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CORPORATE RESPONSIBILITY REPORT 2004



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This is the third corporate responsibility report published by UPM. Previous to 2002, the Company published an environmental report for seven years. The Group publishes a separate Annual Report.

This report has been compiled applying the guidelines of the Global Reporting Initiative (GRI). UPM has undertaken to comply with the principles of the UN Global Compact Initiative. For a comparison of

the contents of this report and the GRI guidelines and the principles of the Global Compact, see page 55.

The report includes data principally on those production units and other functions in which UPM held an interest of more than 50 per cent throughout the year.

The data on environmental emissions is based on the reporting practice in the country and locality concerned.

## UPM's key figures

	2004	2003	2002
<b>FINANCIAL INFORMATION</b>			
Turnover, EUR million	9,820	9,787	10,417
Profit before tax, EUR million	639	352	803
Return on equity, %	13.1	4.4	6.8
Dividend per share (2004: Board's proposal)	0.75	0.75	0.75
Capital expenditure and acquisitions, EUR million	686	720	620
<b>PRODUCTION</b>			
Paper, 1,000 t	10,886	10,232	10,046
Sawn timber, 1,000 m <sup>3</sup>	2,409	2,408	2,201
Plywood, 1,000 m <sup>3</sup>	969	936	905
Chemical pulp, 1,000 t	2,243	2,027	2,102
<b>ENERGY AND RAW MATERIALS</b>			
Electricity procurement, TWh	19.9	20.0	20.0
– electricity sales, TWh	1.8	1.9	1.9
Wood consumption, 1,000 m <sup>3</sup>	26,700	26,310	26,340
Recovered paper consumption, 1,000 t	2,800	2,300	2,200
<b>ENVIRONMENT</b>			
Capital expenditure in environmental protection, EUR million	55	37	21
Operating expenditure relating to environmental protection, EUR million	112	109	113
Fossil fuel carbon dioxide emissions (CO <sub>2</sub> ), t	3,900,000	3,900,000	3,900,000
Wastewater chemical oxygen demand (COD), t	97,000	95,000	95,000
Solid waste:			
– to landfills, t	180,000	250,000	240,000
– hazardous waste for special treatment, t	3,700	3,600	3,800
<b>PERSONNEL</b>			
Personnel at year end	33,433	34,482	35,579
– Paper Divisions	19,107	19,326	19,762
– Converting Division	4,594	4,558	4,694
– Wood Products Division	6,851	7,711	7,577
Salaries and fees, EUR million	1,325	1,302	1,369
Pension expenses, EUR million	211	207	233
Training costs, EUR million	22	24	27
Average no. of days spent in training	2.3	2.6	2.7
Accident frequency, blue collar <sup>*)</sup>	43.4	49.4	49.0
Absences due to illness, blue collar, % of regular working hours	5.68	5.51	5.68
Personnel turnover, %	4.4	2.7	4.1
No. of man-days lost through strikes	14,700	6,300	800

<sup>\*)</sup> number of accidents having led to one or several days of incapacity for work per million working hours.

# CONTENTS

Foreword	2
Introduction to UPM	4
Managing corporate responsibility	6
Stakeholders	8
Economic responsibility	12
Products	16
Research and development	17
Raw materials	
Wood procurement and forest management	18
Other fibre raw materials	22
Energy	24
Chemicals and other purchased materials	27
Logistics	29
Environmental responsibility	
Water	30
Air	32
Soil	34
Personnel	36
Changshu fine paper mill	42
<b>Appendices</b>	
Policies	
Environmental Policy	46
Corporate Social Responsibility Policy	46
Human Resources Policy	48
Occupational Health and Safety Policy	49
Tables	
Production, emissions into water and air, landfill waste	50
Certified management systems	52
Material balance	53
Sources of wood, country of origin of imported wood, forest certification and forest certification schemes, origin of wood	54
Content comparison with Global Compact principles and GRI guidelines	55
Location of production plants and sales offices	56
Glossary	58
Contact persons	59
<b>UPM Case</b>	
Time Inc. evaluates its paper suppliers on a regular basis	11
Artificial snags shelter numerous species of beetle	20
Parallel field testing furthers forest certification	21
Pietarsaari pulp mill excellent in terms of energy efficiency	25
Comprehensive supplier audit piloted in Brazil	28
Wood Products Division launches relocation programme for those made redundant	39

## DEAR READER,

Owing to a prolonged recession, UPM's main concern in 2004 was to ensure its competitiveness.

During the year, we launched a number of projects to improve cost efficiency and create better long-term operating conditions. The most profound restructuring concerned UPM's Wood Products Division in Finland and the Miramichi mill in Canada. The implementation of the restructuring measures will put us into a better position to turn these units into competitive businesses. Although difficult decisions were required and the number of personnel had to be reduced, these decisions were necessary.

During the year, we carried out an extensive opinion survey that covered almost all our staff. Conducted at regular intervals, this survey is a strategic tool for developing the Group, as it tells us whether we are going in the right direction and whether the measures we have taken have brought any results. Two years ago, teamwork was chosen as a focal development area for the whole Group. It has been rewarding to see that this work has borne fruit and that things have progressed. We still want to continue our focus on teamwork, though, so it remains one of the Group's areas for improvement. Leadership, the provision of feedback and the implementation of the corporate values in day-to-day work also need to be addressed more closely. Action plans have already been made to ensure progress in these areas.

UPM wants to grow and have a strong presence in the expanding markets. China is growing faster than the rest of the world, and paper consumption is following the same trend. In 2002, we announced our decision to build a second production line at our Changshu paper mill. The construction work has progressed on schedule and the new fine paper line representing the latest technology will start up in summer 2005.

This investment will have multiple impacts on the surrounding society. The mill and its impacts are addressed in more detail in other parts of this report.

UPM's production processes require large amounts of energy: electricity and heat. The debate on climate change gained momentum during the year. UPM has long made efforts to reduce carbon dioxide emissions by increasing the use of energy production methods that do not give rise to fossil carbon dioxide emissions. We continued the construction of biofuel power plants and are committed to further increasing the energy efficiency of our mills. In order to secure a steady supply of electricity at a competitive price, we have decided to acquire a share in the new nuclear power plant to be built in Finland. The use of nuclear power does not cause any CO<sub>2</sub> emissions, so the investment will also contribute to the company's ability to manage its CO<sub>2</sub> balance.

There has also been a lively debate on the commercial use of forests, forest certification and the origin of wood. For its part, UPM has made efforts to actively develop its operations and to find constructive solutions. The Group is involved in several projects aimed at enhancing the biodiversity of commercial forests. As a major forest owner, we have been able to foster the multiple use of forests not only by participating in joint projects but also by implementing measures and conducting studies in our own forests.

There are currently more than 50 forest certification schemes worldwide, but only about 5 per cent of the world's forests are certified. The competition between the various schemes creates confusion in the marketplace. In order to assess the differences between the various certification schemes, we started parallel field testing in Canada, Finland and the UK in the summer of 2004. I'm convinced that the results will enable

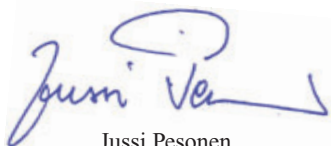
us to develop further our forestry and wood procurement operations worldwide and to promote the development of credible certification schemes.

Ethically acceptable practices that are in line with our corporate values will help us achieve our goal of being the most attractive company in the industry, as an employer, as a business partner and as an investment opportunity. During 2004, we paid special attention to corporate governance. We also developed our organisational structure and defined in more detail the responsibilities and obligations at each level of the organisation.

UPM has undertaken to comply with the UN Global Compact Initiative which, in 2004, saw the addition of a tenth principle: the promotion and adoption of initiatives to counter all forms of corruption, including extortion and bribery.

The fact that UPM was listed in the Dow Jones Sustainability Index as the sector leader is, in my opinion, recognition, that our operations are based on a sustainable foundation.

Our principles include open reporting on our operations. I hope that this third Corporate Responsibility Report gives a comprehensive picture of UPM's operating practices. We will be glad to use any feedback from you to develop the report further. Responsibility is part of day-to-day work within UPM, regardless of economic cycles. We want to continue to develop the Group profitably while taking responsibility for the social, ethical and environmental impact of our actions.



Jussi Pesonen  
President & CEO







# UPM – A STRONG AND DYNAMIC FOREST PRODUCTS COMPANY

UPM is one of the world's leading manufacturers of printing papers and the clear market leader in magazine papers.

Turnover in 2004 was EUR 9,820 million. UPM is characterised by a long-term approach to business and the desire to continuously develop its operations.

UPM's mission is to create both social and economic well-being through innovative products: papers, converted products and wood products.

UPM has production plants in 16 countries, and its products are sold on markets throughout the world. The company employs approximately 33,400 people. The most important markets – the EU countries and North America – account for 85 per cent of the Group's turnover.

## PRODUCTS AND CUSTOMERS

UPM manufactures a comprehensive range of different papers, which include magazine and newsprint papers, as well as fine and speciality papers. Customers are mainly printers, publishers, paper merchants and converters.

Products from the converting factories include self-adhesive labelstock, Radio Frequency Identification (RFID) tags, siliconised papers and industrial wrappings. UPM is a market leader in these areas. The products are used mainly by industrial customers in the manufacture of end products.

UPM is the largest plywood producer in Europe. Besides plywood, the Wood Products Division manufactures sawn timber and converted products. The most important users of wood products are the building and transport vehicle industry.

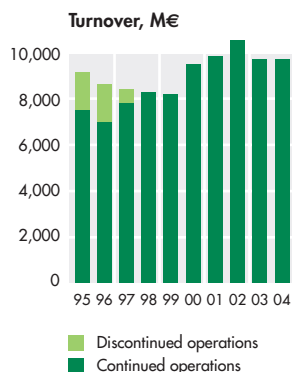
## RAW MATERIALS

Wood fibre is UPM's most important raw material. Some 35 million cubic metres of wood are procured annually. This renewable natural resource is used efficiently in both products and energy production. UPM owns more than a million hectares of forest land, most of which is in Finland. Approximately 10 per cent of the wood consumed annually by the mills is obtained from the Company's own forests.

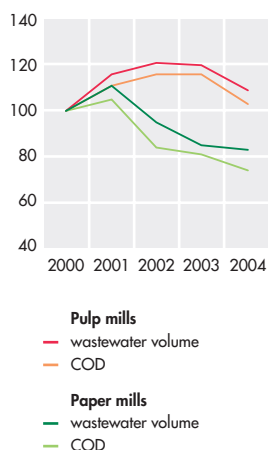
Paper recycling enables wood fibres to be used more than once. As a manufacturer of printing papers UPM is the world's biggest consumer of recovered paper. Slightly over a fifth of the fibre used is secondary fibre.

## OWNERSHIP

UPM's shares are quoted on the Helsinki and New York stock exchanges. At the end of 2004, the company had 72,861 registered shareholders. Geographically, shareholders fall into three groups of about the same size: roughly one third of the shareholders are based in Finland, one third elsewhere in Europe and one third in the United States.



**Relative trend in specific emissions of effluents, %  
Year of comparison 2000 (100%)**



*The mills' average wastewater volume and COD decreased further.*

## KEY EVENTS IN 2004

- UPM's shares were once again listed in the Dow Jones sustainability indexes DJSI World and EuroStoxx. UPM was rated the Best Forest Industry Company and received the highest possible points for environmental management.
- All of UPM's pulp and paper mills are ISO 14001 certified.
- UPM published the first joint EMAS statement of Finnish pulp and paper mills.
- Following the completion of internal investigations of competitive practices, UPM decided to contact the competition authorities of the European Union and Canada on 15 January 2004. The com-

petition authorities have initiated investigations into alleged antitrust activities. The EU, several Member States and the Canadian authorities have since granted UPM conditional full immunity in respect of certain conducts disclosed to the investigating authorities. The investigations may take years.

- In summer 2004, UPM started parallel field testing of forest certification schemes in the UK, Canada and Finland. The WWF is participating in the project as an observer and a consultant.
- New chemical recovery line at Wisaför-est's pulp mill in Pietarsaari came on

stream. Following the rebuild the mill now ranks among the world's best in terms of energy efficiency. The investment also reduced the mill's emissions significantly.

- To improve long-term viability and competitiveness, UPM decided to restructure the Wood Products Division and close the Miramichi kraft mill. Restructuring in the Wood Products Division resulted in the closure of the Aureskoski sawmill and the Viiala and Kuopio plywood mills. Reorganisation was implemented in the production operations at the Kajaani and Alholma sawmills.

## POLICIES GUIDE RESPONSIBLE OPERATIONS

UPM's operating policies support the Group's corporate values: openness, trust and initiative.



Corporate responsibility at UPM means that the Group aims to operate profitably and to generate long-term stakeholder value within a framework which is economically, ethically, socially and environmentally sustainable.

The ethical principles guiding the Group's operations are expressed in a number of core policies; the Environmental Policy, Human Resources Policy, Occupational Health & Safety Policy and the Corporate Social Responsibility Policy, all of which are approved by the Board of Directors.

Additional policies are provided for the prevention of fraud and for the disclosure of information, which were updated in 2004. The Fraud Policy is a clear statement by the UPM Board of Directors that the Company will not tolerate any fraudulent or unlawful activities or cover-ups, including non-compliance with Company policies. The Information Disclosure Policy ensures that all market operators have access to adequate and correct Company information and that disclosed information is both consistent and provided without delay.

In addition to these policies internal specifications and rules have been laid down.

UPM complies with the regulations of national legislations in all countries in which it operates. The Company has also made a commitment to the principles of the United Nations Global Compact Initiative and the Business Charter for Sustainable Development of the International Chamber of Commerce.

### CORPORATE GOVERNANCE

Corporate governance is the system by which public companies, like UPM, are directed and controlled. Corporate governance specifies the distribution of rights and responsibilities among different decision makers in the corporation, such as shareholders, the Board,

the CEO and executives, and spells out the rules and procedures concerning how decisions are made and disclosed.

In accordance with the provisions of Finland's Companies Act and the Articles of Association of the Company, the control and management of the Company is divided among the shareholders represented at the general meeting of shareholders, the Board of Directors and the CEO. The CEO is assisted by the Company's Executive Team.

The Board of Directors is responsible for internal control. The Group's internal audit function reports to an Audit Committee formed of members of the Board of Directors. The internal audit function is also responsible for monitoring the implementation of UPM's policies.

In accordance with the recommendations of Helsinki Exchanges (HEX), UPM observes the guidelines issued by HEX concerning the governance of publicly quoted joint stock companies and the guidelines for insiders. The Company also complies with the Sarbanes-Oxley Act and the New York Stock Exchange (NYSE) regulations for foreign companies insofar as Finnish legislation allows.

### CORPORATE RESPONSIBILITY

A five-member Corporate Responsibility Council has the task of managing the Group's responsibility issues. The Council's chairman is the CEO Jussi Pesonen and the members are the executives responsible for the Group's economic and financial issues, resources, business support, human resources and communications functions.

Hannu Nilsen, Senior Vice President, Corporate Responsibility and Marja Tuderman, Vice President, Environment report to Executive Vice President Markku Tynkkynen on the Executive Team.



Corporate responsibility is developed by a network of experts within the Group, who also participate in issue specific working and steering groups.

In accordance with UPM's general management principles, the business units and subsidiaries are themselves responsible for ensuring that both obligations set by external bodies and internal targets are met. They also have the task of developing and reporting on responsibility issues.

#### WIDE COVERAGE OF MANAGEMENT SYSTEMS

Standardised and certified quality, environmental and occupational health and safety systems serve as practical management tools. They ensure the efficient and consistent management of the Group's operations. All systems have the principle of continuous improvement built into them, with yearly targets and schedules set and progress monitored. Many mills have integrated the various management systems into one system.

Following certification of the environmental management system at the Miramichi paper mill in July 2004, all the Group's paper and pulp mills now have a third-party verified environmental system in place. The majority of the mills and forestry departments also have a certified Chain of Custody system. In 2004 more of the Group's mills have been registered in the EMAS system of the European Union, taking the total number now registered to 16 of UPM's 19 European mills.

*UPM policies: pages 46–49.*

*More information about corporate governance in the Annual Report: [www.upm-kymmene.com](http://www.upm-kymmene.com).*

*List of certified mill management systems: page 52.*

*Comparison of report contents with the principles of the Global Compact Initiative, page 55.*

# POLICIES

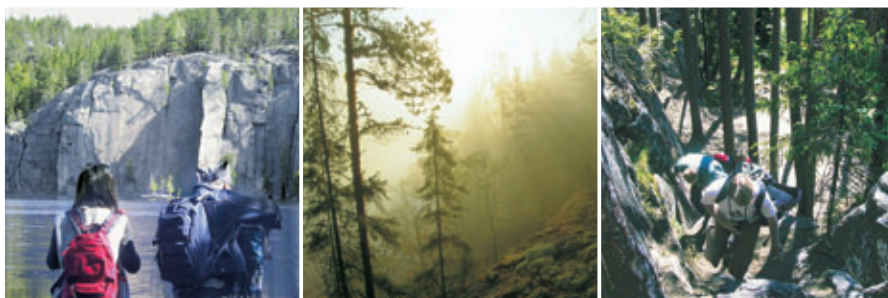




## WORKING WITH STAKE- HOLDERS FOR SUSTAINABLE DEVELOPMENT

Regular dialogue with stakeholders facilitates understanding of different views.





The views of UPM's stakeholders on what constitutes responsible business operations may differ from those of the Company or conflict with one another. Dialogue with the representatives of stakeholder groups facilitates understanding of the reasons behind the differences in viewpoints. UPM aims to ensure that information is freely available on the Group's operating principles, targets and plans.

UPM's stakeholders include, for example, employees, customers, shareholders, contractors, authorities, the local communities in mill locations, media, non-governmental organisations (NGOs) and other organisations.

Several examples of how UPM works with stakeholders are described below. Employee and supplier relations are addressed in more detail on pages 37 and 27. Some stakeholder meetings are protected by privacy agreements and are therefore not reported in public.

## ENGAGING WITH COMMUNITIES AND SCHOOLS

UPM is conscious of the impact its production units can have within local communities around the world and takes seriously its responsibility to maintain good communications and develop meaningful relationships with the various stakeholders involved.

Many production units organise Open Days which are well publicised to encourage employees' families and local residents to visit the facilities and find out more about the operations.

