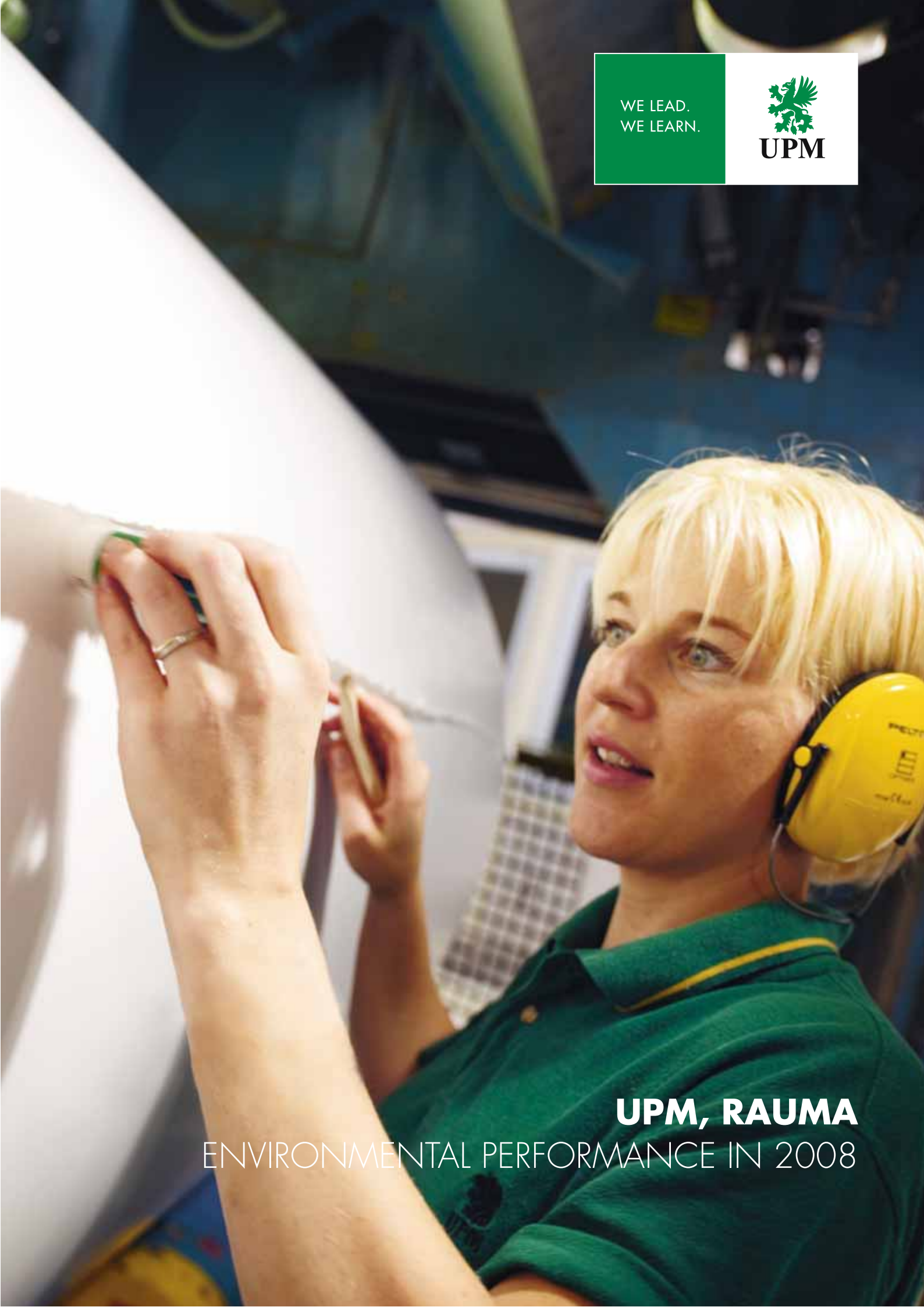


WE LEAD.
WE LEARN.

