

ENVIRONMENTAL performance in 2014



UPM Kymi



The UPM Kymi mill is located in Kouvola, by the river Kymijoki.

UPM Kymi

The UPM Kymi mill in Kuusankoski, Kouvola, Finland consists of a paper and pulp mill. The Kymi production plants form a modern integrated mill site that produces coated and uncoated fine paper and bleached birch and softwood pulp.

In 2014, Kymi employed approximately 650 people.

The paper mill is divided into two production units. Paper machine 8 and the coater form a production line that produces coated fine paper. The high-quality printing paper is delivered in reels and sheets. Paper machine 9 produces uncoated fine paper on reels and in sheets to be used as printing paper, forms and envelopes as well as copier/printer paper.

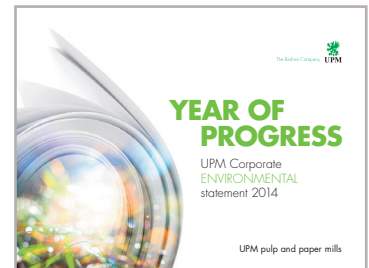
The pulp mill's two fibre lines produce bleached softwood and birch pulp. A sawdust digester is used to cook sawdust pulp that is added to the birch pulp. The majority of the pulp is currently used at the paper mill, but the amount of pulp sold to external customers is growing.

The production plants receive the heat energy and most of the electricity they need from the pulp mill's energy production and Kymin Voima Oy's biofuel power plant located on the mill site. Schaefer Kalk Finland Oy's PCC plant is also located on the mill site.

Kymin Voima Oy's biofuel power plant and the PCC plant are not included in the scope of this report.

| | |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Production capacity | 830,000 t Coated and uncoated fine paper 530,000 t Birch and pine pulp |
| Personnel | 650 |
| Products | Fine papers: UPM Finesse, UPM Fine, UPM PreLaser, UPM PrePersonal, UPM Form, UPM Letter, UPM Office, Future, Yes, KymLux, UPM Digi Laser, UPM Digi Finesse, UPM Jetlabel, UPM Vellum Pulp: UPM Betula, UPM Conifer Thermal energy and electricity |
| Residues | Tall oil, turpentine |
| Certificates | ISO 9001 – Quality Management System Standard ISO 14001 – Environmental Management System Standard OHSAS 18001 – Occupational Health and Safety System Standard EMAS – EU Eco-Management and Audit Scheme PEFC™ - Programme for the Endorsement of Forest Certification FSC® - Forest Stewardship Council® All certificates can be found from UPM's Certificate Finder (available at www.upm.com/responsibility) |
| Environmental labels | EU Ecolabel: UPM Finesse, UPM Fine, UPM PreLaser, UPM PrePersonal, UPM Form, UPM Letter, UPM Office, Future, Yes, KymLux, UPM Digi Laser, UPM Digi Finesse UPM pulp products have the approval for use in EU Ecolabel and Nordic Ecolabel paper products. |

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 € 10 billion. UPM shares are listed on NASDAQ OMX Helsinki. UPM – The Biofore Company – www.upm.com



UPM Kymi Environmental Performance 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.



For more information on PEFC products, please visit www.pefc.fi
For more information on FSC products, please visit <http://fi.fsc.org>



Environmental year 2014

In paper products, the market situation clearly improved from the previous year in 2014. The order books and utilisation rates of Kymi paper mill were good, and the pulp mill reached a new annual production record. The volume of pulp sold to third parties continued to grow in 2014.

Environmental protection obligations of the Kymi mill site were systematically covered in compliance with the environmental permit. All mill emissions complied with the permit conditions.

We were able to reduce our environmental load to some extent. The integrated mill site's environmental objectives included complying with the Clean Run programme that started in 2011, improving environmental awareness among the employees, reducing abnormal emissions, decreasing water consumption and solid losses, as well as increasing the reuse of process waste.

The Clean Run programme was part of the Kymi mill site's normal operations in

2014. All abnormal emissions were recorded with the Clean Run tool and their underlying causes were studied. The Kymi mill site has not exceeded any of its environmental permit limit values since the launch of Clean Run. An environmental review was arranged once a week during the pulp and paper mill morning meeting to review environmental issues and events of the previous week in more detail.