The production units and forestry departments carry on regular partnership projects with schools, often focusing on forest and environmental issues. In the UK the Shotton and Caledonian mills are running long-term education projects with local schools to promote recycling while the Miramichi mill

participates in the Fish Friends project organised by the Atlantic Salmon Federation for local schools, helping pupils to understand river and ocean life. For the past two years UPM has sponsored an initiative by the Finnish Periodical Publishers Association, aiming to promote reading among young people. The initiative involves a schools theme day leading on to a year-long learning programme.

The Rauma mill participated in an environmental team project launched by the local chamber of commerce, which produced a website presenting industrial environmental activities to local schoolchildren.

The forestry departments participate in numerous research and other projects relating, for example, to forest conservation, recreational use of forests and landscape ecological planning (page 19).

## INCREASED CUSTOMER SATISFACTION

UPM's largest customer group consists of the clients of the paper divisions: publishers, printers, paper merchants and converters. Customers are placing an increasing emphasis on the importance of sustainable manufacturing and procurement processes and regularly benchmark UPM's operations such as environmental performance (page 11).

The Paper Divisions have used customer surveys to help measure the satisfaction of their clients on a regular basis. The latest survey from November 2004 suggests that customer satisfaction has developed positively across the Paper Divisions and in all product areas. The surveys aim to identify the specific strengths and weaknesses of the Company. They chart the customers' views on UPM's products, services, innovativeness and development potential, co-operation and communication. The results of the surveys

allow the Company to continuously improve and develop policies and operations which are important to their customers.

Customer satisfaction is also surveyed in the other divisions. A survey was conducted among the Wood Products Division's plywood customers in 2004.

In November, the British Periodical Publishers Association awarded UPM "Magazine Paper Supplier of the Year" and "Environmental Performance or Initiative of the Year". The Environmental Award was made in recognition of UPM's parallel field testing of forest certification schemes and the conversion of the Shotton mill to using 100% recovered fibre to produce its newsprint, which increased the recovered paper processing capacity in the UK by nearly one third.

UPM received IKEA's Tulip Award for Best Paper Supplier for the fifth time.

## MEETING NGOS TO DISCUSS FOREST ISSUES

UPM's contact with non-governmental organisations (NGOs) often pertains to the use of forests. In Finland, discussions on the protection of old-growth forests continue, and UPM is participating in broad-based stakeholder discussions initiated by Metsähallitus, the state forestry organisation, involving a wide range of organisations and local residents.

UPM has also started parallel field testing of forest certification schemes in the UK, Canada and Finland. The WWF is participating in the project as an observer and consultant (page 21). The Group is also participating in the heritage forest project launched by WWF Finland.

In the United States, the Blandin mill's expertise in forest ecology is helping the Nature Conservancy (a private, non-profit organisation) to produce a forest



management plan to return land acquired by the Conservancy to its natural state.

In Finland, UPM's Forest Division is taking part in a nation-wide forest management and birdlife project organised by Metsäteho, a forestry research and development company. The project is looking at conservation measures in managed forests with reference to the habitat requirements of individual species. Partners in the project include BirdLife Finland, Sääksisäätiö (the Finnish Osprey Foundation) and the Hunters' Central Organisation in Finland. The project promotes the Forest Biodiversity Programme for Southern Finland.

### INVOLVEMENT IN ORGANISATIONS

The Company is actively involved in a number of organisations who are working to promote and develop sustainable practices.

UPM has undertaken to comply with the principles of the UN Global Compact Initiative and the Company actively participates in the Nordic Network, which is a network of companies signatory to the Initiative.

UPM participates regularly in the activities of the World Business Council for Sustainable Development (WBCSD), which is a coalition of some 170 international companies. The company is an active member of the Council's Sustainable Forest Products Industry team.

UPM is involved in various organisations: as a foundation partner with Forum for the Future in the UK and a founding member of the Finnish chapter of Transparency International, an organisation combatting corruption and bribery. The Company is also a member of the Finnish Business & Society organisation.

The Company is an active participant in one of the most significant of the international paper industry organisations; the Confederation of European Paper Industries

(CEPI). In the printing and publishing industry, the World Association of Newspapers is a major organisation with whom the Company runs joint initiatives. UPM mills using recovered paper are members of the International Association of the Deinking Industry (INGEDE).

UPM participates in the activities of appropriate national organisations in the countries where it has production units.

### CHARITABLE DONATIONS AND PHILANTROPY

UPM sponsors various organisations and projects each year, among them student organisations, research communities, associations and non-governmental organisations.

Sponsorship is mainly focused on projects which are deemed relevant for both UPM and its customers or which contribute to the vitality of the localities in which the Group operates.

UPM also attends to its own cultural capital, including a major art collection, museums displaying the Company's heritage, extensive historical archives and several historically valuable buildings. The most significant among the museums is the former Verla groundwood plant and board mill in Finland, which are included on the UNESCO World Heritage List. Visitors from around the world flock the museum; the summer of 2004 was a record-breaking season with 22,000 museum visitors.

### GRANTING COMMUNITY ACCESS IN COMPANY FORESTS

UPM owns forests in Finland, Canada, the USA, the UK and Uruguay and takes a positive view of multiple use of its forests. Finland's public right of access grants everyone the right to roam and to pick berries and mushrooms in the forests. Several public nature trails have been created in Company-

owned forests. The Company's hunting rights in Finland have almost exclusively been leased to hunting clubs.

In the UK, public recreation facilities have been improved by building exercise and cycling routes in Company forests in North Wales. In the United States, the Blandin mill forests are also used for recreational purposes, with thousands of people hunting in them each year. The Miramichi mill in Canada takes local interests, such as hunting or birdwatching, into account in its forest management operations. On UPM's partly owned eucalyptus plantation in Uruguay, locals can lease the forests for cattle grazing and beekeeping.

### REDUNDANT SITES DEVELOPED

UPM is a major landowner in Finland. Much of the land was acquired in the late 19th and early 20th century by the Company's predecessors when they wanted to secure their wood supply through company forest holdings. Some of this land is no longer essential to the business and so the Company has designated particular areas for development.

On redundant mill sites UPM works with the local authorities to create residential areas. Major developments currently underway in Finland are Lappeenranta, Lahti, Joensuu and Jyväskylä where a total of 10,000 new apartments are being built to accommodate up to 20,000 residents.

In co-operation with Metsähallitus and the Ministry of the Environment, UPM will continue to carry out established conservation programmes primarily within the European Natura 2000 network in Finland. In line with jointly agreed targets, the Company has sold a total of 1,162 hectares of forest land situated within conservation programme areas to the Finnish state.



## UPM ■ CASE

### TIME INC. EVALUATES ITS PAPER SUPPLIERS ON A REGULAR BASIS

"As a major paper buyer we are obliged to ensure that our purchasing strategy includes environmental issues and continuous improvement," says Time Inc.'s David Refkin. Previously President of the company's paper purchasing subsidiary, he is currently responsible for sustainable development at Time Inc. The company, which is part of Time Warner, publishes some 130 magazines, which are read by more than 300 million readers both in the United States and in other countries.

In line with its principles, Time Inc. evaluates the performance of its most important paper suppliers every year. UPM supplies the company with approximately 200,000 tons of paper annually from eight mills in Finland, Germany, Scotland and North America. Sustainable development evaluations concerning UPM have been conducted since 1997. In its present form the evaluation includes about 35 items. "Both Time Inc. and our paper suppliers take this evaluation very seriously. Environmental issues as well as quality, customer service and price play a key role in the evaluation, and based on performance in this area we make our decision on how much paper we are going to buy from this supplier in the future," Refkin says.

In his view, UPM takes stewardship issues seriously. "Because UPM is a company with production in a number of countries, a huge database on all the aspects covered in the evaluation is needed. Where is the pulp obtained from? How does the pulp supplier manage energy issues? Where do the chips that are the raw material for the pulp come from? All the particulars in each country must be looked into," Refkin explains.

Key issues for Time Inc. at the moment are forest certification, climate change and promot-

ing paper recovery and recycling in the United States.

Time Inc. aims to increase the proportion of wood from certified forests used to make its paper to 80 per cent by 2006. In 2003, the figure was 25 per cent. The proportion of certified fiber in paper supplied by UPM companies ranges between 45 and 90 per cent, depending on the mill. Refkin regards Finland as a leader in forest certification and UPM's Caledonian mill as a pioneer in Scotland. Considerable progress has also been made in North America in this area. David Refkin has been actively involved with UPM and other paper suppliers in convincing forest owners of the advantages of certification.

"We do not prefer one system over another. It is the responsibility of the auditors to ascertain the reliability of the systems," Refkin points out.

"UPM has done good work in improving energy efficiency. A significant issue in North America is the use of coal. We must jointly convey our concern to the energy industry about the use of fossil fuels," Refkin says.

UPM and Time Inc. have implemented a sustainable logistics project to investigate ways to minimize the carbon footprint. The project also looked into the energy used in paper production. The conclusion reached was that the form of energy used in paper production as well as the efficiency of the manufacturing facilities have a more significant role in reducing carbon dioxide emissions than issues relating to hauling distances.

Time Inc. wants to assume its share of responsibility for the end use of its magazines and has been involved in campaigning to promote the recovery and recycling of paper. The recovery rate of household wastepaper in the



■ David Refkin, Director of Sustainable Development, Time Inc. (right) and Jaakko Sarantola, Senior Vice President, Forestry and Wood Sourcing, UPM.

U.S. is considerably lower than in Europe, for example. The results of the recycling campaigns in Boston and Prince George's County have been encouraging, however. Time Inc. has not set any targets for the recycled fiber content of the paper it buys, but: "We encourage our suppliers to use recycled fiber whenever it is economically and ecologically feasible," says Refkin.

Time Inc. plans to expand its sustainable development evaluations to cover social responsibility issues. "Our resources are limited, however, and for the time being we have wanted to focus on those issues on which we can have the most impact, such as forest certification," Refkin says.



## PROFITABLE OPERATIONS GENERATE WELL-BEING

Economically viable, competitive and efficient operations enable UPM to take care of its environmental and social responsibilities. Likewise, good performance in environmental work and social responsibility bolsters the Company's financial development. These three aspects of corporate responsibility are developed harmoniously and are continuously improved in compliance with the Company's principles.

### MULTIPLE DIRECT AND INDIRECT IMPACTS

UPM's activities have numerous direct economic impacts. The taxes paid by the Company and its employees have a direct impact on the well-being of society.

Indirect economic impacts are generated, for example, by investments; their maintenance and upkeep, as well as by transportation and the procurement of wood or other raw materials needed in the manufacture of the Company's products.

Many of UPM's mills were founded in the 19th century, and the local communities have grown and developed around them. At a local level, the Company's economic impact may be considerable.

The structure and distribution of UPM's income and expenditure are shown on page 15.

### PERSONNEL

At the end of 2004, there were 33,433 people employed by UPM. The number of personnel decreased by 1,049 compared with the previous year. The majority of UPM's employees are in Finland, followed by Germany, North America and the UK.

In 2004, the Company's payroll costs amounted to EUR 1,325 million.

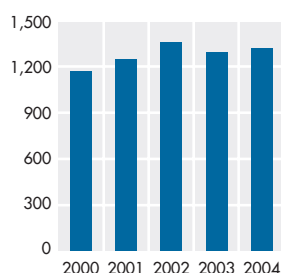
Economic responsibility sometimes means taking decisions that are difficult for personnel. The restructuring of the Wood Products Division in Finland will result in the loss of 670 jobs in 2004–2005. The closure of Miramichi's old kraft mill and other measures taken to secure the long-term viability of the mill will lead to the loss of 400 jobs. The technologically outdated facility operated at a loss and major investments would have been needed for maintenance, to bring it up to modern environmental protection standards and to carry out other improvements. The mill's future lies in the two magazine paper machines, and efforts will be focused on their continual improvement to increase their competitiveness.

#### SUPPLIERS OF GOODS AND SERVICES

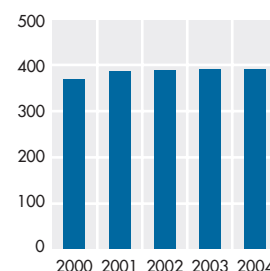
UPM has tens of thousands of subcontractors throughout the world supplying the Company with raw materials, machinery, equipment and services. In 2004, UPM procured raw materials, goods and services totalling EUR 5.5 billion, representing 56 per cent of the Group's turnover.

The Group's operations are predominantly based on the use of wood. UPM's forest management and wood procurement provide employment for more than 3,200 contractors and the operators of their vehicles and machinery in the countries where the Company operates. The work involves a total of some 2,150 vehicles and machines, and the indirect economic impact transmitted through the employees of these subcontractors is considerable. Wood procurement generates income for forest owners. In Finland, for example, the Forest Division concludes approximately 35,000 wood transactions with private forest owners each year.

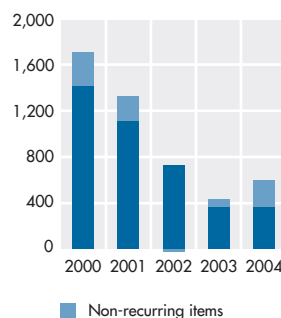
Salaries paid, M€



Dividends paid, M€  
(2004: proposal)



Profit before tax, M€





## CAPITAL EXPENDITURE AND MACHINERY

Investments in paper machines require a great deal of capital. The undertakings are long-term projects. In terms of technology and competitiveness UPM's machines are among the best in the world. Modern, high-quality machinery improves efficiency, as raw materials and energy are saved and the load on the environment is minimised.

The biggest ongoing investment is the Changshu mill in China, where a second paper machine is due to be completed in spring 2005 (page 42). Investments in 2004 totalled EUR 686 million.

The most important investment completed in 2004 was the rebuild of the Pietarsaari pulp mill.

*The main source of economic information on the Group is UPM's Annual Report 2004 at [www.upm-kymmene.com](http://www.upm-kymmene.com).*



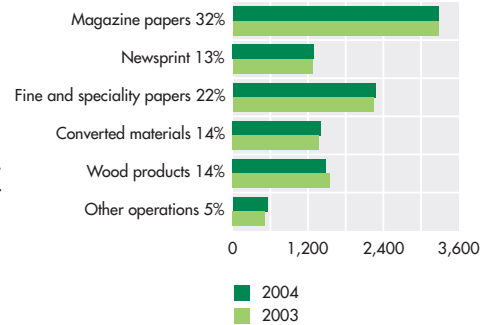


## STRUCTURE AND DISTRIBUTION OF UPM'S INCOME AND EXPENDITURE IN 2004

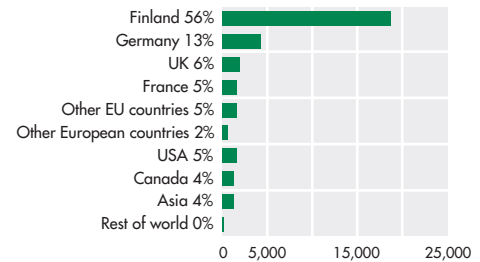
UPM provides customers with the products and services they have requested and receives income in return. The Company needs professional, skilled employees to manufacture the products and carry out its other activities, as well as raw materials, energy and means of production. When these costs, wages and salaries, depreciations on investments and financial expenses are deducted the Company is left with a profit on which it pays taxes and a dividend to shareholders. In 2004, costs totalled EUR 8.5 billion and

profit before tax EUR 359 million (without non-recurring items). The Board of Directors will propose to the Annual General Meeting a distribution of dividends in the amount of EUR 393 million. The employees in different countries pay tax on their wages and salaries in accordance with the practice of the country in question. Suppliers of goods and services as well as their employees also pay various taxes and tax-like contributions to the relevant local society.

Turnover by Division, M€

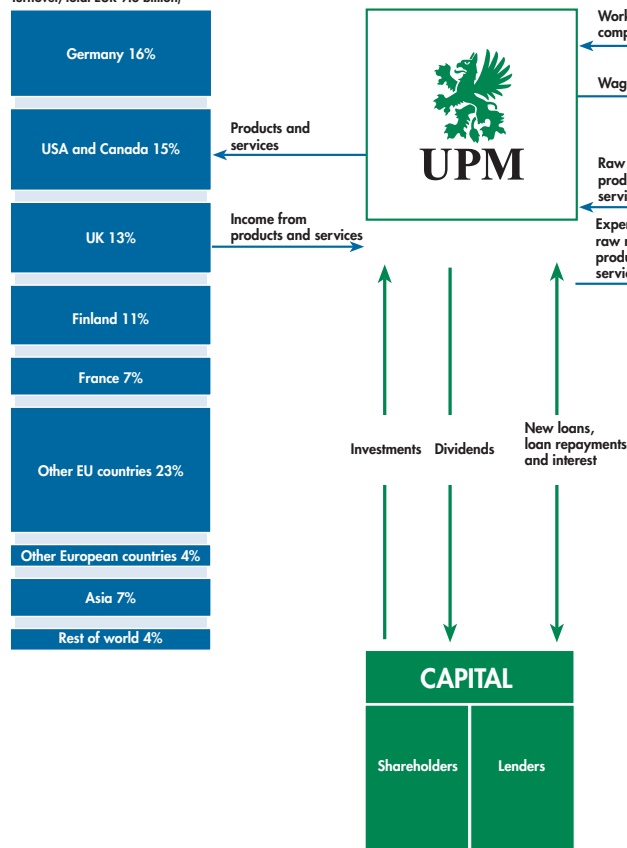


Personel by country



### INCOME

(Income according to customer location, Turnover, total EUR 9.8 billion)



### COSTS AND EXPENSES<sup>1)</sup>

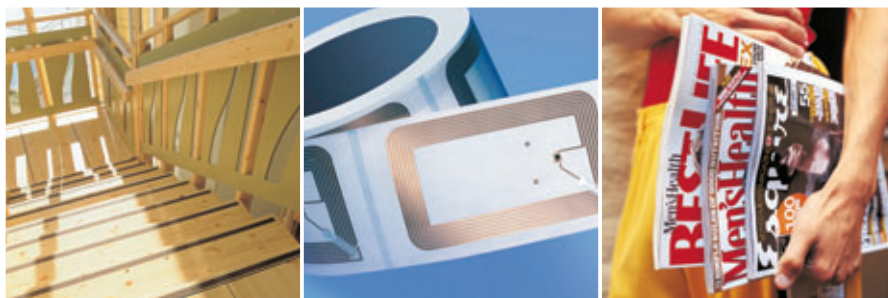
### PROFIT BEFORE TAX

Income tax

<sup>1)</sup> excluding non-recurring items.