UPM

UPM, RAUMA

ENVIRONMENTAL PERFORMANCE IN 2008

UPM, Rauma

Production capacity
- 1,280,000 tonnes of paper
- 150,000 tonnes of fluff pulp

Personnel
- 850

Products
- uncoated magazine papers
  UPM Max
  UPM Cat
- coated magazine papers
  UPM Star
  UPM Ultra
  UPM Cote
  UPM Satin
- fluff pulp

Certificates
- Quality Management System ISO 9001
- Environmental Management System ISO 14001
- Occupational Health and Safety Management System OHSAS 18001
- EMAS Environmental Management System
- PEFC label

PEFC

PEFC/02-33-46

Promoting sustainable forest management (Programme for the Endorsement of Forest Certification schemes)

For more info: www.pefc.org

- FSC label (Forest Stewardship Council)

FSC

The Independent Assurance For Responsible Forest Management

SGS-COC-2237

The FSC logo indicates that a product has been sourced from a well-managed forest certified according to the Forest Stewardship Council rules.

FSC Trademark © 1996 FSC A.C. (FSC-SECR-0156)

EU Eco-label

www.eco-label.com

European Eco-label (EU Flower) for copying and graphic papers.

UPM in Rauma

UPM's Rauma mill is located by the sea on the west coast of Finland near the centre of the city of Rauma.

The Rauma mill has four paper machine lines, a fluff pulp line, a twin-line debarking plant, two grinderies, three TMP plants, a surface water treatment plant, a biological effluent treatment plant and a landfill site for industrial waste.

The paper machines manufacture magazine papers – two of them supercalendered (SC) paper and the other two lightweight coated (LWC) paper. The papers made in Rauma are used to print magazines, sales catalogues and various kinds of advertising products. Besides paper, the mill produces fluff pulp for the manufacture of hygiene products.

Looking after the environment is part of everyday work at the mill. The products, production processes and activities of the mill are developed with the aim of minimizing environmental impacts.

The mill keeps its personnel, local residents, customers and other stakeholders well informed of environmental issues. The mill also works with other industrial companies in the area to strengthen environmental know-how and raise the standard of environmental protection.

Also located on the UPM mill site is Rauman Voima Oy's biofuel power plant, which procures operation, maintenance and environmental services from UPM. The operations of Rauman Voima Oy are not included in this EMAS report.

The mill site also houses Botnia's pulp mill and Forchem's tall oil refinery. UPM delivers raw and chemically treated water to the site, and is responsible for the joint treatment of industrial and municipal waste waters. The companies collaborate closely in energy production.

UPM, Rauma Environmental Performance in 2008, together with the joint Environmental Report 2008 of the UPM paper and pulp mills, form the mill's environmental statement. The Environmental Report of the UPM paper and pulp mills is available at www.upm-kymmene.com. The Rauma mill's next environmental supplement will be published in the spring of 2010.

Caring for our environment in 2008

In 2008, the Rauma paper mill paid special attention to increasing its productivity and improving practices. Owing to the tough market conditions, the mill's production had to be reduced and the production volume was down from the previous year.

Under normal circumstances, the mill's processes and environmental issues were kept under control, and environmental loads remained within permit limits. There were no significant expressions of concern from stakeholders over environmental management.

- In October, when the production status of the pulp and paper mill was normal, a hole was discovered in a partition inside the aeration basin of the effluent treatment plant. As a result, some of the effluent was not treated fully. Production was restricted immediately and corrective action was taken. A joint action plan was drawn up between the pulp and paper mill, the city of Rauma and authorities to minimize emissions. The city began the treatment of its effluents at a treatment plant which under normal conditions is not in operation. Due to the damaged partition, the load to water bodies increased substantially and the permit limit was exceeded for oxygen-consuming material. The incident did not have immediate impacts on water bodies.
- In October, the driver of a truck transporting chemicals began to unload the cargo to the wrong tank. The mistake was noticed and the unloading was stopped. To prevent any damage, the cooling of the tank was started. The rescue services were also called to the site as a precaution. The mixture of acids in the tank was taken from the mill site for final treatment. Corrective measures to prevent or manage such exceptional situations in the future as well were discussed at the mill. An inspection and repair plan was drawn up to ensure the operation of the effluent treatment plant. The need to lock valves for unloading chemicals was looked into, and locks were installed in the most important places.

An environmental impact assessment procedure was initiated in Rauma to assess the environmental impact of a potential plant that would produce diesel fuel from biomass.