Environmental training was arranged for Kymi mill employees in the autumn of 2014. The theme of the training was hazardous waste and approximately 30 members of supervisory and planning staff took part in it.

One piece of stakeholder feedback was received in 2014. The feedback concerned an unpleasant odour caused by malodorous gases released into the surrounding area due to a device malfunction.

An investment decision concerning renovation and development projects of the Kymi

pulp mill was made in February 2014. The investments include a new debarking plant, a new pulp drying machine and elimination of bottlenecks that have prevented an increase of the pine production line's production volume. The investments will be concluded and the new systems will be commissioned by the end of 2015. These investment projects have already been taken into account in the current environmental permit.

In 2014, the Kymi mill site continued a waste reuse development project that was started in 2013 in cooperation with an external partner. The project aims at improving reuse rate of the mill's process waste in preparation of the ban on taking organic waste to landfills that will enter into force in the beginning of 2016. The project will continue in 2015.

The environmental investments of 2014 included an increase of effluent cooling capacity to improve reliability of the wastewater treatment plant.




Markku Laaksonen
General Manager


Päivi Hyvärinen
Environmental Manager

Air

The mill met all environmental permit limits for air emissions. The total amount of gaseous sulphur emissions and malodorous sulphur compounds clearly decreased from the previous year as a result of steady operation of the recovery plant.

Total NO_x emissions slightly increased from the previous year due to high production levels. However, NO_x emissions per one tonne of pulp decreased by around 3% year-on-year.

99.4% of weak malodorous gases and 100% of strong malodorous gases were recovered and burned.

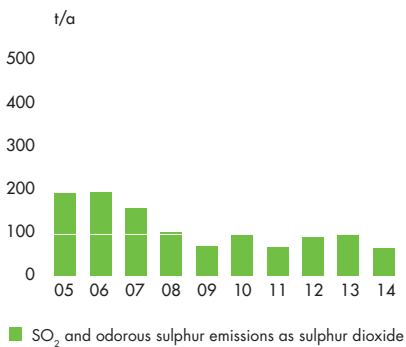
TRS emissions at the Kouvola City Environmental Services' measuring station in downtown Kuusankoski remained very low. The average hourly content did not exceed 5 micrograms/m³ during any of the hours in 2014.

In 2014, CO₂ emissions decreased from the previous year due to the high utiliza-

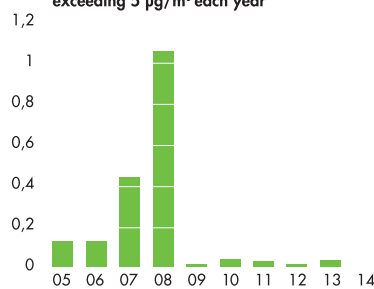
tion rate of the pulp mill, as well as the fact that the soda recovery boiler's burner did not have to be used to generate natural gas for the paper mill and the annual utilisation rate of Kymin Voima was higher than during the previous years. The amount of carbon dioxide captured in PCC was no longer deducted from the CO₂ figures in 2014.

The pulp mill's air emissions complied with the BAT ref 2014 document in all respects.

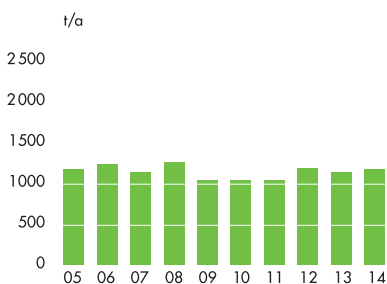
SULPHUR DIOXIDE, SO₂ (*



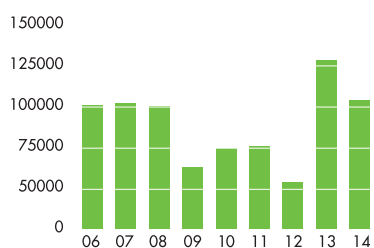
Percentual share of hourly average TRS values exceeding 5 µg/m³ each year



NITROGEN OXIDES, NO_x (*



**FOSSIL CARBON DIOXIDE
*PCC-related carbon dioxide decreased**



* Includes Kymin Voima Oy's emissions with regard to the energy consumed by Kymi.