## RECYCLABLE PRODUCTS

Wood is UPM's primary raw material. The products are recyclable and safe to use.



UPM produces magazine and newsprint papers as well as fine and speciality papers. Magazine and newsprint papers are used for periodicals, newspaper inserts, advertising materials and sales catalogues. In addition to newspapers, newsprint papers are used for telephone directories and mail-order catalogues. Fine papers are used mainly in special interest magazines, direct marketing material, brochures, and as office paper.

Speciality papers include envelope paper and the face and backing papers used for self-adhesive labels, as well as white and brown sack and kraft papers.

The papers are recyclable. UPM is the world's largest user of recycled fibre in printing papers. The amount of recovered paper used is equivalent to about a quarter of the Company's total papermaking capacity.

An environmental product declaration, Paper Profile, is available for all UPM's printing papers. It is a product declaration intended primarily for professional paper buyers, listing relevant information on the raw materials, manufacturing emissions and energy consumption for each product line.

### WOOD PRODUCTS

The plywood mills and sawmills produce WISA plywoods, veneers, sawn goods and further processed products. Plywoods are manufactured from birch and spruce. In addition to basic panels the range includes a variety of coated and highly processed special products, thin veneer plywoods, as well as spruce, birch and pine veneers. The sawmills produce standard sawn goods, special sawn products, lamwood products, planed and profiled products and strength-graded goods made of pine and spruce.

Most WISA products are used in construction and furnishing. Plywoods are also manufactured for the shipping and transport industries.

Wood products can be recycled for a new use or disposed of by incineration or composting. Impregnated or special coated plywood and sawn goods, which cannot be recycled as materials, account for a very small part of production.

### CONVERTED PRODUCTS

The Converting Division units Raflatac, UPM Rafsec, Loparex and Walki Wisa manufacture technically demanding, highly processed speciality products. Raflatac manufactures paper-based and synthetic labelstock for price, product and IT label manufacturers. UPM Rafsec manufactures remote sensors using RFID technology, which can be used in, for instance, access control, goods flow monitoring and the Chain of Custody verification of products. Loparex produces siliconised release materials for hygiene products, labels and industrial use. Walki Wisa's products are composite materials for the packaging industry and technical applications as well as wrappers for the paper, steel and mechanical wood processing industries.

Most converted products are best disposed of by burning them for energy. Papers containing silicone can also be composted. Plastic coated products are safely recycled by removing the plastic from the paper mechanically, burning it for energy and reusing the paper fibres. Adhesive-containing labelstock is less recyclable, but new types of adhesives are being developed that are better suited to recycling.

[www.paperprofile.com](http://www.paperprofile.com)  
[www.wisa.upm-kymmene.com](http://www.wisa.upm-kymmene.com)  
[www.walkiwisa.upm-kymmene.com](http://www.walkiwisa.upm-kymmene.com)  
[www.raflatac.com](http://www.raflatac.com)  
[www.loparex.upm-kymmene.com](http://www.loparex.upm-kymmene.com)  
[www.rafsec.com](http://www.rafsec.com)

## ENVIRONMENT AND SAFETY HAVE CRUCIAL ROLES IN RESEARCH



Key environmental research focuses on the reduction of energy and water consumption and solid waste volumes.

In 2004, UPM spent some 47 (48) million euros or 0.5 per cent (0.5%) of its turnover in research and development projects. UPM's research contributes to customers' success by providing more cost-efficient solutions of an even higher quality.

UPM's research and development activities concerning chemical pulp and paper will be concentrated in the new Lappeenranta Research Centre by summer 2005. The Augsburg Research Centre focuses on recycled fibre research. Wood products research is carried out at the Wood Products Division's Lahti Research and Development Centre, and Converting research in Tampere. Projects by the New Ventures unit also involve research and development activities.

UPM co-operates with many research institutes, universities and suppliers. UPM owns 39 per cent of KCL, a joint Finnish paper and pulp research company.

The significance of environmental aspects in research projects has increased. Focal areas include reducing energy consumption in mechanical pulping, reducing solid waste and lowering water consumption as a part of the effort to improve production efficiency. In addition, the Research Centre monitors the eventual impacts of new EU regulations, including the system for Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), on individual production lines and production chemicals.

The verification of the user safety of papers is another focal area. Extensive research continues on the microbiological and chemical safety of production processes and raw materials. Mill management systems ensure that accumulating safety information is utilised in the production processes.

The Environmentally Sound Chemicals research project, launched in 2003, contin-

ues. It charts any chemicals in the Group's paper and pulp production process which may cause potential risks. So far the project has focused on investigating the volumes of chemicals used.

The Augsburg mill is involved in an international project co-ordinated by the French CTP research institute. The aim is to find solutions that will allow the recyclability of printed papers to remain high as new printing inks and methods gain ground. New water-based printing inks and the increased use of flexo and digital printing are cutting back paper recovery opportunities with the existing technology. The project brings together actors from throughout the paper production and printing chain.

### NEW PRODUCTS FROM LAMINATING WASTE

UPM's New Ventures projects seek new solutions to improve existing products or processes and also develop entirely new products. This work has resulted in, for instance, UPM Rafsec's RFID smart tags and labels.

An ongoing New Ventures project is studying the use of laminating waste from the Converting Division to create a novel product. Viability for end uses is tested at the Wood Products Research and Development Centre, unique in its field in Europe. The properties investigated include the products' water-resistance, coatability and fire safety. The project is expected to run for two years.





## UPM PROMOTES RESPONSIBLE WOOD PROCUREMENT

Knowing the origin of the wood and promoting forest certification worldwide play an important role in UPM's wood procurement.

Wood is the main raw material in nearly all the Company's products. In 2004, UPM's mills consumed a total of 27 million cubic metres of wood. The Group's wood procurement units are responsible for wood supply to the mills. They also manage the Group's own, leased state forests and privately-owned forests under an agreement service.

In accordance with its principles, UPM neither carries out harvesting nor accepts wood harvested in breach of the regulations of the authorities from areas designated for environmental conservation, from areas within official conservation programmes or from sites set apart by the relevant authorities for exclusion from felling operations.

### ORIGIN OF WOOD VERIFIED

UPM knows that the wood supplied to its mills comes from sustainably managed forests with the help of its Chain of Custody system. Almost all UPM's wood procurement units and mills use a certified Chain of Custody system, which can provide product-specific information on the share of certified fibre (page 52). The Chain of Custody for purchased pulp is described on page 23.

The Company has monitored the origin of wood imported to Finland from Russia since 1996. The system for tracing the origin of wood consists of a database and GIS mapping system, statements of origin and field checks where the results are saved to the system.

In 2004, UPM carried out audits on 145 felling sites in Russia and 10 in



	Austria	Canada	Estonia	Finland	France	Germany	Russia	UK	USA	Total
<b>Forests managed by UPM, 1,000 ha<sup>1)</sup></b>										
Company forests	–	17	0	920	–	0	0	3	79	1,019
Leased forests <sup>2)</sup>	0	942	0	0	0	0	0	0	–	942
Managed forests <sup>3)</sup>	0	0	0	230	0	0	0	160	–	390
Total	–	959	0	1,150	–	0	0	163	79	2,351

<sup>1)</sup> In Uruguay UPM is a minority shareholder in Forestal Oriental SA, a company owning 87,000 hectares of land, out of which 42,000 hectares are eucalyptus plantations.

<sup>2)</sup> Leased from the province of New Brunswick. <sup>3)</sup> Owned mainly by private non-industrial forest owners.

<b>Wood consumption in 2004, million m<sup>3</sup></b>										
	0.905	2.141	0.037	21.485	0.504	0.557	0.381	0.296	0.406	26.712

<b>Wood procurement in 2004, million m<sup>3</sup> <sup>1)</sup></b>										
	1.415	2.632	0.637	25.981	0.763	0.635	0.531	1.612	0.584	34.790

<sup>1)</sup> Includes wood procured for UPM mills in the respective country and wood delivered to other companies as well as exports. Wood imported to UPM's mills is included in the figures for both the exporting and the importing country.

Estonia. Two major and 29 minor non-conformities were identified. Proposals for corrective action have already been made. Based on the audits, deliveries may be terminated if the operations of the supplier are found to be inadequate. The origin of wood tracing system is being developed to give even more accurate information about the supply chain and origin of the wood. This will be enabled by improvements in information technologies and the availability of Russian forest maps and forest stock information in digital form ([www.upm-kymmene.com/tracingimports](http://www.upm-kymmene.com/tracingimports)).

In Russia, UPM has a sawmill located in Pestovo, in the province of Novgorod, and a plywood and veneer mill in Chudovo. In addition, there is a plywood mill whose wood procurement is managed by a subsidiary, UPM-Kymmene Forest AS, in Otepää, Estonia. These mills consume a total of approximately 400,000 cubic metres of wood annually. An origin of wood tracing system similar to the one in use for Russian wood is currently being developed for the wood procurement operations of these mills.

At the beginning of 2005, UPM will publish a guide for suppliers of wood imported from Russia and the Baltic countries detailing the Company's principles on wood procurement, environmental issues and occupational health and safety. The guide will be accompanied by training for personnel involved in the procurement of imported wood in Finland and for the wood procurement staff in mills in Russia and the Baltic countries.

## UPM PROMOTES FOREST CERTIFICATION

Forest certification refers to a certificate issued by an independent third party indicating that the forests are managed and utilised in accordance with the principles of sustainable development. Each of the countries where UPM uses timber employs national or international forest certification systems (page 54). UPM has outlined the principles required of forest certification. The Group is actively involved in activities aimed at promoting harmonious development between the various certification systems.

In summer 2004, UPM began parallel forest certification field testing in the UK, Canada and Finland (page 21).

In North America, UPM has endeavoured to promote projects aimed at forest certification in co-operation with forest owners and user groups. In the United States, the Blandin mill supports group certification in accordance with the American Tree Farm System. In Canada, UPM has promoted and supported a pilot project under the Pan Canadian Certification system for the group certification of 50 privately-owned estates. In spring 2004, UPM proposed an initiative to launch the Atlantic Canada Master Logger certification programme for companies supplying the industry with wood from privately-owned forests.

## RESEARCH TO PROMOTE BIODIVERSITY IN COMMERCIAL FORESTS

UPM regards the preservation of biodiversity in commercial forests as important, and promotes research to protect species

## RAW MATERIAL ALSO FROM TREE PLANTATIONS

UPM procures its raw material mainly from the managed semi-natural forests of Finland, Russia, the Baltic countries, Central Europe and North America. Wood for UPM's pulp raw material suppliers also comes from plantation forests.

UPM also has a joint holding with Botnia in a company in Uruguay called Compania Forestal Oriental S.A. (FOSA). FOSA owns approximately 87,000 hectares of land, of which 42,000 hectares are eucalyptus plantations. Botnia is planning the construction of a pulp mill in Uruguay.

In the UK, wood is also procured from tree plantations; a non-native species, the Sitka spruce.

According to the UN's Food and Agriculture Organisation (FAO), a production plantation (tree plantation) refers to the production of wood or other products using non-native species or, in some cases, using indigenous species, a planted forest or other wooded area.

## UPM ■ CASE

### ARTIFICIAL SNAGS SHELTER NUMEROUS SPECIES OF BEETLE

One of the aims of UPM's biodiversity strategy for its Finnish forests is to increase the number of heavy decayed trunks in commercial forests. The amount of this type of decayed wood constitutes the main difference between forests that have been in commercial use for many years and natural forests. Since 2002, the Company has tried to increase the volume of decayed wood using artificial snags. The results from the first follow-up indicate that environmental management measures in commercial forests can also have a very rapid positive impact on the habitats of forest species.

Decayed wood is an important habitat for forest species, especially insects and rot fungi. As much as a quarter of Finnish forest species need decayed wood to exist. The largest group of insects are beetles, and each species is adapted to live in a particular type of decayed wood. Beetles need decaying wood in order to be able to reproduce. The larvae feed on various parts of the wood and the mycelium and sporophores of rot fungi. A single individual tree decays slowly, and the species of beetles constantly change as the process of decay progresses. The decomposer communities present in wood are important for the nutrient supply of forests, as they release nutrients in the trees and make them available to growing stock.

In the UPM trial, spruce and aspen trees to be retained in connection with felling operations were cut into snags some four metres tall on two separate sites. Over 200 cubic metres of wood per hectare had been felled.

The species in these artificial snags were surveyed by attaching insect traps to the snags. The material collected during the first



■ *Leptura quadrifasciata* belongs to the class of insect benefitting from artificial snags.

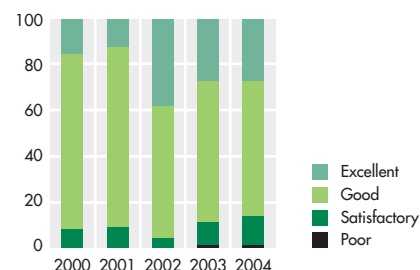
follow-up year, 2004, comprised a total of 302 different species of beetle and a total of 5,032 individuals. The species in aspen and spruce snags differed clearly from one another.

The material also included a number of rare species. Among the endangered species were *Allandrus undulatus* and *Philonthus ventralis*. These findings show that endangered species living in decaying wood can occur in intensively-managed commercial forests provided that their substrata and habitats are preserved or more are created.

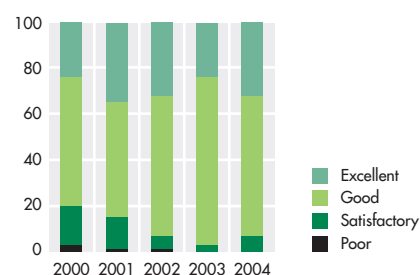
UPM is continuing species monitoring. Because the process of decay in artificial snags is slow, the overall benefit afforded by the method to diversity will become apparent only after a long follow-up period.

### QUALITY OF ENVIRONMENTAL MANAGEMENT IN UPM FELLING OPERATIONS IN FINLAND

#### In own forests, %



#### In privately owned forests, %



The Forest Division in Finland has monitored the ecological quality of its harvesting operations since 1996. Assessments are made by a third party. Monitoring of the ecological quality of forest fuels harvesting was started in 2004. The results will be used to develop operating practices.

and habitats in various countries. Surveys on individual species are part of the research. In Canada, UPM co-operates with Bird Studies Canada in a study focusing on the impacts of seedling stand management methods on the habitat of the rare Bicknell's Thrush (*Catharus bicknelli*).

Forestry also has an impact on water bodies. In Canada, the 15-year Catamaran Brook Watershed Project involving the Ministry of Fisheries and Oceans as well as several universities and local salmon conservation

organisations is continuing. The project studies the impacts of forestry on the watercourse and, in particular, the impacts on the Atlantic salmon. In Canada, UPM is participating in the Cains River Research Project and the Satellite Rearing Project for Salmon in the Miramichi regions.

In the United States, the Blandin mill is participating in Ruffed Grouse (*Bonasa umbellus*) Population Monitoring and the Small Mammal Survey. In the UK, the subsidiary Tilhill has started a project aimed at

the protection and monitoring of the endangered Narrow-leaved Lungwort (*Pulmonaria longifolia*).

In Finland, UPM maintains a network of artificial Osprey nests (*Pandion haliaetus*) in its forests in co-operation with the Finnish Osprey Foundation. The Company also aims to develop silvicultural methods that are suitable for use in the lek sites of the Capercaillie (*Tetrao urogallus*) by monitoring the popularity of the sites.

## UPM ■ CASE

### PARALLEL FIELD TESTING FURTHERS FOREST CERTIFICATION

In summer 2004, UPM started parallel field testing of forest certification schemes in the UK, Canada and Finland. The WWF is participating in the project as an observer and a consultant. The UK's Periodical Publishers Association awarded the unique project "Initiative of the Year" in November.

The aim of the project is to promote the use of forest certification and provide information to enable a balanced comparison of the systems. There is stiff competition between the various systems, especially in western Europe, a fact which may compromise the credibility of

the entire concept of certification. There are currently more than 50 forest certification schemes worldwide, but only less than 5 per cent of the world's forests are certified.

In UPM's project, the national systems and the international PEFC and FSC schemes will be tested on Company owned and managed forests. A total of more than 35,000 hectares of forest areas are included in the project. The systems to be compared and the forest areas are shown in the table below.

The most important and widely debated criteria in the comprehensive schemes have been selected for comparison. A dozen or so ecological, economic and social criteria, which WWF representatives in each country participated in selecting, are included. The selected criteria include sustainability of logging operations, management of ecologically valuable forest habitats, water protection, occupational health and safety issues and stakeholder consultation.

The results of testing will provide UPM with information on whether the Company's wood procurement and forest management meet the selected criteria or whether the operating practices and guidelines should be changed. Testing also provides an opportunity to develop various certification processes. In the long term, the



■ Grace Balfour from UPM's Tilhill Forest (left) and Beatrice Richards from the WWF field testing in UPM's Brownhills Forest in southwest Scotland.

Country	Standards to be compared <sup>1)</sup>	Surface area, ha <sup>2)</sup>
Finland	FFCS/PEFC, Swedish FSC, draft Finnish FSC	8,000
UK	UKWAS/FSC, UKWAS/PEFC	3,000
Canada	SFI, FSC Maritime, CSA	25,000

<sup>1)</sup> legends, page 54.

<sup>2)</sup> In Canada, the testing will be carried out on crown lands managed by the Company; elsewhere in UPM's own forests.

results of the comparison can be exploited in research.

The field testing was started at the end of summer 2004, and the first results will be obtained in spring 2005.

### FULFILMENT OF TARGETS AND TARGETS FOR 2005

#### FULFILMENT OF TARGETS IN 2004

- Increase in proportion of certified wood in all countries.  
→ Achieved.

#### FINLAND

- Reduction in emissions from transportation, increase in ecological management qualifications and development of co-operation with stakeholders.  
→ Achieved.
- Improvement of ecological quality in wood harvesting.  
→ Unchanged.

#### CANADA

- Reduction of impacts on watercourses, inventory of habitats of rare plants.  
→ Targets partially achieved.

#### GERMANY

- Exclusively certified wood for mills using virgin fibre.  
→ Achieved at Schongau mill, proportion at Augsburg mill 92%.