Continuous improvement – Enhancing the efficiency of operations

The mill's processes and operations are constantly being developed, personnel and partners trained and risks to the environment minimized. Our operations are evaluated by the environmental authorities and independent external environmental experts. A safety report has been prepared for the Rauma mill, and it continues to be improved. The mill works in co-operation with various parties at the regional level.

We participate in drawing up regional environmental programmes, analysing the status of waters as required by the Water Framework Directive and planning action programmes.

UPM is harmonizing and improving the model for chemicals and risk management.

The EU eco-label has been awarded to the whole production of the paper mill. The label shows that the product has been manufactured saving energy and water, minimizing the amount of waste, favouring renewable natural resources and using as environmentally friendly raw materials as possible. The EU eco-label is the only independent eco-label valid throughout Europe.

Kari Pasanen
General Manager

Seija Vatka
Environmental Manager

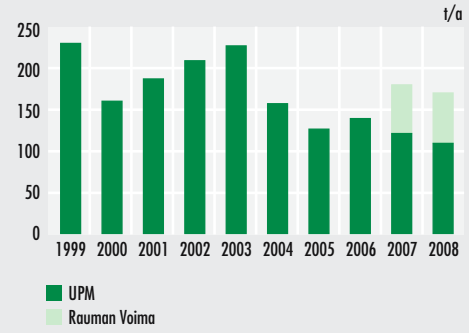
Air

The biofuel power plant of Rauman Voima Oy produces almost all of its energy with two biofuel boilers. The newer boiler was started up in the autumn of 2006. There is separate equipment for dust extraction of the flue gases and for reducing sulphur dioxide and nitrogen oxide emissions.

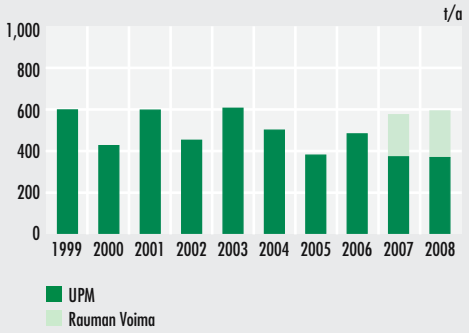
Most of the energy consumed by the paper mill is produced with renewable fuels, which translates into a reduction in the level of fossil carbon dioxide. The paper mill's fossil carbon dioxide emissions are caused by the liquefied petroleum gas used by the coating paper machines.

EMISSIONS TO AIR

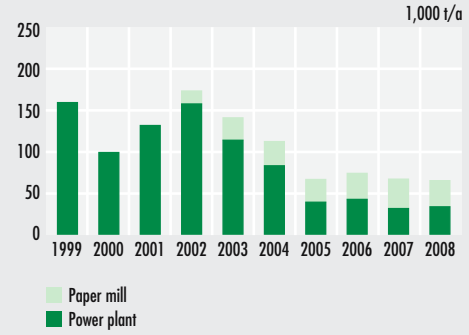
Sulphur dioxide, SO_2



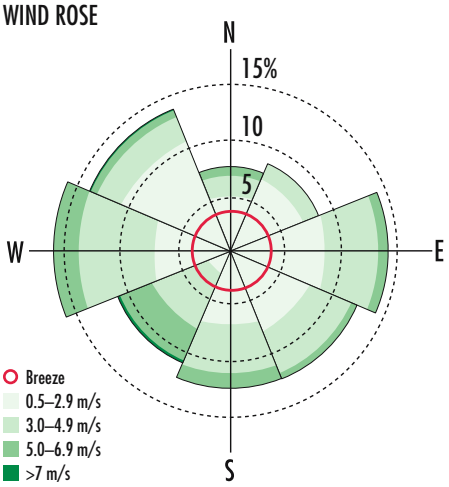
Nitrogen oxides, NO_2



Carbon dioxide from fossil fuels, CO_2



WIND ROSE



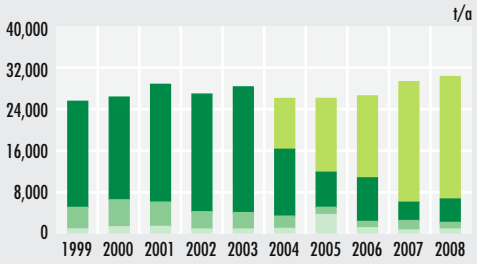
The wind rose shows from which direction the wind is blowing. Wind directions and speeds were measured at Sinisaari in Rauma in 2008. The measurement point is about 0.5 kilometre from the mill towards the city.