Waste

The total amount of waste for 2014 was approximately 22,200 tonnes, of which approximately 7000 tonnes was taken to landfill (the municipal landfill and Lamminmäki landfill). In 2014, 6742 tonnes of waste (as dry matter) was taken to the Lamminmäki landfill, which means that the amount of waste taken to the landfill was reduced by around 15% year-on-year.

The amount of green liquor dregs reduced from the previous year, particularly as more than 2800 tonnes of green liquor dregs was used in structures needed when closing down Sulento landfill. Nevertheless, green liquor dregs produced in the recovery process still formed the most significant waste component taken to the Lamminmäki landfill. No continuous solution has been found for the recycling of green liquor dregs, but one of the mill's key objectives is to find permanent recycling options in the future.

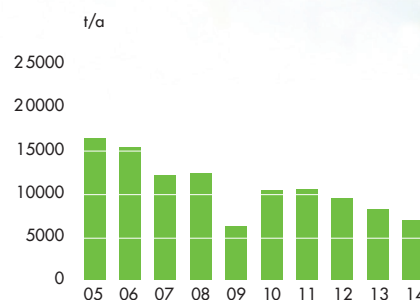
Around 5700 tonnes of ash was reused in 2014. As before, ash created during the generation of bioenergy was delivered for granulation, after which it was applied to forests owned by UPM. The idea is to recycle nutrients brought to the mill in the wood back into the forest. Other reuse applications in 2014 included construction of noise barriers and the structures needed when closing down the landfill. In addition, a small amount of ash was stored at the Kymi mill area in 2014.

Around 2000 tonnes of bark and wood waste was delivered to be reused as culture medium raw material in 2014.

Ash taken into intermediate storage in 2013 was used in 2014 to construct noise barriers and the structures needed when closing down the landfill.

** Includes Kymi Voima Oy's ash corresponding to the energy used by Kymi

SOLID WASTE TO LANDFILL ** (dry weight)



Environmental Specialist Maija Heikkinen of the Finnish Forest Industries Federation visited the Kymi mill site in the summer to understand everyday life at the mill and find out how environmental issues are managed there. Ms Heikkinen looked at the sorting of waste, and measures to improve the sorting process will be taken in the future.



In paper products, the market situation clearly improved from the previous year in 2014. The photo shows a large sheet conveyor at the Kymi paper mill.

Water

Performance of the biological treatment plant was good. The reduction levels indicating the efficiency of the treatment plant were 99% for biological oxygen demand (BOD) and 72% for chemical oxygen demand (COD). The solids reduction rate was 95%. The effluent load to the river remained below all the environmental permit limits throughout the year.

The effluent volume remained at almost the same level as in previous years. COD and AOX loads (t/d) increased from the previous year because the mill attempted to optimise the quality of pulp by modifying the process conditions during the cooking of pulp. These changes increased the volume of chlorine dioxide used in bleaching from the previous year,

which also increased the COD load to the wastewater treatment plant.

The nitrogen and phosphorus load were lower than during the previous year.

The paper mill's solids losses decreased by more than 10% year-on-year. The paper mill's improved order book and utilisation rate decreased the solids losses. The objective is to further decrease the amount of solids being released from the paper mill to the treatment plant.

In 2014, the Kymi mill site used a total of 82 million m³ of water. The water consumption increased year-on-year because the production volumes clearly increased. Specific effluent consumption per tonne of