#### UK

- Enhancement of safety awareness and reduction of accidents in the field.  
→ Slight increase in number of accidents. Training to continue in 2005.

#### USA

- Reduction of impacts of logging roads on soil and watercourses.  
→ Target partially achieved.

#### TARGETS FOR 2005

- Promotion of forest certification and increase in proportion of certified wood.
- Progress in information about the origin of wood.
- Promotion of forest management methods that secure biodiversity.

## FIBRES CHOSEN ACCORDING TO PAPER GRADE

Pulp suppliers are required to operate in compliance with the principles laid down in UPM's corporate responsibility policies.



The most important raw material in paper-making – wood fibres – are used in the form of either chemical pulp, mechanical pulp or deinked pulp from recovered paper. Mechanical pulps – refined or groundwood – and recycled fibre are usually produced at the paper mills. Most of the chemical pulp is procured from Company owned or associated mills.

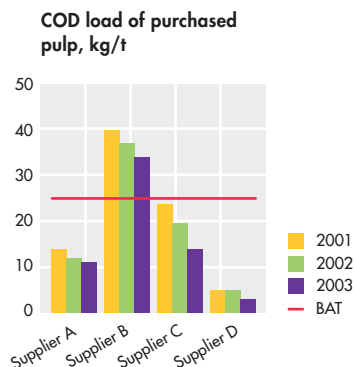
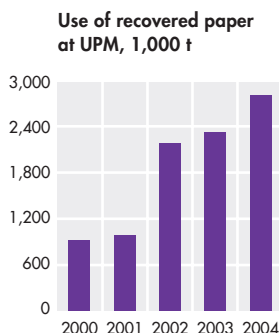
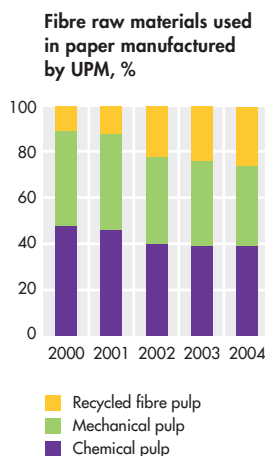
The paper's quality requirements determine the type and proportions of the different fibres used. Speciality papers and high quality fine papers are manufactured exclusively from chemical pulp. Recycled fibre is used mainly in newsprint and directory

papers as well as in some magazine paper grades.

### PULP SUPPLIERS ASSESSED IN TERMS OF RESPONSIBILITY

UPM's mills annually use over 3 million tonnes of chemical pulp for papermaking. Following the closure of the Miramichi pulp mill in December 2004, UPM now has four chemical pulp mills, which are all located in Finland. The Group also owns a 47 per cent share of the Finnish company Botnia. The total production from these pulp mills makes UPM highly self-sufficient in pulp.

The modernisation of Wisapulp's chemi-



### FULFILMENT OF TARGETS AND TARGETS FOR 2005

#### FULFILMENT OF TARGETS IN 2004

##### PULP STEERING

- To continuously improve the environmental performance level of the North American suppliers.  
→ Work will continue. In 2004, the suppliers were compared extensively.
- To develop and implement a systematic approach to social responsibility issues.  
→ Work completed – annual follow-up to be implemented at the beginning of 2005.

#### TARGETS FOR 2005

- The reporting system concerning the raw materials of chemical pulp will be developed further and more suppliers will be included in the database.



cal pulp mill in Pietarsaari was completed in spring 2004 and further increased UPM's pulp production capacity. The mill's environmental impact was also significantly reduced. All UPM's chemical pulp mills in Finland now meet EU BAT levels.

UPM's Pulp Steering department works with the paper mills to select pulp suppliers. To be chosen, external pulp suppliers are required to accept the principles laid down in UPM's corporate responsibility policies and to operate in compliance with them. Pulp Steering evaluates its external suppliers regularly and expects them to develop their operations on a continuous basis. This evaluation includes the assessment of the suppliers' development plans.

Pulp Steering gathers information from its suppliers about the origin of wood, the amount of certified wood and other data, such as the environmental impact of the pulp supplier's mills. Benchmarking, in terms of environmental impact, is carried using EU BAT emission levels. During 2005, other aspects relating to corporate responsibility, such as personnel, occupational safety and local community policies, will also be included in the continuous monitoring programme.

Pulp suppliers which have a Chain of Custody system in place, issue monthly reports concerning the amount of certified fibre. Three internal and five external suppliers have a certified Chain of Custody system. The aim is to increase the amount of certified fibre.

The Indonesian company APRIL that supplies the Changshu mill with chemical pulp was one of the pulp suppliers assessed by Pulp Steering in 2004. APRIL has implemented the development plans agreed under the supply contract signed in 2002.

Use of certified fibre is also increasing in North America, where Pulp Steering has widely assessed existing and potential new suppliers during 2004.

#### USE OF RECYCLED FIBRE INCREASING

UPM uses annually 2.8 million tonnes of recovered paper, which is more than a fifth of the mills' total fibre raw material consumption. UPM is the world's largest user of recycled fibre in printing papers. Recycled fibre is produced and used in seven UPM mills in the UK, Austria, France, Germany and Finland.

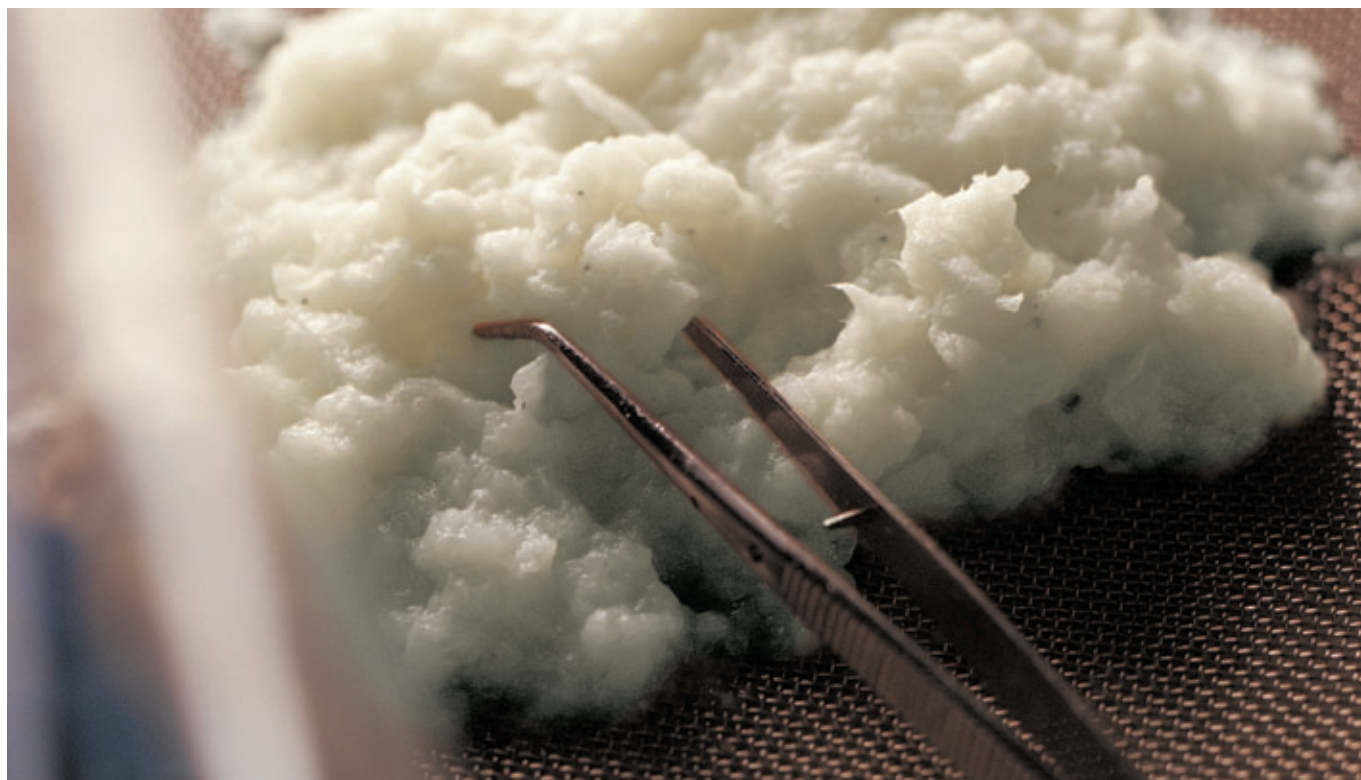
The Kaipola mill is increasing the use of recovered paper by expanding its deinking

plant. The expansion will be completed in summer 2005. The mill uses two thirds of the graphic paper collected from households in Finland.

To make the use of recovered paper feasible, efficient collection and sorting systems are required. UPM mills mainly use graphic paper collected from households. This consists of paper products such as newspapers and magazines, sales catalogues and leaflets. The recovered paper used as raw material is purchased from waste paper collection companies.

Those UPM mills that use recovered paper are actively involved in promoting recovery by organising various campaigns and, in the UK and France, by collaborating with schools. In November, the UK's Periodical Publishers Association awarded UPM in the UK an environmental award for the Shotton mill conversion to using 100-per cent recycled fibre, which increased the use of recovered paper in the UK by nearly one third.

The use of recovered paper has many advantages, including reducing the amount of landfill waste and saving energy.





# CLIMATE CHANGE IMPACTS ON ENERGY CHOICES

UPM has done sustained work to reduce greenhouse gas emissions contributing to climate change.

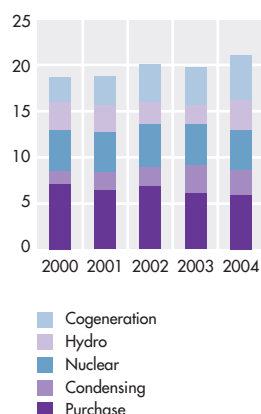
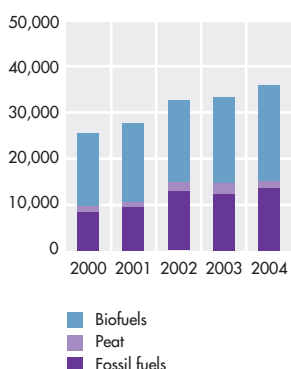
UPM is a major energy user. Most of the electrical and thermal energy consumption is in paper and pulp production. Due to a self-sufficiency rate in electricity of about 70 per cent globally and self-sufficiency in Finland, UPM has been able to focus on energy generation solutions that produce less carbon dioxide for many years.

## DIVERSIFIED RANGE OF ENERGY SOURCES

Diversified energy sources ensure a reliable and competitive supply of energy to the mills, coupled with minimal emissions. UPM introduced the first measures to reduce carbon dioxide emissions in the 1990s. Under a long-term strategy, the Group invested in the improvement of energy efficiency and above all in the use of carbon dioxide neutral fuels and constructed new efficient biofuel power plants at its Finnish mills. The ensuing reductions in emissions are shown in the graphs on page 33, among others. These long-term efforts made in order to reduce emissions were not taken into account as credit for early action when allocating emissions allowances under the EU's emissions trading scheme, although this would have been possible under the Emissions Trading Directive. UPM's starting point in reducing the emissions was determined based on its emissions history in 1998–2002.

In 2004, UPM decided to build new biofuel power plants at the Rauma and Shotton mills. Once commissioned at the end of 2006, these plants will further reduce UPM's carbon dioxide emissions by 100,000 tonnes a year.



Electricity procurement,  
TWhDistribution of fuels,  
GWh

The use of forest-derived energy sources – “forest fuels” – has increased in Finland higher than forecast, and UPM has been a forerunner in this field. Forest fuels are logging residues, small-diameter trees removed during clearing and thinning operations, and stumps. In 2004, the amount of forest fuels supplied by the Forest Division to UPM and its associated power plants corresponded to 1,250 gigawatt hours, which is approximately 25 per cent more than in 2003.

Nuclear power is another energy source that does not cause carbon dioxide emissions. Through its holding in Pohjolan Voima, UPM is participating in the nuclear power plant project in Olkiluoto, Eurajoki that will be completed at the end of this

## UPM ■ CASE

### PIETARSAARI PULP MILL EXCELLENT IN TERMS OF ENERGY EFFICIENCY

Following the rebuild of its cooking chemical recovery department that was completed in spring 2004, the Pietarsaari pulp mill now ranks among the world's best in terms of energy efficiency. The investment also significantly reduced the mill's emissions.

The new boiler is state of the art in terms of energy efficiency. After the start-up, the pulp mill will be more than self-sufficient in terms of both energy and heat. This will be achieved by utilising the latest technology in burning the by-products arising from the pulp manufacturing process and in energy production.

The investment increased the pulp mill's production capacity to 800,000 tonnes a year. Despite a substantial growth in production, the environmental load caused by the mill has not increased. The specific load has decreased for almost all types of emissions, with, for example, an approximate 70-per cent fall in the dust content of flue gases.

The commissioning of the mill was successful, but it will take some time before the new facility is completely stable when running maximum capacity. There have been malfunctions in the operation of the stand-by burner for concentrated malodorous gases. The malfunctions have now been reduced, but they have caused odour nuisances in the vicinity of the mill. During the summer, there were some problems at the evaporation plant,



■ The Pietarsaari pulp mill is more than self-sufficient in power and heat.

as a result of which the permit conditions for biological oxygen demand were temporarily exceeded.

The rebuild has made the Pietarsaari pulp mill one of Europe's biggest and most efficient mills in its field. The chemical recovery line consists mainly of a soda recovery boiler, a lime kiln, an evaporation plant and a causticising plant. In terms of energy efficiency, the pulp mill's soda recovery boiler is the most efficient in Europe.

### FULFILMENT OF TARGETS AND TARGETS FOR 2005

#### FULFILMENT OF TARGETS IN 2004

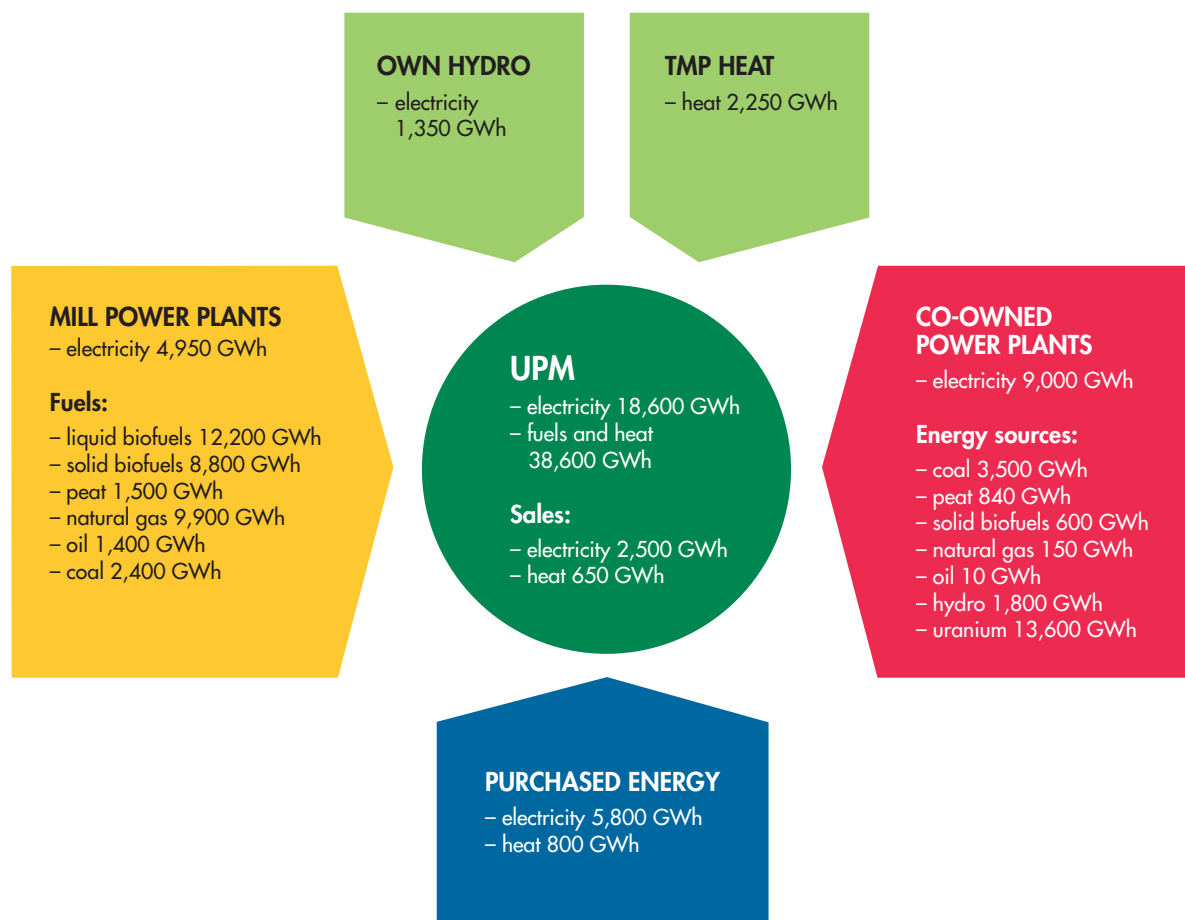
- Readiness for controlling carbon dioxide balance and emissions trading.  
→ Achieved.
- Environmental management systems of hydropower plants to be updated.  
→ Will be carried out in 2005, ISO 14001 standard was changed.
- Project analyses for mill power plants to be continued.  
→ Achieved.

#### TARGETS FOR 2005

- To implement emissions trading in practice.
- To equip the Rauma mill's power plant with a thermal drying facility for bio-fuels.
- To implement a new improved model for evaluating energy efficiency.
- Project analyses for mill power plants to be continued.



## ENERGY SOURCES AND FUELS AT UPM



decade. UPM has reserved a 470-megawatt share in the new power plant.

Owing to an exceptionally wet summer, hydropower accounted for a record 27 per cent of electricity production at UPM's mills in Finland in 2004. UPM also uses wind power, but it accounts for only a small proportion of the Group's total electricity procurement.

Dried deinking sludge and natural gas are the main fuels used by UPM's mills located in central Europe, where the main raw material is recovered paper. Coal is used at the Changshu, Caledonian and Blandin mills.