By-products and waste

The majority of solid waste can be reused, with the exception of household waste and power plant ash. Ash is generated at the Rauman Voima biofuel power plant, but UPM sees to the disposal of the ash in accordance with the mutual agreement. The disposal site is in compliance with the latest environmental requirements. Waste fractions are stored in dedicated areas, which enables their future reuse. In 2009, the aim is to continue using ash and other recycled materials from forest industry to close down the older part of the landfill.

New ways of reusing materials in earthworks are also being looked into. Ash is meant to replace other construction materials. The permit process is slow, and the target rate for reuse, 50 per cent, was not yet achieved.

BY-PRODUCTS AND WASTE



Ash was used in building the industrial landfill site of the city of Rauma and UPM. Coating clay was used in brick-making. The rest of the waste consists of metal and hazardous waste. Waste was calculated as dry weight.

Water

At the end of the year, the Supreme Administrative Court confirmed the permit to build the Narvijärvi submerged weir related to raw water acquisition. The processing of the environmental permit for the treatment and discharge of effluents continued in the Supreme Administrative Court.

The further development and success of co-treatment is monitored by an operational committee, where each of the contracting parties – UPM, Botnia and the city of Rauma – is represented.

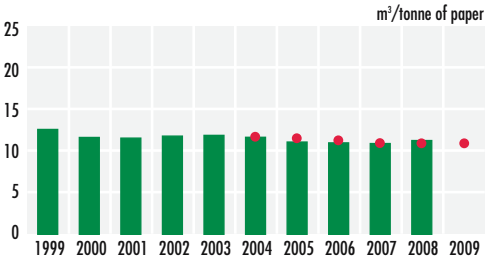
Annual total emissions were in compliance with BAT levels.

The breaking down of the treatment component in October can be seen on an annual basis in the increase of BOD and COD levels of oxygen-consuming material.

Achievement of objectives for 2008

The restriction of production and increase in shutdowns resulting from the drop in paper demand raised specific emissions.

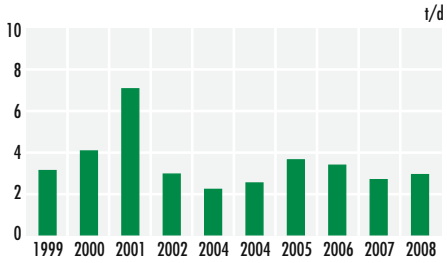
PROCESS WATER CONSUMPTION



The target value for BAT is 12–20 m³/t.

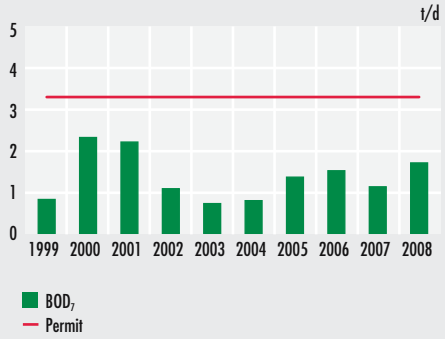
Water consumption remained on a good level, although the internal target was not achieved.