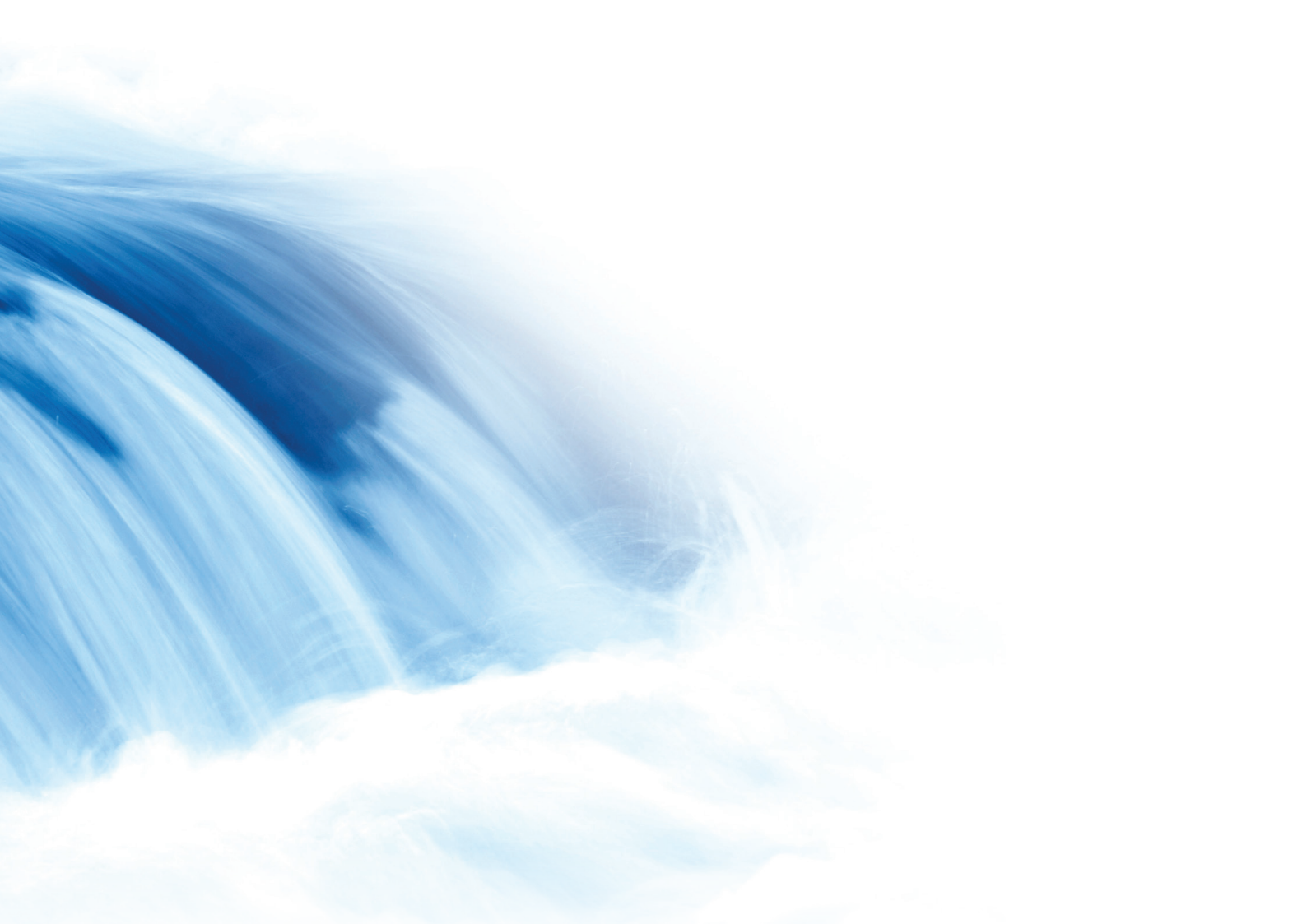
paper produced remained at almost the same level as in the previous year.

Whereas the pulp mill's water consumption per one tonne of pulp produced slightly decreased year-on-year. The mill's internal goals of less than 10 m³ per one tonne of paper and less than 45 million litres per one tonne of pulp were not reached, however. Nevertheless, the results achieved by both the pulp and the paper mill remain below the upper effluent limit of the BAT (Best Available Techniques) reference.

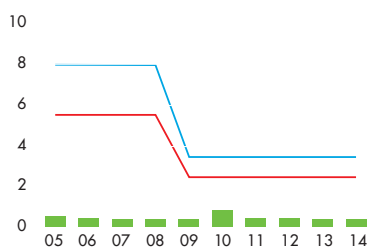
In summary, the effluent load of the pulp and paper mill remained at or below the BAT reference limit throughout the year 2014.