#### ENERGY EFFICIENCY CONTINUOUSLY IMPROVES

Energy efficiency is one of the factors contributing to lower emission levels. The

Pietarsaari pulp mill's cooking chemical recovery department that was completed in the spring of 2004 is a world-class facility in terms of energy efficiency (page 25).

Energy efficiency at UPM is assessed by means of audits, which are carried out at all mills. Subsequent measures have produced good results. The mills have identified various areas where energy could be saved and utilised more efficiently through minor changes or investments. The efforts made by UPM to increase energy efficiency also include co-operation with machinery suppliers. For example, the power plant investment at the Rauma mill features a system for drying biofuels, thus enhancing energy efficiency.

Improving energy efficiency is an ongoing process. The aim in 2005 is to develop

and implement a new internal evaluation model for this purpose.

#### READY FOR CO<sub>2</sub> EMISSIONS TRADING

The EU-wide emissions trading scheme regarding fossil carbon dioxide emission allowances started on the 1 January 2005. UPM has about 20 mills in the area covered by the scheme. The Group's emissions trading is handled as a whole. As the allowances are allocated for three years at a time, the final impacts can only be assessed after the first three-year-period has expired.

The Kyoto Protocol entered into force on 14 February 2005.

## RESPONSIBLE ACTION REQUIRED OF SUBCONTRACTORS

Subcontractors are assessed regularly and more comprehensively



With the exception of fibre raw materials and logistics services, UPM's Supply Management function procures all raw materials, maintenance and other services, including production consumables, on a centralised basis. The Group-wide supply contracts cover all Divisions. Subcontractor partners are required to operate in a responsible way and their performance is regularly assessed.

Mineral fillers, coating pigments and binders are present in significant amounts in the papermaking process. The pigments used are mostly natural substances: kaolin or light clay and lime. They improve the paper's properties, such as smoothness, and increase opacity. The use of pigments also saves fibre raw material. The pigment content of finished paper products ranges from zero to 60 per cent, according to paper grade.

Binders are adhesives made from vegetable starches, but synthetic latexes are also used. Binders make the coating adhere to the paper surface.

Different chemicals are needed, for example, for process management and stock bleaching. The processes also require vari-

ous auxiliary materials to keep them clean and to ensure runnability.

Adhesives are used for plywoods and lam-wood panels. Some impregnating agents are used in the insecticide and preservative treatment of wood products. The Converting Division uses various types of plastics and mainly solvent-free silicones and inks.

### NEW AUDIT AND ASSESSMENT PROCEDURE INTRODUCED

The Supply Management function has audited its subcontractors' operations for many years. Suppliers are now being re-classified into three categories: partner, key and production consumable suppliers. At the same time, new audit and assessment procedures are being established for each category. The new audit and assessment procedure (page 28) that was piloted in autumn 2004 is intended for auditing the most important suppliers, with two audits scheduled for 2005. The pre-existing procedure will be used to evaluate 16 other suppliers. Personnel will be trained further to carry out the audits. One main auditor has been desig-

### FULFILMENT OF TARGETS AND TARGETS FOR 2005

#### FULFILMENT OF TARGETS IN 2004

- To encourage partners to operate in compliance with UPM's Corporate Social Responsibility policy  
→ Work has started and is being continued.
- To further develop the key suppliers' audit and assessment procedure  
→ Pilot audit carried out successfully in 2004. Implementation in 2005.

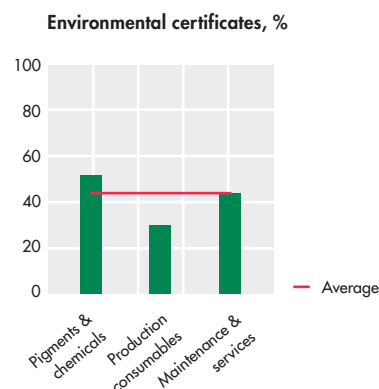
#### TARGETS FOR 2005

- To introduce the new supplier classification
- To follow up the REACH regulation and develop a worldwide chemicals register
- To launch a worldwide safety bulletin project

nated for the new procedure, and eight auditors will be responsible for the old procedure. These will set up evaluation teams as required.

The Supply Management function has also prepared for the entry into force of the REACH regulation. Preparations include the compilation of a common Group-wide chemicals register, which is already underway. Another project has been launched to update the safety bulletins to meet the challenges of the REACH regulation and to satisfy internal development needs.

#### QUALITY AND ENVIRONMENTAL CERTIFICATES AMONG SUPPLIERS IN 2004



In 2003, the number of suppliers holding quality standards certification rose from 75 to 78 per cent and the number holding environmental standards certification from 37 to 44 per cent.

## UPM ■ CASE

### COMPREHENSIVE SUPPLIER AUDIT PILOTED IN BRAZIL

UPM's Supply Management function has developed a new method for evaluating its suppliers, which was tested for the first time in autumn 2004. The new method comprehensively assesses the operating and responsibility practices of the supplier. One of the key aims of the audit process is to promote positive co-operation between suppliers and UPM.

The supplier for the pilot audit was the Brazilian kaolin mining company Imerys-RCC. Kaolin, also known as china clay, is one of the most important raw materials used in papermaking.

The audit covered three factors: environmental aspects, quality and social responsibility. Environmental aspects were assessed in terms of impact and of development of appropriate operations and principles. Social responsibility was subjected to extensive scrutiny especially in the areas of HR administration, business ethics and human rights as well as relations with stakeholders. Quality assessment included customer satisfaction, product development and product safety in the manufacturing process.

UPM's own evaluation team was assisted by an external consultant familiar with the local conditions.

The assessments were made using the scale 'inadequate', 'satisfactory', 'good' and 'excellent'. The results of the audit fell largely into the 'good' rating, with some lower scoring areas achieving 'satisfactory'. Imerys do not yet have a certified environmental management system, but do have a schedule in place to implement one. The audit showed that where operations had been identified as having an environmental impact the company had methods in place to manage the outcome. The company's HR management practices were assessed as good, exceeding the requirements of local legislation and of basic international standards. Additionally the company was found to have a transparent collective bargaining procedure with the local union and to participate at a satisfactory level in the education and health programmes within the local community. The certified quality system was found to work well; only one deficiency was noted in the audit, which Imerys has agreed to remedy.



■ Imerys RCC's Managing Director, Afonso Guerra (second left) and Operations Director, Milton Constantin (right) as well as members of UPM's evaluation team: Kaisa Lehtipuro (left) and Miguel Schloss and Bernard Arrateig (centre).

Imerys took a positive approach to the audit. The audit template had been prepared to serve as a global model for all supplier audits conducted by UPM. Consequently not all items in the questionnaire applied to the conditions in Brazil.

However, the pilot project provided UPM with a good starting point on which to continue audits of this kind. A number of changes were made to the template and deficiencies that became apparent during the course of the audit were addressed. Reviewing the template, keeping it relevant and up-to-date, and continuously improving our supplier audit processes will now be an ongoing process.

Two supplier audits on the same scale as the Brazilian pilot, are planned for 2005.

In a separate project, UPM Logistics assessed the transport chain from Brazil to one port in Finland, and rail transport to the mill. Various aspects of social responsibility were also included on a trial basis.



## TRANSPORTATION: AN IMPORTANT PART OF THE SUPPLY CHAIN

UPM's Logistics function audited its partners' social responsibility issues for the first time.



Most of UPM's haulage is handled by long-term contract partners. These partners are evaluated by the Group's Logistics function in various areas, such as the quality of their operations and services, environmental performance and occupational health and safety issues. Based on these audits, the partner and UPM draw up development plans. In 2004, for the first time, aspects relating to social responsibility were included in a pilot audit conducted by UPM's Supply Management in Brazil (page 28). The audit covered sea transport, port operations and rail transport in Finland. Social responsibility issues will now be included in audits carried out by the Logistics function on a permanent basis.

Distribution of the Cargo Handling Manual for Logistics' sub-contractors, together with guidance to its use, started in 2004. Service providers are expected to comply with the instructions on cargo handling, storage, transportation and occupational safety which are provided in the manual. Ensuring compliance is part of the audit and assessment procedure.

### MORE STRINGENT REGULATIONS ON TRANSPORT EMISSIONS

From 2005 the transport sector will be affected by a number of new regulations concerning emissions from vehicles and ships. The EU Commission sets restrictions on various types of emissions, including carbon monoxide, hydrocarbon, methane, nitrogen oxides and particles. The Euro IV standard for heavy-duty vehicles, to be introduced in 2005, will bring a further reduction of permitted emissions, and the limit levels for the sulphur and lead contents of fuels will also be tightened.

The International Maritime Organisation foresees stricter limits for the sulphur content in ship fuel and for nitrogen oxide emissions into the air. The Baltic Sea and the

North Sea have been identified as special areas where the maximum fuel sulphur content is set at 1.5 per cent. UPM Seaways started to use fuel with a maximum sulphur content of 0.9 per cent in two of its charter vessels in 2003. Since the new fuel is more expensive, the ships' operating costs are slightly higher.

### SEVERAL PROJECTS DESIGNED TO CUT EMISSIONS

In France, a project has been started to improve the efficiency of transporting finished products and raw materials. It involves designing a system for transporting finished products from the Chapelle Darblay mill via the River Seine to the Paris region and for bringing recovered paper to the mill as return freight. The barge will carry up to 60 trailers and has a design capacity of 150,000 tonnes of paper, annually. This will reduce lorry traffic, traffic jams and emissions. A number of national and local authorities are involved in the project and the barge is expected to be operational during 2006.

A pilot project carried out jointly by the Shotton mill, a paper customer and a service provider involved a specially designed trailer able to deliver paper to the customer and return to the mill with recovered paper. The trailer features specially designed technology which allows both loading and unloading of paper rolls and of recovered paper. This transport arrangement has reduced the total haulage of lorries.

### FULFILMENT OF TARGETS AND TARGETS FOR 2005

#### FULFILMENT OF TARGETS IN 2004

- To acquire certification of the quality, environmental and OHS management system.  
→ Audits have started, certification due 2005.
- To develop computation models for transportation and emission volumes.  
→ Work continues.
- To extend contract partner auditing to cover social responsibility aspects.  
→ Successfully piloted, will now be included in the audits on a permanent basis.

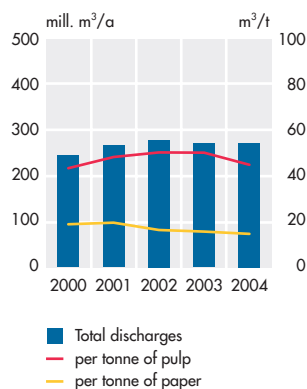
#### TARGETS FOR 2005

- To inventory the fleets of transport companies operating outside Europe in terms of environmental issues.
- To participate in development projects together with stakeholders.

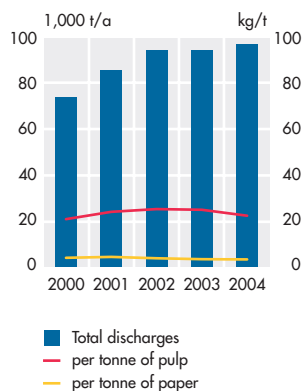
## DECREASE IN WATER CONSUMPTION

Many of the Group's paper and pulp mills have succeeded in their goal to reduce water consumption and as a result decrease the amount of wastewater.

**Volume of process wastewater from paper and pulp mills**



**COD load from paper and pulp mills**



The paper mills use water as part of the papermaking process and to cool the machinery and other equipment. The water required in production circulates in the processes several times.

Before wastewater is released into the watercourse, it is purified in the mills' effluent treatment plants. Some of the mills use the local municipal effluent treatment plants. The wastewater contains suspended solids from wood fibre as well as oxygen-consuming compounds, most of which are removed or made innocuous before being released into the watercourse. Wastewater from the bleached chemical pulp mills also contains small amounts of organic chlorine compounds. Wastewater also carries traces of nutrients, mainly nitrogen and phosphorus, into water bodies.

The wastewater is not toxic and is monitored regularly, as is its impact on the watercourse. The treatment of wastewater at the

paper and pulp mills is usually the most significant individual environmental financial undertaking.

### LOW WATER CONSUMPTION IN MANUFACTURE OF CONVERTED AND WOOD PRODUCTS

The Company's converting mills mainly use water only for washing and cooling of equipment and wastewater is conveyed to local municipal effluent treatment plants to be purified. Wash waters containing adhesives are usually treated at the mills own treatment plants.

Water at the plywood mills is used mainly to soak the logs. At two of the Group's plywood mills water containing suspended solids and nutrients is released into the watercourse as overflow. At the other mills the water is treated in the mills' own water treatment plants, fed into the municipal treatment plant or filtered through a layer

### FULFILMENT OF TARGETS AND TARGETS FOR 2005

#### FULFILMENT OF TARGETS IN 2004

- Reduction of water consumption and wastewater volume.  
→ Achieved at most mills.
- Reduction of load in effluent.  
→ Achieved at most mills.
- Schwedt: application of new technology in expansion of the biological treatment plant.  
→ Achieved.

#### TARGETS FOR 2005

- Caledonian: investment to reduce water consumption and COD load in effluent.
- Miramichi: modification of effluent treatment to operate under a lower load.
- Further reduction of water consumption, wastewater and load at a number of the pulp and paper mills.

of sand before being released into the water-course. The water for the glue rollers at the plywood mills circulates in a closed system. Some of the sawmills use water to sprinkle the logs, but the amount of water used is small and contains only minimal traces of compounds from the wood.

The effluent treatment plant at the Pestovo sawmill has not operated as planned, and plans to modernise it are underway.

## DECREASE IN WATER CONSUMPTION AND LOAD

In accordance with targets set water consumption decreased at the Augsburg, Changshu, Kajaani, Shotton and Stracel mills in 2004. Water consumption at Chapelle Darblay decreased but did not quite reach its target.

The wastewater load decreased at the Blandin, Kajaani and Stracel mills. The COD load of the Changshu mill decreased by 25 per cent. The Rauma mill succeeded in the plan to reduce suspended solid losses.

The Schwedt mill introduced new technology in conjunction with the expansion of the effluent treatment plant. With the new treatment plant, the mill aims to reduce its COD load from the current 3 kilograms per paper tonne to less than 2.5 kilograms.

In the spring of 2004, the Pietarsaari pulp mill's new cooking chemical recovery facility – the largest in the world – became operational. The investment contributes to a reduction in emissions in a number of ways. For example, the wastewater volume per tonne of

pulp produced has decreased by almost 20 per cent, as has the chemical oxygen demand, also by approximately 20 per cent, (page 25).

The ongoing objective is to further reduce both water consumption and load at many of UPM's mills and investment aimed at achieving this is currently being planned. The Caledonian mill is investing in high consistency bleaching, which will improve the quality of mechanical pulp and reduce both water consumption and the COD load. Since the Miramichi kraft mill closed at the end of 2004 modernisation of the mill's wastewater treatment that will facilitate operation under a lower load will be carried out. Necessary modifications will be carried out at the Changshu mill's effluent treatment plant for the new paper machine due to come into operation in summer 2005.

## WASTEWATER DISCHARGE AT KAUKAS

After the serious wastewater discharge at the Kaukas mill in the summer of 2003, the mill implemented an investment programme to reduce accidental discharges and increase the efficiency of the effluent treatment plant. Following the incident, UPM's other mills' management systems have been revised, risk management guidelines have been updated and personnel training has been increased.

The state prosecutor decided not to press charges over the incident. According to the decision exceptional and unexpected problems occurred during the start-up of the pulp mill.

By the end of 2004, 95 per cent of those who had suffered damages had accepted UPM's compensation proposal.

## INFRINGEMENTS OF PERMIT LEVELS

In 2004, there were some temporary infringements of permit levels at the Caledonian, Chapelle Darblay, Docelles, Loparex's Finnish unit, Miramichi, Pietarsaari, Steyrermühl, Stracel and Tervasaari mills. There were no long-term impacts from the discharges. After each incident the respective mills took immediate corrective measures to prevent further occurrence.

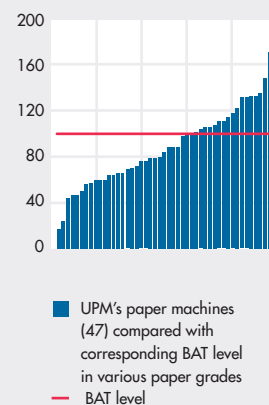
## WHAT IS BAT?

BAT (Best Available Techniques) refers to the most effective and advanced state in the development of an activity and its method of operation. The BAT concept pertains to the EU's Integrated Pollution Prevention and Control (IPPC) Directive.

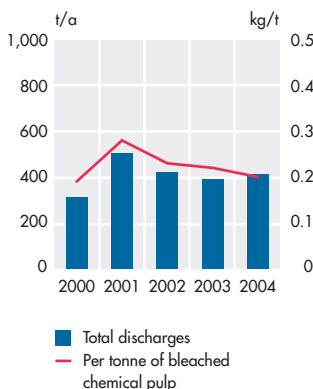
The relevant authorities of the EU Member States and the industry concerned jointly draw up so-called BAT reference documents, or BREFs. These describe techniques identified as BAT and the corresponding emission levels when using BAT techniques on a sector-specific basis. Reference documents have been drawn up, for example, for the pulp and paper industry.

The BREF documents of the pulp and paper industry contain benchmark values for releases in water-courses and energy consumption for certain paper grades. UPM uses these values to compare the performance of the Group's paper production processes. A total of 47 paper lines are included in the comparison.

UPM's paper machines and wastewater volume per tonne of paper compared with BAT, %



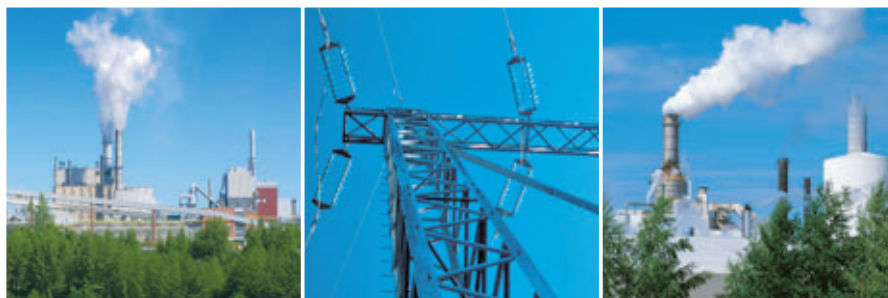
Average AOX load from pulp mills





## GOOD RESULTS IN REDUCTION OF AIRBORNE EMISSIONS

UPM mills have done considerable work to reduce air emissions, odour and noise.