SUSPENDED SOLIDS TO THE SEA

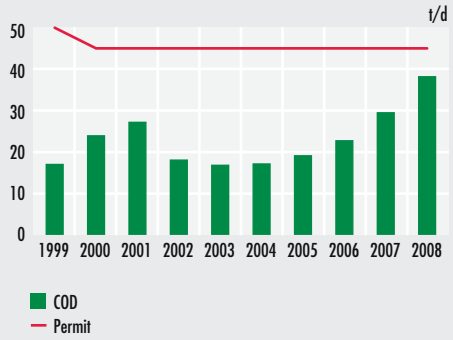


EFFLUENT LOAD

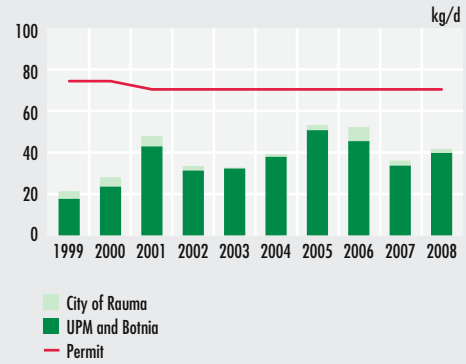
Biological oxygen demand



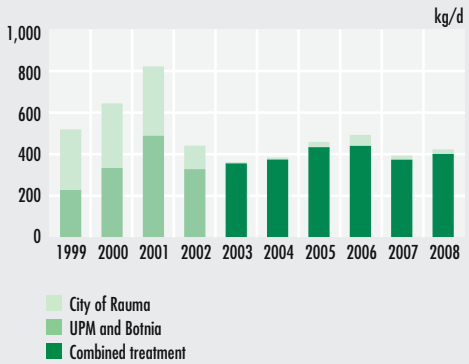
Chemical oxygen demand



Phosphorus



Nitrogen



Waste water emissions from the city of Rauma and Forchem's tall oil distillation plant are included in the forest industry's loadings from the year 2002 onwards.

The load to the sea and process water consumption have remained on a good level.

Material balance 2008

Raw materials

wood	1,500,000 m³
chemical pulp	159,000 t
fillers and coating pigments	353,000 t

Electricity 2,300,000 MWh

Fuels*

biogenic and recovered fuels	92%
fossil fuels	8%

Water 16,000,000 m³

chemical oxygen demand	700 t
biological oxygen demand	40 t
phosphorus	1 t

* *Fuels calculated as dry weight*

Emissions to air

sulphur dioxide (SO_2)	110 t
nitrogen oxides (NO_2)	370 t
fossil carbon dioxide, CO_2	250,000 t
particulates	10 t

Discharged to water

chemical oxygen demand	7,900 t
biological oxygen demand	300 t
phosphorus	8 t
effluent volume	14,000,000 m³
cooling water	470,000 m³

