibility, including implementation of Clean Run campaign and compliance of corporate targets for 2015.
– Promote environmental awareness within the mill, its main suppliers and partners, and all subcontractors working in mill area.
– Comply with the key environmental indicators defined for 2015 (see below).

Performance against targets in 2014

	TARGET	PERFORMANCE
COD discharge to the river (annual average)	≤ 5 Kg/ADT	achieved
Effluent discharge to the river (annual average)	≤ 20 m^3/ADT	achieved
Total phosphorus discharge to the river (monthly average)	≤ 60 Kg/d	not achieved: over target in 7 months
Availability of strong odorous gases handling (annual average)	≥ 99.9%	achieved
Availability of mild odorous gases handling (annual average)	≥ 99.5%	achieved
Amount of permit exceedances	None	not achieved: 2 events

Current targets

	TARGET
COD discharge to the river (annual average)	≤ 5 Kg/ADT
Effluent discharge to the river (annual average)	≤ 20 m^3/ADT
Total phosphorus discharge to the river (monthly average)	≤ 60 Kg/d
Availability of strong odorous gases handling (annual average)	≥ 99.9%
Availability of mild odorous gases handling (annual average)	≥ 99.5%
Amount of permit exceedences	None

EMAS
Verified environmental management
REG.NO. FI - 000058

VALIDATION STATEMENT

As an accredited environmental verifier (FI-V-0001), Inspecta Sertifiointi Oy has examined the environmental management system and the information of UPM Fray Bentos Environmental Performance 2014 report and of UPM Corporate Environmental statement 2014. On the basis of this examination, the environmental verifier has herewith confirmed on 2015-03-30 that the environmental management system, this UPM Fray Bentos Environmental Performance report and the information concerning UPM Fray Bentos of UPM Corporate Environmental statement are in compliance with the requirements of the EMAS Regulation (EC) No 1221/2009.

Fray Bentos Mill
Ruta Puente Puerto Km. 307
65.000 Fray Bentos
Tel. +598 456 20100

For further information, please contact:
Gervasio Gonzalez
Environmental Manager
Tel. +598 99 789 400
gervasio.gonzalez@upm.com

Matias Martinez
Communications Manager
Tel. +598 99 371 339
matias.martinez@upm.com

UPM

www.upm.com

UPM Fine, 140 g/m². Printed 06/2015.