The most significant air emissions are caused by energy production at both the pulp and paper mills. The main emissions are carbon dioxide arising from burning fossil fuels, which contributes to global warming, and sulphur dioxide and nitrogen oxides, which cause acidification.

Emissions have been reduced by increasing methods of energy production that do not give rise to carbon dioxide emissions. The introduction of the chemical recovery line at the Pietarsaari pulp mill has substantially reduced the mill's fossil carbon dioxide emissions.

For example, the Nordland mill has introduced flue gas recirculation. This has reduced nitrogen oxide emissions by 35 per cent.

The production of wood products does not cause significant airborne emissions.

The most significant airborne emissions from the converting factories are Volatile Organic Compounds (VOCs), which contribute to increased formation of ozone in the lower layers of the atmosphere. VOCs are emitted by solvent-based additives used in product manufacturing. The VOC emissions have decreased as emulsion adhesives, solventless silicones and water-based inks and lacquers are now used in many plants. Water-based inks and lacquers contain small amounts of solvents, however. Decreasing their solvent content and further replacement of the remaining solvent-based substances will continue to reduce VOC emissions at the converting plants.

### REDUCTION OF ODOUR AND NOISE EMISSIONS

The pulp mills produce malodorous sulphur compounds, or TRS emissions. These unpleasant odours arising from TRS emis-

sions are reduced by collecting and burning the malodorous gases.

Unpleasant odours have been caused by the effluent treatment plants of the Jämsänkoski and Kaipola paper mills and various measures have been taken to eliminate them. To be sure that the odour phenomenon can be tackled in every situation, the work to remedy the situation will continue in 2005.

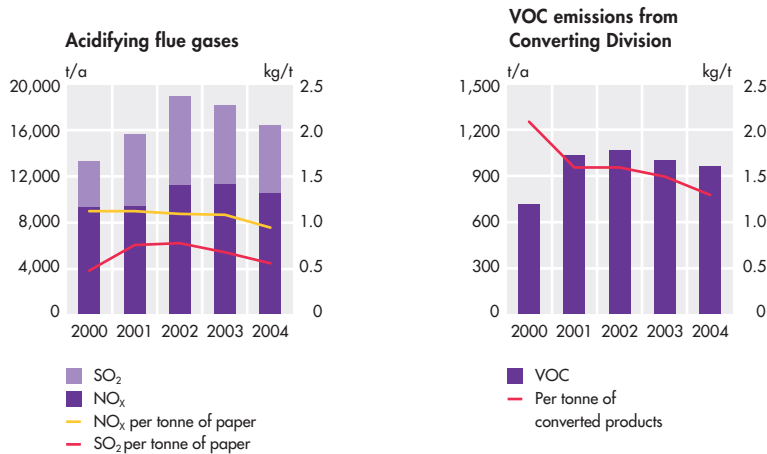
The Augsburg mill has done sustained work to reduce odour emissions arising from various sources which sometimes disturbed residents in the vicinity.

Noise problems have been reduced at many of the mills by improvements made following noise measurement procedures and surveys. Noise reduction is an area requiring improvement at the Augsburg, Rauma and Schongau paper mills as well as at Walki Wisa's and Raflatac's converting factories in Valkeakoski and Tampere.

### INFRINGEMENTS OF PERMIT LEVELS

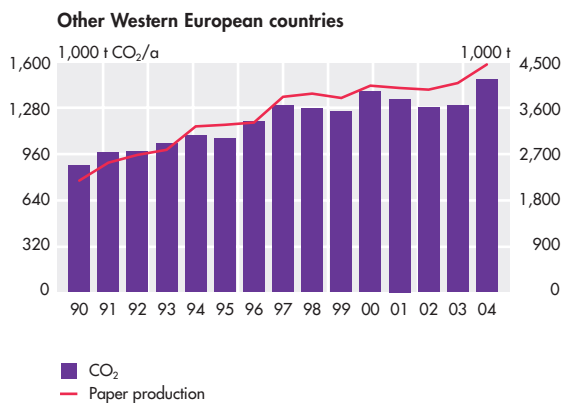
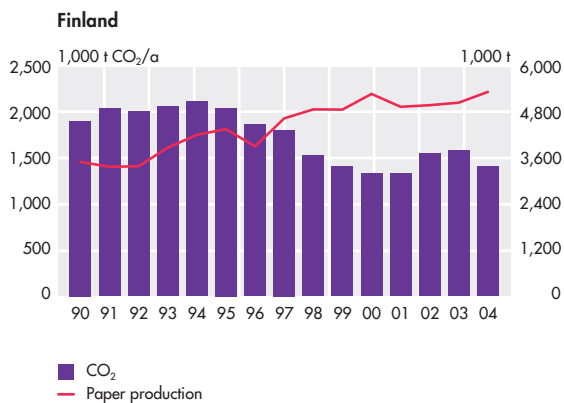
The permit levels for air pollution control were temporarily infringed in 2004 at the Kaukas, Schongau, Shotton and Stracel mills. Successful, corrective measures were carried out immediately.

Permit levels at the Miramichi mill were also infringed when the mill began to increase the use of biofuels to reduce its greenhouse gas and sulphur emissions. As a result of problems in the operation of the electrostatic precipitator, ash containing dust emissions were produced in the combustion process. The mill invested in a number of improvements, including to the electrostatic precipitator, and emissions have subsequently significantly decreased.



*\*) Data on factories sold in 2004 or earlier is not included in these figures.  
Data on Raflatac is not included in the figures for the year 2000.*

#### MILLS' FOSSIL CARBON DIOXIDE EMISSIONS



#### FULFILMENT OF TARGETS AND TARGETS FOR 2005

##### FULFILMENT OF TARGETS IN 2004

- Further improvement of the odour situation at the Kaipola and Jämsänkoski effluent treatment plants.  
→ Target achieved, but improvements are continuing.
- Reduction of emissions at Miramichi and Kymi.  
→ Targets partially achieved.
- Reduction of VOC emissions.  
→ Progress made, work continuing.
- Noise abatement.  
→ Still an area for improvement at many of the mills.

##### TARGETS FOR 2005

- Reduction of emissions by improving energy efficiency.
- Noise abatement at several mills.
- Reduction of odour emissions at the Kaukas mill.
- Reduction of VOC emissions at Walki Wisa's Pietarsaari and Loparex's Apeldoorn mills.

## INCREASING RECOVERY: KEY TO REDUCING WASTE VOLUME

Continuous improvement of UPM's waste management is one of the most important development areas.



The amount of solid waste taken to landfill sites from UPM's mills has decreased over the past few years. Improving waste management is still considered as a major environmental goal for the mills. The amount of waste is reduced by improving the efficiency of the production processes, among others.

At UPM, the largest volumes of waste come from the paper and pulp processes and from energy production. The deinking of recovered paper generates fibre sludge that contains printing ink and fibres, which is at most of the mills generally used as biofuel. The sludge from the effluent treatment plants contains, in addition to the biomass formed during the effluent treatment

process, wood fibres and paper fillers. This sludge is also used as a fuel in many mills. The ash generated from burning deinking sludge, other biofuels and coal is the most significant solid waste fraction. The soda precipitate from the clarification or filtration of green liquor is the pulp mills' most problematic waste fraction, and part of it has to be taken to the landfill.

Most of the waste from the converting factories consists of residues arising in production. Production residues containing plastic and silicon are often used to generate energy, and new methods of recycling are also being developed. Some of the residue from production is still taken to landfills.

Finding alternative ways to manage land-

### FULFILMENT OF TARGETS AND TARGETS FOR 2005

#### FULFILMENT OF TARGETS IN 2004

- Reduction in volume of solid waste and increase in recovery at most of the pulp and paper mills.  
→ Targets for 2004 were met, but work still continues.
- Tervasaari and Pietarsaari: planning of new landfill site and permit application.  
→ Tervasaari: permit applied for. Pietarsaari: landfill site extension under planning.
- New applications for ash reuse in Finland and the UK.  
→ Tests and research have been carried out, but with no significant results.

- New applications for deinking sludge from the Shotton mill.  
→ Use in existing applications has increased, new application through land reclamation and remediation under development.

#### TARGETS FOR 2005

- Changshu: reduction in volume of pigment waste taken to landfill.
- Kaukas and Rauma: reduction of solid waste taken to landfill.
- Converting Division: reduction of waste taken to landfill, increase in recycling and use for energy production.



fill waste is one of the key environmental targets of the converting factories. In an effort to reduce the amount of waste, various changes have been made in the production processes, sorting procedures have been improved and recycling has been increased.

Only minimal amounts of waste are generated in the Wood Products Division, as most of the production residuals – bark, sawdust and chips – are used as raw materials for the paper and pulp mills or in energy production.

#### RECOVERY OPPORTUNITIES VARY FROM COUNTRY TO COUNTRY

Opportunities for utilising waste vary from country to country according to national legislations and practices. UPM is actively involved in a number of different projects aimed at developing waste recovery.

In Finland, for example, ash is being used in earthwork operations. In Germany, Austria and in China almost all ash is utilised as a raw material in the cement or brick industry.

In Finland, the fibre and deinking sludge from the Jämsänkoski and Kaipola mills and the ash from the power plants were used to increase the height of a slalom ski slope.

At the Shotton mill, fibre sludge has been used to develop cattle bedding products.

#### MORE STRINGENT REQUIREMENTS FOR LANDFILL SITES

The Group's paper mills have 11 landfill sites of their own: eight in Finland, one in Germany, one in Austria and one in Canada.

The EU's Landfill Directive sets certain structural requirements for industrial landfill sites. Similar requirements have also been set for landfills due to be decommissioned. Some of the mills' landfill sites already meet these new requirements, and some have

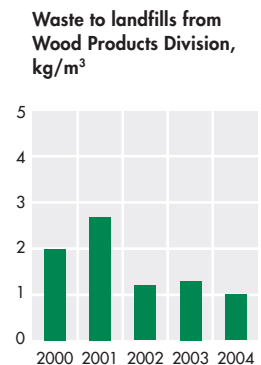
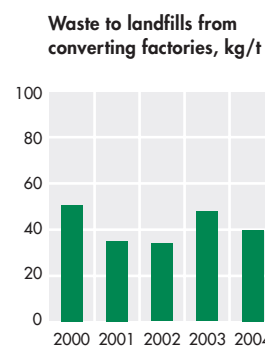
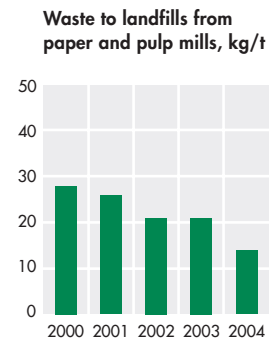
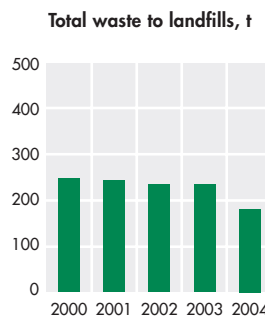
applied for permits for the establishment of new landfill sites.

#### SOIL CLEAN-UP OPERATIONS AT FORMER MILL SITES

As a legacy of acquisition, UPM owns various former mill sites whose operations closed down decades ago.

The remediation work on the site of a former sawmill on the island of Lampsäari just off the town of Lappeenranta is due to be completed by the end of 2005.

In 2004, UPM completed the remediation of its former sawmill site in Röyttä and obtained the environmental permit required for a long planned remediation project concerning its former sawmill site in Martinmäki. These two sites are located in northern Finland. At the Stracel mill in France the rehabilitation of the old chemical pulp mill area was finalised in 2004.





## GROUP-WIDE OPINION SURVEY CARRIED OUT

The results show a predominantly positive trend. Leadership, co-operation and teamwork were chosen as development areas for the whole Group.



In 2004, UPM restructured its human resources management with the aim of clarifying the organisation, highlighting the Group's unity at a global level and enabling efficient implementation of the human resources strategy.

At the end of 2004, there were 33,433 people in UPM's employ. The number of personnel decreased by 1,049 compared with the previous year.

UPM's Wood Products Division in Finland has been restructured. This will result in a reduction of 672 jobs by the end of 2005 (page 39).

Miramichi's old kraft mill in Canada closed in December as part of a restructuring programme aimed at ensuring long-term profitability. Some changes were also made at the paper mill and in wood procurement. These changes will result in the loss of 400 jobs.

In 2004, UPM lost a total of 14,678 working days due to strikes. The Wood and Allied Workers' Union in Finland staged a one day demonstration at all of the Wood Products Division's mills. Employees belonging to the Finnish Paperworkers' Union also organised a one day demonstration in protest against the cutbacks in the Wood Products Division. In December 2004, the Miramichi mill's workers' union began a strike that also affected the paper mill.

## FULFILMENT OF TARGETS AND TARGETS FOR 2005

### FULFILMENT OF TARGETS IN 2004

- Promotion of equal opportunity.  
→ Equality rules approved by Executive Team in February 2005.
- Development of indicators relating to HR issues and data collection.  
→ Work continues.
- Development of the e-learning environment for worldwide use.  
→ Work continues and has been extended to the Wood Products Division.
- Introduction of a systematic vocational qualification scheme.  
→ Extended in Finland, North America and China.
- Inventory of key vocational competencies in the Group.  
→ Job profiles and required competencies updated globally, in all functions.
- Development in the quality of the basic vocational training provided by the Group.  
→ Quality system under construction.

- Measurement of the results of vocational training.  
→ Evaluation method developed and piloted.
- Development of leadership training.  
→ Supplementary modules added to Leadership Academy training. Coaching for supervisors planned.

### TARGETS FOR 2005

- Based on the results of the opinion survey, further strengthening of leadership, team and co-operation skills.
- Continuous development of leadership culture based on values.
- Implementation of a new, incentive-based reward system.
- Creation of a development programme for sales.

## EXTENSIVE OPINION SURVEY TO ASSESS WORKING ATMOSPHERE

In September 2004, UPM conducted an opinion survey with all personnel to assess the working atmosphere. While Divisional surveys started in 1997, this was the first survey carried out at Group level. It had a response rate of 71 per cent. The survey will be carried out in the Wood Products Division during spring 2005. The Miramichi mill will not be included in the survey.

The results show a predominantly positive trend since the previous study.

Generally, employees expressed satisfaction in UPM's employ. The Group's image, reputation and customer orientation were considered as strengths. Co-operation and teamwork were other areas that employees were very satisfied with. Since the previous surveys, satisfaction had increased particularly in areas of customer orientation, co-operation and teamwork.

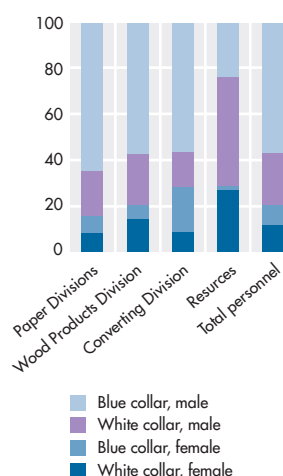
Areas requiring development include leadership and the provision of feedback. The implementation of the Group's corporate values in day-to-day work also needs to be addressed more closely.

Based on the results of the survey, UPM's Executive Team has defined supervisory work, co-operation and teamwork as priorities for development. Detailed action plans

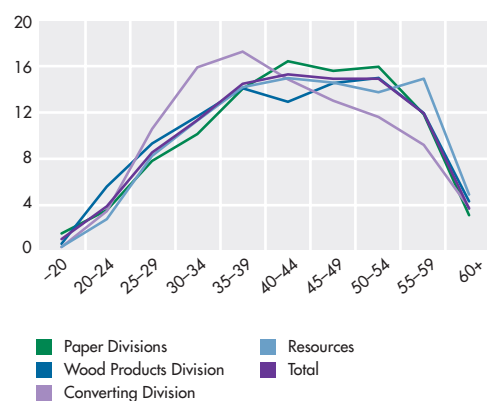


## Personnel by country at end of year

	2004	2003	2002
Finland	18,720	19,401	19,873
Germany	4,311	4,333	4,385
UK	1,852	1,960	2,001
France	1,712	1,771	2,032
Russia	750	660	571
Austria	678	712	737
Spain	277	272	255
Estonia	179	173	22
Netherlands	166	169	185
Italy	83	81	65
Belgium	74	66	128
Sweden	58	62	69
Hungary	46	16	13
Poland	45	50	53
Danmark	41	234	233
Ireland	–	345	315
Other European countries	66	64	146
USA	1,571	1,526	1,968
Canada	1,296	1,414	1,449
China	1,109	834	772
Malaysia	151	126	103
Australia	104	96	90
South Africa	81	78	73
Rest of the world	63	39	41
Total	33,433	34,482	35,579

Personnel gender distribution in 2004, %<sup>1)</sup>

<sup>1)</sup> The figures cover 95 per cent of the personnel, status at the end of the year.

Age structure of Group personnel by age group, %<sup>1)</sup>

<sup>1)</sup> The figures cover 95 per cent of the personnel, status at the end of the year.

## Employees' years of service with UPM, persons



will be drawn up by the Divisions, functions and units and their implementation will be monitored by the Executive Team.

## EQUALITY RULES COMPLETED

Promoting equal opportunity is a major development area. To specify in more detail the guidelines concerning equal treatment and discrimination, as defined by the Group's Human Resources Policy, UPM's

equality rules were drafted and approved by the Executive Team at the beginning of 2005.

These rules give a definition of equal treatment at UPM and of what constitutes direct and indirect discrimination. Additionally, they specify the implications of equality on issues such as human resources planning and recruitment, personnel development and compensation.

Any plans required under national legislation for promoting equality are set up at a local level when needed.

## EMPLOYEE PARTICIPATION

Employees at UPM participate in the Company's decision making in accordance with international and national legislation. An important form of co-operation is the Management Team work at a number of the mills.

The European co-operation body, the UPM European Forum, met twice in 2004. Representatives of all employee groups from UPM's mills in Europe participated in the Forum.

#### PROFIT-SHARING SCHEME

Bonuses paid to UPM's employees are based on the return of capital employed (ROCE), and are paid if the ROCE exceeds a pre-set minimum target. Bonuses under the profit-sharing scheme in 2004 will total 9 million euros.