Main products

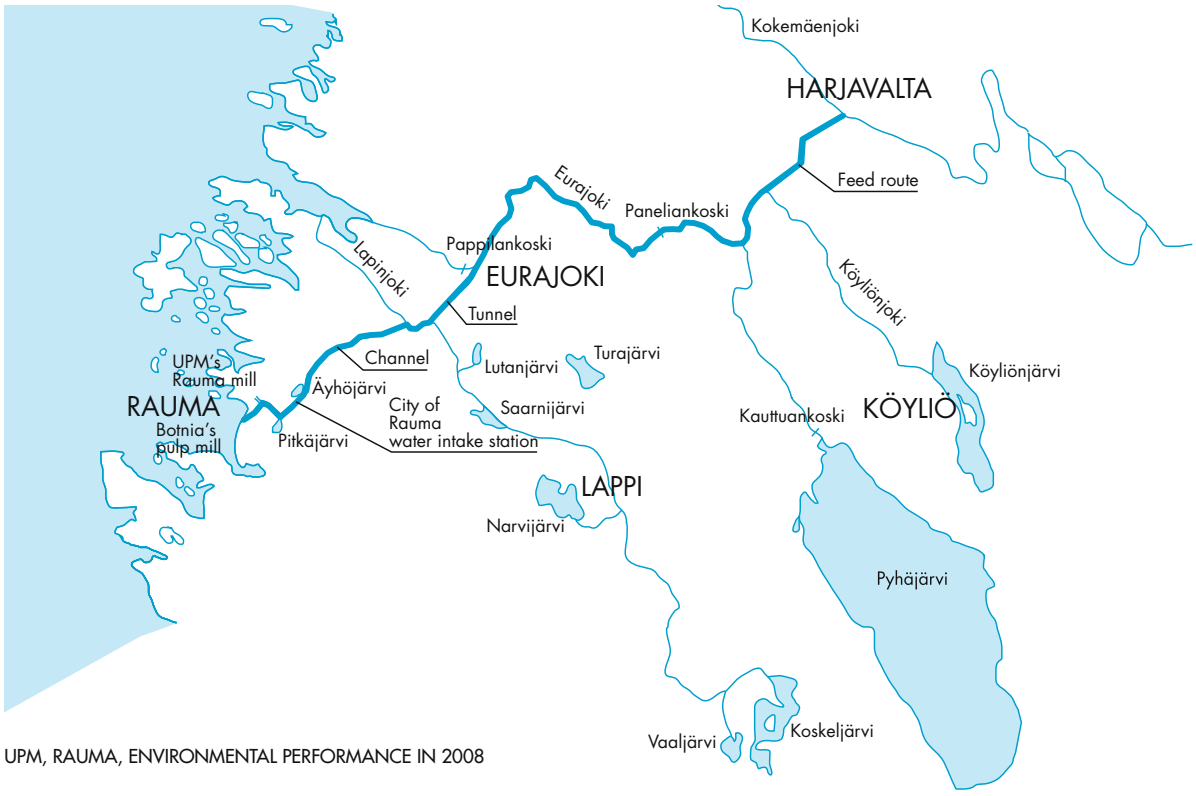
paper	1,100,000 t
fluff pulp	80,000 t

By-products and waste*

ash for stockpiling	15,000 t
for re-use	
ash	4,500 t
china clay	900 t
metal	700 t
recycled fibre	800 t
board	100 t
recycled plastics	20 t
for separate treatment	
hazardous waste	50 t
waste	
process waste	400 t
household waste	40 t

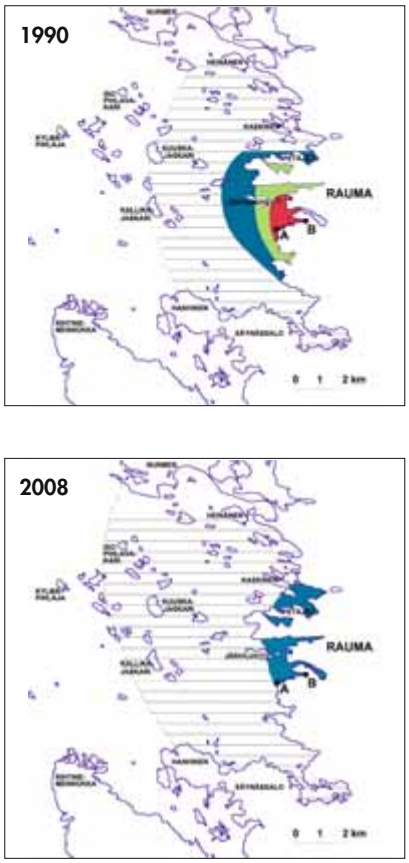
* *By-products calculated as dry weight*

WATER SUPPLY TO THE RAUMA AREA



State of the environment

Classification of surface water quality in the sea off Rauma based on samples taken and analyzed by the Water Protection Association of Southwestern Finland.



Water protection association of Southwestern Finland

- Excellent
- Good
- Satisfactory
- Fair
- Poor

A. Treatment plant of the City of Rauma
B. Treatment plant of the forest industry, where the waste waters of the city of Rauma have been treated since 2002.

The figures show the state of the sea off the Rauma mill.

The waste water loading from the forest industry and the joint treatment plant is now so low that the state of the sea water can no longer be significantly improved by making treatment more efficient.

Diffuse loadings from along the coast, mostly from agriculture, already have a greater eutrophic impact than waste waters. The sea area close to Rauma affected by background loading has expanded, which typically contributes to the eutrophication of shallow coastal areas with numerous islands.

These results can be read in Finnish in a publication of the Southwest Finland Regional Environment Centre, Miten voit, Selkämeri (How are you, Bothnian Sea?) and the regional programme of measures for water management.

Focus areas for environmental protection

The main environmental objectives for 2009 are

- Following through the environmental impact assessment procedure.
- Updating the noise propagation model.
- Ensuring the operation of the effluent treatment plant.
- Meeting the obligations of environmental permit decisions and updating control programmes.
- Reducing water consumption and solids losses.
- Enhancing energy efficiency.
- Finding more ways of reusing by-products, particularly ash.
  Target: ash reuse 50%.

Accredited verifier DNV Certification Oy/Ab (FI-V-0002) has audited the Environmental Management System of the UPM-Kymmene Corporation Rauma mill and the updated information for 2008 as well as the joint Environmental Report 2008 of UPM's paper and pulp mills. On the basis of this audit, it was stated on 20 March 2009 that the Environmental Management System and the Finnish EMAS Statement comply with the requirements of the EU's EMAS Regulation (EEC) No. 761/2001.

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