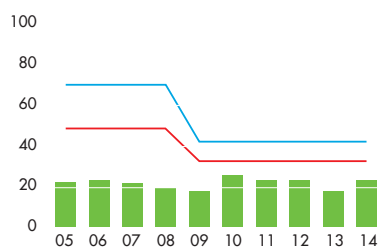
Jarmo Simonen is taking a water sample at the waste water treatment plant.



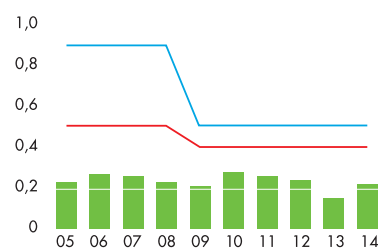
**EFFLUENT LOAD
BIOLOGICAL OXYGEN DEMAND, BOD,
t/d**



**EFFLUENT LOAD
CHEMICAL OXYGEN DEMAND, COD
t/d**

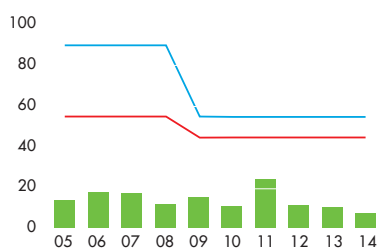


**EFFLUENT LOAD
ORGANIC CHLORINE COMPOUNDS
t/d**



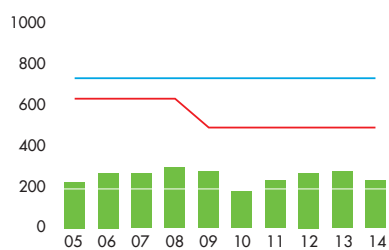
EFFLUENT LOAD, PHOSPHORUS, P

kg/d



EFFLUENT LOAD, NITROGEN, N

kg/d



— Permit limit, monthly mean value

— Permit limit, annual mean value

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 | Coated and uncoated fine paper | 830,000 t |
| | Pulp | 530,000 t |
| Raw materials | Wood Purchased pulp Chemicals | Please see the UPM Corporate Environmental Statement for information |
| Energy | Biofuels Fossil fuels | Biofuels 88% Fossil fuels 14% (includes natural gas used for drying in the paper machine) |
| Emissions to air | Sulphur dioxide, SO ₂ | 70,1 t (SO ₂ and malodorous sulphur emissions as sulphur dioxide) |
| | Nitrogen oxides, NO _x | 1,179 t |
| | Carbon dioxide, CO ₂ (fossil) | 117,410 t |
| | Particulates | 19 t |
| Water intake | Process and cooling water | 82,085,603 m ³ |
| Discharges to water | Cooling water | 46,045,676 m ³ |
| | Effluent volume | 36,039,927 m ³ |
| | Chemical oxygen demand, COD _{Cr} | 8,179 t |
| | Biological oxygen demand, BOD ₇ | 81.6 t |
| | Adsorbable organic halogen compounds, AOX | 82.2 t |
| | Phosphorus, P | 2.59 t |
| | Nitrogen, N | 86.64 t |
| Waste | Waste to landfill (as dry matter): | |
| | Green liquor dregs | 6,386 t |
| | Mixed waste | 612 t |
| | Domestic waste | 17 t |
| | Recycled waste (as dry matter): | |
| | Slurries | 12,382 t |
| | Ash | 5,687 t |
| | Green liquor dregs | 2,859 t |
| | Bark and wood waste | 2,007 t |
| | Cores and wrapping | 2,859 t |
| | Waste paper and cardboard | 58 t |
| | Metal | 1,231 t |
| | Combustible waste | 256 t |
| | Roofing felt | 69 t |
| | Concrete waste | 117 t |
| | Domestic waste | 5 t |
| | Temporarily stored waste intended for reuse (as dry matter): | |
| Ash | 80 t | |
| Hazardous waste | 65 t | |
| Size of mill area | | 250 ha |

The figures include Kymen Voima Oy's waste and emissions with regard to the energy consumed by Kymi.