#### VOCATIONAL TRAINING DEVELOPS FURTHER

The vocational training provided by UPM has traditionally been of a high standard. At its two industrial institutes in Finland, basic training is provided for various tasks in the papermaking industry, and e-learning methods are widely used. The Changshu Industrial Secondary Vocational School is running the UPM Paper Makers training programme using a multimedia system developed by UPM. The use of e-learning methods has made it possible to tailor training schemes to the mills' specific needs, which is the case for the Blandin mill, for example. KnowPly is a system tailored to the needs of the plywood mills, and KnowTimber, catering for the sawmills' needs, is under construction.

The implementation of a vocational qualification system was expanded in Finland, North America and China. In China, preparations were made to continue the vocational basic and supplementary training.

The vocational training in Finland was developed in a flexible way to meet changing needs. An example of this is a special retraining scheme which was developed for the Wood Products Division. A quality system for vocational training is currently being constructed in co-operation with industrial and commercial vocational institutes.

UPM's International Development Programme (IDP) is intended for recent university graduates. The year-long training programme includes periods of work in a range of various tasks in another country. The IDP aims to ensure the availability of a qualified work-force in the future by hiring young people and offering them the opportunity to work in an international environment right at the beginning of their career.

As part of the Group's management training, UPM launched a training programme



## UPM ■ CASE

### RELOCATION PROGRAMME KEY PART OF RESTRUCTURING IN WOOD PRODUCTS DIVISION

In 2004, UPM's Wood Products Division decided to carry out restructuring operations with the aim of adjusting its production of wood products in Finland to take account of the current and future market, and the raw materials situation whilst significantly improving the profitability of the Division, which had been making losses for a long time. This would result in a reduction of the workforce in the mills in Finland.

In August, the staff reduction need was estimated at 750. Once the co-determination negotiations were completed in October, the final number was established at 672 jobs to be cut by the end of 2005. No financially viable alternative solutions were found to the proposed substantial curtailments of operations during the negotiations. The Kajaani and Alholma sawmills' production was reduced by a third, the Viiala plywood mill and the Aureskoski sawmill closed down at the end of 2004 and the Kuopio plywood mill will cease operations in August 2005. The resources of the Division's head office functions were adjusted to match the new situation. Aureskoski's further processing operations will continue, virtually unchanged.

"The above changes were necessary to ensure the future of UPM's Wood Products Division. In a context of recurring losses, responsible decisions were required. The structural revision effectively ensures the long-term development opportunities of UPM Wood Products Division's Finnish plants," says Laura

Lares, Vice President, Business Development and HR.

Of the reductions in workforce, some 200 can be carried out using retirement solutions. Immediately after the co-determination negotiations, UPM launched a comprehensive relocation programme to find new jobs or training opportunities for those who were made redundant. By the beginning of 2005, 160 job vacancies and 35 training openings were available internally. At the beginning of 2005, new jobs had been found for over 60 people. A total of 24 people began training in the Lotila company school and in Rauma Stevedoring's docker programme.

For most concerned, finding a new job means moving to another locality. This explains why there were fewer applicants than vacancies. UPM is supporting relocation by granting the employees an allowance to help them settle in a new location and by compensating direct moving expenses.

Information on UPM's vacancies will be sent to those who have lost their jobs in 2005–2006, and they will have priority over external applicants if training for the post can be provided within a reasonable time.

The Group is also supporting the retraining of redundant personnel. The UPM Lotila industrial school in Valkeakoski will arrange a special training course for Paper Division jobs. The Rauma Stevedoring dockers' apprenticeship programme also provided a new occupation for a few people.

focusing on improving managerial skills and coaching people for more challenging tasks in the future. The pilot training that started in 2004 involved about 50 people.

## OCCUPATIONAL HEALTH AND SAFETY ORGANISATION REINFORCED

A large number of UPM's mills have an Occupational Health and Safety (OHS) management system (OHSAS 18001) in place or under construction. The main focus of occupational safety training is on risk management, induction training and guidance. Recognising the dangers and assessing the risks at one's own workplace play a central role in safety at work. The cornerstone of the Group's Occupational Health and Safety Policy is responsibility for employee's physical, mental and social well-being.

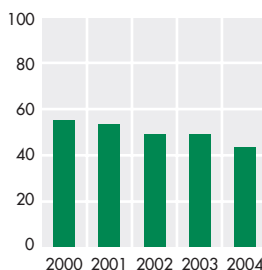
A director responsible for OHS matters was appointed within HR management. In 2004, the Group started to build a new co-operative network, covering all the countries in which UPM operates, in order to enhance the implementation of the corporate OHS policy through a joint strategy and shared goals. The first corporate OHS strategy will be drawn up in spring 2005.

UPM's Executive Team has paid special attention to the monitoring of accidents and absences from work due to sickness.

## OCCUPATIONAL SAFETY CARD SUCCESSFULLY INTRODUCED

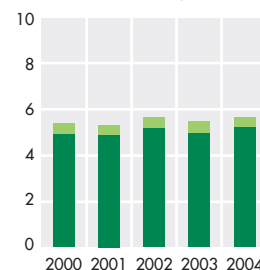
The introduction of an occupational safety card for subcontractors in Finland was suc-

**Accident rate, blue collar workers 2000–2004<sup>1)</sup>**



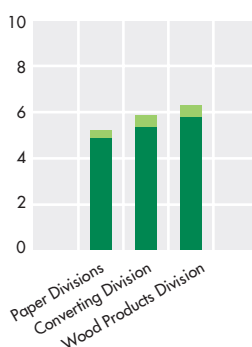
<sup>1)</sup> accidents, resulting in one or more days lost, per million hours of work

**Absence, blue collar workers (in % of regular contracted hours)**



■ Accidents at work  
■ Sickness

**Absence by Division 2004, blue collar workers (in % of regular contracted hours)**



■ Accidents at work  
■ Sickness

**Days lost rate vs. accident rate in 2004**



■ Paper Divisions  
■ Converting Division  
■ Wood Products Division

## FULFILMENT OF TARGETS AND TARGETS FOR 2005

### OCCUPATIONAL HEALTH AND SAFETY

#### FULFILMENT OF TARGETS IN 2004

- To take measures to improve the trend at mills where there has been unfavourable development in the number of accidents and absences due to sickness.  
→ Improvement seen in many units, for example, in the Wood Products Division.
- To include OHS issues in the personal performance review targets.  
→ Achieved.

- To develop reporting.  
→ Work started; quarterly reporting introduced in 2005.

#### TARGETS FOR 2005

- To further develop reporting.
- To draft and implement an OHS strategy.
- To launch the co-operation network.
- To reduce accidents at work and stop increase of absences due to sickness.



cessful. From the beginning of 2005, only maintenance contractors whose employees have received relevant training will be able to carry out work at UPM's mills. In the long term, UPM's occupational safety organisation aims at creating a similar system in other countries where the Group operates.

#### NEW METHOD FOR DEVELOPING SAFETY

UPM has been involved in a project run by the Work Science unit of the University of Oulu on developing an Occupational Safety Index, which is a method for maintaining

and improving occupational safety. It gives the employees the opportunity to monitor their own performance in the development of occupational safety and forecasts future trends. The Occupational Safety Index can be tailored to the conditions of each work place. It was tested in 2004 at Raflatac's factory in Tampere and at the Kajaani paper mill, on one production line at each of these sites. The results are encouraging: for example in Kajaani, accidents have decreased substantially. During 2005, these indicators will be adopted more widely at Raflatac and at the Kaukas mill.

#### ACCIDENTS AND ABSENCES

In 2004 the trend in the number of accidents at work was favourable. Accidents decreased at many of the mills. Conversely, the target for reducing absences due to sickness was not reached, even though absences decreased at a number of mills.

No fatal accidents occurred during the year among the Group's employees. Three people employed by UPM's subcontractors were fatally injured at UPM's mill sites: two at the Changshu mill and one at the Korkeakoski sawmill.



## OPERATIONS EXPAND AT CHANGSHU

Paper machine investment in China meets growing demand in the Asian market. The investment will have multiple impacts on the surrounding society.



UPM's biggest current investment is taking shape at the Changshu paper mill in China. A second paper machine, due to start up in summer 2005, is being built alongside the existing fine paper machine. The machine will produce uncoated fine paper and its production capacity will be 450,000 tonnes a year. UPM's total investment in the mill so far amounts to some one billion euros.

"Paper consumption is growing in China at a rate of eight to ten per cent a year and growth in other Asia Pacific countries is also substantial. UPM needs to be where the markets are. We can deliver quickly, even at a day's notice in China," says Hannu Jokisalo, General Manager of the Changshu mill. The mill has become localised at a fast pace: of the 600 production employees only Hannu Jokisalo and four others are from Finland.

The Changshu paper mill started operations in 1999. UPM initially held a minority

interest in the mill and became its sole owner the following year.

Besides the paper mill and sales network, UPM's Converting Division also has production facilities in China: in Shanghai and Guangzhou. Additionally the Group has a representative office in Beijing. Walki Wisa announced a project to build a converting factory in Changshu which will be completed in early 2006.

### PRODUCED PAPER SOLD MAINLY IN CHINA

The paper mill operates in eastern China, in the city of Changshu in Jiangsu province on the Yangtze River. The head office of UPM Sales and Marketing in China is 80 kilometres away in Shanghai, which is also the hub of sales for other parts of Asia Pacific. Other regional sales offices are located in Beijing, Wuhan and Guangzhou.



“Having our own sales network was essential. Our goods are sold to the end users either directly or through merchants and distributors,” says Bengt Sjöblom, Managing Director of UPM-Kymmene Asia Pacific.

The Changshu mill produces coated and uncoated graphic fine paper in reels and sheets for magazines, books, advertising materials and catalogues. Some 35 per cent of sales are office papers. Two thirds of the mill's output is sold in the Chinese market and the rest elsewhere in Asia Pacific.

Annual paper and board consumption in China amounts to some 30 kg per capita while the figure in the West is almost ten-fold. Consumption is very unevenly distributed and concentrated in the wealthier coastal provinces. China has been a member of the World Trade Organization for three years and is currently implementing the changes required for membership, which also will promote paper consumption.

“Environmental issues are not yet a major priority for Chinese paper merchants, but awareness is growing. The Chinese government understands the importance of these matters and change may prove to be very rapid,” says Sjöblom.

More than half the products are shipped from the mill along the Yangtze River. Some ten per cent are carried by rail and the rest by road. The respective shares of transportation methods will remain the same after the completion of the new paper machine.

As elsewhere in the world UPM aims to develop long-term contracts with hauliers. “This gives us more opportunity to work with contractors to ensure sustainable operating practices” says York Fang, UPM Logistics Director for the Asia Pacific Region.

The UPM Cargo Handling Manual is now available in Chinese and practical implementation has begun. “We’ve started with proper cargo handling and are moving on to employee safety issues. Operating in China differs from Europe – you have to take one step at a time,” says York Fang.

#### IMPORTANT LOCAL TAXPAYER

The Changshu paper mill was built on an industrial site established by the local authority, which now houses numerous companies from various countries. In terms of turnover and net investments, UPM is the biggest company in the area. Inhabitants of the former farming area were relocated to a nearby residential area. The authorities paid compensation to these people and

#### Key figures at Changshu paper mill

	2004	2003	2002
Paper production, t	350,000	350,000	323,000
<b>PERSONNEL</b>			
Permanent personnel, 31 Dec.	599	635	603
– female	91	92	92
– male	508	543	511
– white collar	225	248	160
– blue collar	374	387	443
Average time spent in training, days <sup>*)</sup>	9.2	5.9	11.8
Accident frequency (blue collar) <sup>**)</sup>	11.68	12.3	25.0
Absences, %	0.97	0.92	0.94
<b>EFFLUENT LOAD</b>			
Biological oxygen demand, t	20	25	40
Chemical oxygen demand, t	120	160	230
<b>EMISSIONS INTO THE AIR</b>			
Acidifying flue gases			
– sulphur (SO <sub>2</sub> ), t	400	540	500
– nitrogen (NO <sub>x</sub> ), t	370	350	140
Fossil carbon dioxide (CO <sub>2</sub> ), t	599,000	501,000	490,000
Solid waste to landfill, t <sup>***)</sup>	2,200	800	730

<sup>\*)</sup> The mill's ISO compliant systems were certified in 2002–2003 and the entire personnel participated in the relevant training.

<sup>\*\*)</sup> Number of accidents resulting in one or more days of incapacity for work per million working hours.

<sup>\*\*\*)</sup> Also includes waste from investment project.

the companies have offered them jobs – UPM has employed several hundred.

“We have excellent, well established relations with the authorities. We’ve introduced them to our working principles and the Corporate Responsibility report in a lot of detail. Corporate responsibility is still a fairly new concept for the local community,” says Jason Miao, Governmental & Legal Affairs Coordinator at the paper mill.

As a company with a relatively high turnover and a large staff, the UPM Changshu mill contributes to the local tax revenue in many ways. In accordance with present national tax laws, the Company enjoys a limited period of preferential tax treatment granted to foreign investments in respect of enterprise income tax.

#### SUPPORT FOR SCHOOLING

UPM participates in nationwide projects through its Beijing Representative Office. UPM participates in the activities of the European Chamber of Commerce, which has established a subgroup for corporate responsibility issues.

UPM also takes part in the activities of various Chinese paper industry organisa-

tions, for example the China Paper Association and the Jiangsu Paper Association.

UPM has its own scholarship programme in China. It has granted scholarships for students in the Nanjing University environmental study programme for three years, and in 2004 UPM launched support for Finnish language students at the Beijing Foreign Language University. Two academic scholarships for paper and printing technology are also planned.

“We are participating in a project, through a Chinese-American non-governmental organisation, to help secure basic education in China's poorest areas. Our donations have been used to set up a seedling nursery, and its revenue has in turn been used to provide free primary education. We're planning to continue similar projects to help people generate income in sustainable ways. The proceeds will be used for basic education and environmental training,” says Director Soile Korhonen from UPM's Representative Office in Beijing.

#### PERSONNEL IS YOUNG

Changshu mill's regular personnel numbers 600 at present. In addition, UPM employs



several local subcontractors and service providers. When the second paper machine goes on stream, the number of permanent personnel will increase to 820. The employees are young, with 28 being the average age.

Payroll costs are lower in China than in Europe. Whilst raw materials must be purchased at world market prices, salaries are paid at local rates, which means that as a percentage of the total production expenditure the payroll is relatively small.

“The mill has a pay rating system based on the demands of each job. UPM pays various social security related contributions amounting to 40 per cent of the payroll. We regularly monitor that the statutory social security contributions have also been paid for those working for contractors within the mill,” says HR Director Sunny Liu.

The wages and salaries are adjusted annually based on job performance and the cost index. Other compensation follows general Group practices.

The mill initiated negotiations in early 2005 to set up a trade union branch under the official All China Federation of Labour Unions for the mill. Each month employees have had the opportunity to voice their concerns in a consultative council held with the mill management team. Employees elect representatives for their respective depart-

ments and these attend and raise issues concerning work, conditions, pay, leisure activities, etc.

The mill invests strongly in vocational and other training. Operators for the new machine have been trained in co-operation with the local vocational institute on its newly founded UPM Paper Makers line. The training is based on UPM's own multimedia system. The mill's training centre also has an e-learning environment providing further training.

Focal areas in the 2004 training programme included teamwork, interactive skills and management training. “We're also encouraging the entire workforce to learn English. They receive an incentive for participating in language courses outside working hours,” says Sunny Liu.

#### OCCUPATIONAL SAFETY MANAGEMENT SYSTEM PREPARED

The mill is preparing an occupational health and safety management system based on the international OHSAS 18001 specification, which is due to be certified in April 2005. The Group's Work Safety Organisation carried out a preliminary audit in autumn 2004. It concluded that managerial commitment to improving safety at work was good. Occupational safety organisation was well covered throughout the mill and occupational safety

training was also well distributed. Areas for improvement identified include improving road safety, risk recognition and assessment in the workplace.

Safety campaigns on various topics are arranged at the Changshu mill each year. Fire safety was the theme for 2004.

Two fatal accidents occurred in the mill area in 2004 involving contractors' employees working on the paper machine project.

The number of sick leave days tends to be low, due in part to a young and motivated workforce. Employees receive full pay for a maximum of four days per year. Thereafter it is related to the employee's length of service and the duration of absence, but ranges from 40 percent to full pay. The mill has its own occupational health centre with two full-time doctors and a nurse in attendance.

#### ENERGY FROM COAL

The Changshu mill has its own power plant with enough capacity to keep both paper machines running. The mill is also connected to the grid to level out any consumption peaks. The new standby boiler built for steam production has been connected to the natural gas network, which started distributing gas at the end of 2004.

The main fuel used in China is coal. It is not feasible to expect coal to be given up as an energy source in the near future. The coal





is brought in by barges along the Yangtze River from two inland provinces.

"We purchase coal from large, recognised, state-owned mining companies either directly or through an agent. We know the origin. This allows us to ensure that safety at the mines has been managed according to best Chinese standards. By knowing our source, we can refrain from using illegal coal," says Changshu General Manager Hannu Jokisalo.

#### ORIGIN OF PULP VERIFIED

The mill's most crucial raw material is chemical pulp purchased from abroad. Short-fibre pulp is brought in from Indonesia and long-fibre pulp from North America and Finland. UPM audited the pulp suppliers during 2004. The short-fibre pulp is made of raw material from acacia plantation forests. The origin is checked by analysing the fibre structure in incoming batches.

Contracts have already been made with South American suppliers for the pulp required for the new paper machine. The supplier selection process assessed pulp quality and suppliers' environmental management and social responsibility. The suppliers are committed to compliance with UPM policies and the contracts include a clause for misconduct. UPM audits the quality and environmental management of its pulp suppliers on an annual basis.

#### RECOGNITION FOR ENVIRONMENTAL PERFORMANCE

The mill's key environmental targets concern reductions in water and energy consumption. Water consumption has gone down from 9.4 cubic metres per tonne of paper produced in 2003 to 7.7 cubic metres in 2004. The target for 2005 has been set at 6.5 cubic metres

per tonne. The effluent and emission volumes are well below the BAT levels laid down by the European Union.

The raw water is pumped from the Yangtze River and purified in the mill's own water facility. Wastewater is also purified in the mill's effluent treatment plant and then pumped back into the river. Changes have been effected at the treatment plant and the operating personnel have been trained to ensure a smooth start-up of the new paper machine.