Performance against targets in 2014

| TARGET(S) | ACHIEVEMENT | COMMENTS |
|----------------------------------------------------------------------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Reducing abnormal emissions Classes 3 to 5: 0 cases | Yes | None of the permit limits were exceeded. |
| Efficient flow of information and use of the Clean Run programme | Yes | Calibration of internal alarm limits and processing of notifications in morning meetings. Verifying that internal alarm limits are up to date. |
| Processing time of Clean Run notifications less than 3 months | Yes | |
| Increasing the percentage of waste reuse: in 2013 was increased to around 20% | No | The reuse percentage of around 10% |
| Finding a reuse for green liquor dregs | Yes | Green liquor dregs have been reused in the closing of the Sulento landfill. |
| Reducing water consumption | No | Not achieved at the pulp and paper mill. |
| Decreasing the paper mill's solids losses | Yes | The solids losses were decreased by more than 10% year-on-year. |
| AOX load in outgoing fraction less than 0.17 kg/t | Yes | The AOX load remained below the target level. It has not been possible to increase the cooking 'kappa number yet. |



The defects in chemical unloading site markings observed during the environmental audit were eliminated. Instructions were added to boxes below the tables in addition to the instructions on the instruction bulletin board. The photo shows Mr Jouni Nuutila at the paper mill, checking the contents of boxes.

Current targets / Environmental targets 2015

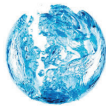
| OBJECTIVES AND INDICATORS | SCHEDULE | UNITS' RESPONSIBILITIES |
|----------------------------------------------------------------------------------------------------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Minimising environmental non-conformances Classes 3 to 5: 0 cases | in 2015 | Treatment plant was operated without interruptions. Control of air emissions. |
| Efficient use of the Clean Run programme | | Verifying that internal alarm limits are up to date, communication, as well as processing of Clean Run notifications and flashes in morning meetings. |
| Processing time of Clean Run notifications less than 3 months | | Systematically reviewed in morning meetings. |
| Increasing the reuse of waste – Objective: increasing the utilisation rate by 15% from the level of 2014 | in 2015 | Co-operation with external operators. Improving waste sorting. |
| 0 tonnes of waste containing more than 10% of organic material delivered to the landfill | As of 2016 | Finding reuse applications/waste applications by the end of 2015. Verifying functional sorting of waste. |
| Finding a reuse application for green liquor dregs | in 2015 | New test run at Kymin Voima or another reuse application. |
| Reducing water consumption | in 2015 | Pulp mill less than 45 m ³ /t. Ensuring sufficient cooling capacity and reducing water consumption of bleaching lines. Drafting a water balance and optimising pulp mill washing. Paper mill less than 10 m ³ /t. |
| Reducing solid losses | in 2015 | Paper mill less than 10 kg/t. Maintaining the level already achieved |
| AOX load in outgoing fraction less than 0.17 kg/t | in 2015 | After increasing birch line's cooking kappa number. |



VALIDATION STATEMENT

As an accredited environmental verifier (FI-V-0001), Inspecta Sertifiointi Oy has examined the environmental management system and the information of UPM Kymi Environmental Performance 2014 report and of UPM Corporate Environmental statement 2014. On the basis of this examination, the environmental verifier has herewith confirmed on 2015-04-01 that the environmental management system, this UPM Kymi Environmental Performance report and the information concerning UPM Kymi of UPM Corporate Environmental statement are in compliance with the requirements of the EMAS Regulation (EC) No 1221/2009.

**MORE WITH
BIOFORE**



UPM leads the integration of bio and forest industries into a sustainable future characterised by innovation, responsibility and resource efficiency. www.upm.com

UPM Kymi

Selluntie 1
FI-45700 Kuusankoski,
Finland
Tel. +358 2041 5121

Further information

info.kymi@upm.com

Päivi Hyvärinen
Environmental Manager
Tel. +358 2041 52514
paivi.hyvarinen@upm.com

Teija Ahola
Environmental Technician
Tel. +358 2041 52923
teija.s.ahola@upm.com

Irma Niemi
Communications Manager
Tel. +358 2041 52173
irma.niemi@upm.com



www.upm.com