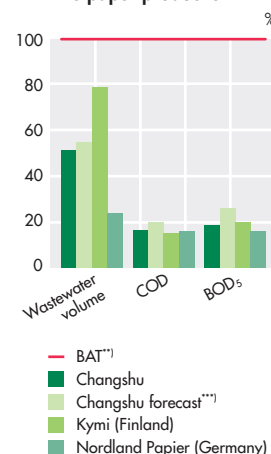
The mill has received a new environmental permit covering the production of the new paper machine. The mill's emissions are well below Chinese norms. The Changshu mill has an ISO 14001 environmental management system in place.

The power plant's environmental permit sets emission limits for dust and acidifying flue gases. Both airborne emissions and chemical oxygen demand emissions from the wastewater treatment plant are measured by continuous measuring instruments, also monitored by the Changshu environmental authority.

The largest individual waste fraction is ash from the power plant, sent for utilisation in road construction and the cement industry. Fibrous sludge from the effluent treatment plant is used as fuel at the power plant. Hazardous waste mainly consists of waste oils and chemicals, which are delivered to service providers who are licensed to process them.

The Changshu mill has received considerable official recognition for its environmental management. The Chinese authorities consider UPM's environmental performance exemplary and like to present it as a model for other companies.

**Specific effluent loads from UPM's uncoated fine paper production<sup>1)</sup>**



<sup>1)</sup> Figures are annual averages.

<sup>\*\*)</sup> Higher load of EU's BAT reference document as comparison level.

<sup>\*\*\*)</sup> Figures in the forecast are an estimate of specific emissions after start-up of new production line.

## ENVIRONMENTAL POLICY

UPM-Kymmene recognises the sustainable use of natural resources and environmental protection and management as a true prerequisite for sustainable economic growth, as well as for the well-being of people and society. In all parts of our activity, we aim to minimize the burden on nature and the environment, whether through direct or indirect effects, as far as raw material, production or other parts of products' life cycle are concerned.

### ENVIRONMENTAL PROTECTION AND ORGANISATION

Corporate governance and leadership are based on the company values of openness, trust and initiative. To take responsibility for all business decisions and actions is a prerequisite for a competitive and profitable business.

Environmental care is an integral part of this responsibility. This policy is implemented throughout the company at all levels and activities.

All business units on divisional and operational levels are responsible for ensuring that both targets set within the Group and statutory regulations and other obligations laid down by relevant organisations are met. Management systems in accordance with relevant international standards are used whenever applicable.

### OUR PEOPLE – A KEY RESOURCE

Environmental affairs are an inherent part of the work of our employees.

They are given both professional and general training in environmental matters. The aim is to develop everyone's ability to understand the general debate on environmental matters and readiness to take part in it, both in and out of work.

### PRODUCTION AND SUPPORTING OPERATIONS

Competitiveness in quality and costs are important factors when developing our products and their production processes. In addition, important objec-

tives are the efficient use of raw materials and energy, the recycleability of our products as raw material, and the possibility to utilise our products and by-products for their energy content or other end-use.

The majority of UPM-Kymmene's production is based on a renewable resource, wood. The Group is committed to forest management and forest harvesting practices based on the principles of sustainable development.

Our aim is to minimise the environmental load of the whole production chain. Best available techniques (BAT) and measures are used when changing and renewing production processes.

### COMMUNICATION

UPM-Kymmene communicates environment related matters with its stakeholders in a reliable, open and timely manner. Communications are carried out using different media according to the needs of the target group.

### DEVELOPMENT

Environmental legislation, stakeholders' expectations, and know-how on best available techniques will continue to develop. UPM-Kymmene will take account of these developments in its own operations.

The Group will actively encourage its partners to carry out their businesses in an environmentally responsible manner.

*The Board of Directors of UPM-Kymmene Corporation has approved the Environmental policy on 18 September 2002.*

## CORPORATE SOCIAL RESPONSIBILITY POLICY

The well-being of people and society is recognised to be the goal of sustainable economic growth.

Corporate governance and management in UPM-Kymmene is based on the company's values – openness, trust and initiative – and on the general principles of sustainable development, which emphasise the integration of economic, social and ecological goals in business activities. Responsible business practices are essential for ensuring competitive performance and profitability.

UPM-Kymmene is a worldwide, European based company that operates in different cultures and values cultural diversity. The company complies with international, national and local rules and regulations and international agreements. In the event that these prove to be insufficient or open to various interpretations, the company acts in accordance with its operating principles and best practices.

### STAKEHOLDERS

The company engages its various stakeholder groups through communication and dialogue. Stakeholder relationships are conducted with integrity, fairness and confidentiality.

Employee well-being and motivation are essential for UPM-Kymmene. The company provides opportunities for development and encourages a leadership culture that supports its values.

UPM-Kymmene supports the right to freedom of association and collective bargaining and does not tolerate the use of forced or child labour.

UPM-Kymmene aims at providing a healthy and safe working environment.

UPM-Kymmene products are safe throughout their whole life-cycle when used correctly.

UPM-Kymmene fulfils all its national and local legal and financial responsibilities and it supports the development of the local community where it has business operations. The company does not tolerate corruption or bribery in its operations. The company or an employee of the company should not be involved in business relationships which may lead to a conflict of interest.

### IMPLEMENTATION

This policy is implemented throughout the organisation at all levels and activities. The company is committed to the continuous improvement of its performance regarding the Corporate Social Responsibility policy by developing the necessary monitoring, controlling and reporting processes and procedures.

The company encourages its business partners to implement responsible practices which are consistent with UPM-Kymmene's Corporate Social Responsibility policy.

*The Board of Directors of UPM-Kymmene Corporation has approved the Corporate Social Responsibility policy on 19 March 2002.*



## CORPORATE SOCIAL RESPONSIBILITY POLICY, GLOSSARY

The aim of this glossary is to explain the meaning of some of the terms used in the Corporate Social Responsibility Policy document. It should be noted that the meaning of the terms may vary depending on e.g. the reader's cultural background.

### CORPORATE SOCIAL RESPONSIBILITY (CSR)

Corporate Responsibility consists of three pillars: economic, environmental and social responsibility. Corporate Social Responsibility, or CSR, deals with the company's responsibility towards its employees, society and the other stakeholder groups of the company.

### COMPANY VALUES

Openness in the workplace creates trust between people, which in turn leads to greater initiative.

Legislation and competition set limits for transparency for a listed company. The aim is to maintain an atmosphere of openness when interacting with stakeholders without compromising requirements for confidentiality.

### SUSTAINABLE DEVELOPMENT

UPM-Kymmene's objective is to be profitable without compromising the well-being of people and the environment. This means balancing the economic, environmental and social impacts of its activities.

### RESPECT FOR CULTURAL DIVERSITY

In its actions, UPM-Kymmene takes into account cultural differences in the local community where it operates. This includes respect for cultural or religious customs and practices, appreciation for cultural heritage sites etc. Respect for cultural diversity is not, however, an excuse for not living up to the standards set inside or outside the company relating to e.g. environmental protection, health and safety issues or good employee practices.

### RULES AND REGULATIONS AND INTERNATIONAL AGREEMENTS

The minimum requirement of responsibility for UPM-Kymmene is to comply with national and local rules and regulations, but it is understood that this is the minimum to fulfil the company's social responsibility.

By international agreements are meant those that the Finnish government (or the governments of countries where UPM-Kymmene operates) has ratified. These include or will include e.g. the United Nations Universal Declaration of Human Rights, the International Labour Organization Conventions and the Kyoto Protocol.

### OPERATING PRINCIPLES

These include all approved principles and policies inside UPM-Kymmene.

### BEST PRACTICES

Best practices means the best level of operation inside the industry, the geographical area or the issue at hand.

### STAKEHOLDER COMMUNICATION AND DIALOGUE

Stakeholders are all those groups that may have influence on UPM-Kymmene or on whom UPM-Kymmene may have influence.

Stakeholder engagement is based on UPM-Kymmene values. Openness with stakeholders creates the base for a relationship that is built on trust. This in turn leads to an active and supportive relationship between UPM-Kymmene and its stakeholders.

The aim is to be as transparent as possible. Sometimes, however, it is necessary to protect confidentiality for the benefit of the stakeholder relationship.

## OPPORTUNITIES FOR DEVELOPMENT

UPM-Kymmene offers its employees possibilities for personal development. Effort is also put into developing teams and the working atmosphere across the whole organization.

### FREEDOM OF ASSOCIATION AND COLLECTIVE BARGAINING

Freedom of association respects the right for all personnel to form and join trade unions of their choice and to bargain collectively. Where these rights are restricted by law, the company should provide an alternative channel to hear employee concerns. (Ref: ILO Convention 98)

### FORCED OR COMPULSORY LABOUR

All work or service that is extracted by any person under the menace of any penalty for which he/she has not offered him/herself voluntarily. (Ref: ILO Convention 105)

### CHILD LABOUR

The minimum age for employment is 15 years for regular, non-hazardous work and 18 for hazardous work. (Ref: ILO Convention 138)

### SAFE PRODUCTS

Looking after health, safety and the environment related matters is recognised as a company duty towards its stakeholders. The safety and harmlessness of production processes and raw materials used by the company are constantly measured and evaluated by proper up-to-date methods.

### SUPPORTING LOCAL COMMUNITY DEVELOPMENT

UPM-Kymmene contributes to and encourages its employees to participate in local community development in the communities where it operates. The aim is to provide employees and their families with decent living conditions and opportunities to express and develop themselves.

As a starting point these activities are the responsibility of the government. Where this is not the case, UPM-Kymmene is willing to take an active role in the local community.

### CORRUPTION OR BRIBERY

UPM-Kymmene's employees are not allowed to offer, promise, give or receive monetary or other advantages directly or indirectly to/from public officials or other parties with the intent of gaining improper business or personal gain. (Ref: OECD Anti-bribery Convention).

Gifts and normal hospitality are accepted, if the frequency and the value of the gifts are reasonable. More guidance in the "Basic Ethical Rules In Purchasing And Sales".

### MONITORING, CONTROLLING AND REPORTING PROCESSES AND PROCEDURES

UPM-Kymmene sets up processes and procedures to monitor and control the implementation of this policy and reports publicly on its results. Monitoring and controlling can be linked to existing systems e.g. internal and external audits, risk management etc. The principle medium for reporting is the annual corporate responsibility report.

# HUMAN RESOURCES POLICY

The management of Human Resources in UPM-Kymmene is based on the company's values – openness, trust and initiative – and on social responsibility.

The company complies with international, national and local rules and regulations and international agreements. In the event that these prove to be insufficient or open to various interpretations, the company acts in accordance with its operating principles and best practices.

UPM-Kymmene fosters a leadership culture that supports its values.

It actively promotes employee well-being and motivation and provides opportunities for development.

UPM-Kymmene respects the freedom of association and abides by legally binding collective agreements. Employee participation and consultation are organised in accordance with international and national rules and regulations.

The remuneration and benefits UPM-Kymmene provides meet with national legal standards, governing collective agreements and good local practice.

UPM-Kymmene promotes equal opportunities and objectivity in employment and career development and respects employee privacy. Discrimination or harassment is not tolerated.

UPM-Kymmene does not tolerate the use of forced or child labour.

If layoffs are imminent due to changes in the business environment, effort is made to relocate employees within the company, if necessary by means of reasonable retraining. In case redundancies are unavoidable social plans and financial compensations are agreed on locally in accordance with national rules and with regard for national social security.

UPM-Kymmene Human Resources policy is implemented throughout the company at all levels and activities.

*The Board of Directors of UPM-Kymmene Corporation has approved the Human Resources policy on 18 September 2002.*

## HUMAN RESOURCES POLICY, GLOSSARY

The aim of this glossary is to explain the meaning of some of the terms used in the Human Resources Policy document. It should be noted that the meaning of the terms may vary depending on e.g. the reader's cultural background.

### COMPANY VALUES

Openness in the workplace creates trust between people, which in turn leads to greater initiative.

Legislation and competition set limits for transparency for a listed company. The aim is to maintain an atmosphere of openness when interacting with stakeholders without compromising requirements for confidentiality.

### CORPORATE SOCIAL RESPONSIBILITY (CSR)

Corporate Responsibility consists of three pillars: economic, environmental and social responsibility. Corporate Social Responsibility deals with the company's responsibility towards its employees, society and the other stakeholder groups of the company.

### RULES AND REGULATIONS AND INTERNATIONAL AGREEMENTS

The minimum requirement of responsibility for UPM-Kymmene is to comply with national and local rules and regulations, but it is understood that is the minimum to fulfil the company's social responsibility.

By international agreements are meant those the Finnish government (or the governments of countries where UPM-Kymmene operates) has ratified. These include or will include e.g. the United Nations Universal Declaration of Human Rights, and the International Labour Organization Conventions.

### OPERATING PRINCIPLES

These include all approved principles and policies inside UPM-Kymmene.

### BEST PRACTICES

Best practices means the best level of operation inside the industry, the geographical area or the issue at hand.

### OPPORTUNITIES FOR DEVELOPMENT

UPM-Kymmene offers its employees possibilities for personal development. Effort is also put into developing teams and the working atmosphere across the whole organization.

### FREEDOM OF ASSOCIATION

Freedom of association respects the right for all personnel to form and join trade unions of their choice and to bargain collectively. Where these rights are restricted by law, the company should provide an alternative channel to hear employee concerns. (Ref: ILO Convention 98)

### EMPLOYEE PARTICIPATION

Examples of employee participation are co-operation within company, codetermination and employee representation in companies' decision making bodies.

### CONSULTATION

Consultation means the exchange of views and establishment of dialogue between the employees' representatives and the management. (Ref: Council Directive on European Works Council; UPM-Kymmene European Forum)

### COLLECTIVE AGREEMENTS

Collective agreement is an agreement concluded between a number of employees (normally a union) and one or more employers (normally an employers' association) governing pay and working conditions. Depending on contractual structures, local agreements and custom can form part of a collective agreement.

### EMPLOYEE PRIVACY

UPM-Kymmene respects the employees' private life and other basic rights safeguarding privacy. Personal data are processed in accordance with good processing practice.

### DISCRIMINATION

Any discrimination against employees on the basis of age, sex, health, national or ethnic origin, sexual preference, language, religion, opinion, family ties, trade union activity, political activity or any other comparable circumstance is prohibited.

### FORCED OR COMPULSORY LABOUR

All work or service that is extracted by any person under the menace of any penalty for which he/she has not offered him/herself voluntarily. (Ref: ILO Convention 105)

### CHILD LABOUR

The minimum age for employment is 15 years for regular, non hazardous work and 18 for hazardous work. (Ref: ILO Convention 138)

### REASONABLE RETRAINING

This term means an orientation-type of training which can be considered reasonable from the employee's as well as the employer's point of view having regard to time needed, costs, availability of training etc.

### SOCIAL PLANS AND FINANCIAL COMPENSATION

The measures of support in redundancies vary from one country to another depending on the social security structure and on the funding of unemployment benefits. In some countries a special social plan is compulsory in cases of collective dismissal.

# OCCUPATIONAL HEALTH AND SAFETY POLICY

## GUIDING VALUES AND PRINCIPLES

The health, safety and security of employees, visitors and all other people impacted by its operations are essential to UPM-Kymmene.

Occupational health and safety practices at UPM-Kymmene are based on the company's values – openness, trust and initiative – and on social responsibility.

The company complies with international, national and local rules, regulations and agreements. In the event that these prove to be insufficient or open to various interpretations, the company acts in accordance with its operating principles and best practices.

The company's occupational health and safety activities are directed by the principles of continuous improvement and emphasise quality and know-how.

## OBJECTIVES AND IMPLEMENTATION

UPM-Kymmene strives to provide a healthy and safe working environment. The company assumes its share of responsibility for the physical, mental and social well-being of its employees. The company's overall objective is to avoid employee suffering from occupational accidents or work related disabilities, while employed at UPM-Kymmene or during retirement.

In order to develop understanding of occupational health and safety matters and to encourage employee participation in its positive development, the company provides training in occupational health and safety.

UPM-Kymmene promotes a proactive approach to employee health care as part of its health and safety effort.

The company strives for the elimination of occupational accidents through the principle of zero tolerance for accidents. To reach this objective, each employee is required to assume responsibility for his or her working capacity and work premises.

The company encourages its business partners to implement practices which promote occupational health and safety.

UPM-Kymmene Occupational Health and Safety policy is implemented throughout the organisation at all levels and activities.

## COMMUNICATION

UPM-Kymmene communicates occupational health and safety related matters to its stakeholders in a reliable, open and timely manner in accordance with company values.

## FURTHER DEVELOPMENT

UPM-Kymmene develops its organisation and activities in occupational health and safety in accordance with best practices and available technology as well as by taking into account stakeholder interests.

*The Board of Directors of UPM-Kymmene Corporation has approved the Occupational Health and Safety policy on 18 September 2002.*

## OCCUPATIONAL HEALTH AND SAFETY POLICY, GLOSSARY

The aim of this glossary is to explain the meaning of some of the terms used in the Occupational Health and Safety (OHS) policy document. It should be noted that the meaning of the terms may vary depending on e.g. the reader's cultural background.

### EMPLOYEES, VISITORS AND OTHER PEOPLE IMPACTED BY THE COMPANY'S OPERATIONS

Industrial operations may affect people on site, in its immediate surroundings and throughout the whole supply chain. Hence OHS matters need attention both on site and, where applicable, outside of it.

## COMPANY VALUES

Openness in the workplace creates trust between people, which in turn leads to greater initiative.

Legislation and competition set limits for transparency for a listed company. The aim is to maintain an atmosphere of openness when interacting with stakeholders without compromising requirements for confidentiality.

## CORPORATE SOCIAL RESPONSIBILITY (CSR)

Corporate Responsibility consists of three pillars: economic, environmental and social responsibility. Corporate Social Responsibility deals with the company's responsibility towards its employees, society and other stakeholder groups of the company.

## RULES, REGULATIONS AND AGREEMENTS

The minimum requirement of responsibility for UPM-Kymmene is to comply with national and local rules, regulations and agreements, but it is understood that is the minimum to fulfil the company's social responsibility.

By international agreements are meant those the Finnish government (or the governments of countries where UPM-Kymmene operates) supports or has ratified. These include or will include e.g. the United Nations Universal Declaration of Human Rights, and the International Labour Organization Conventions.

## CONTINUOUS IMPROVEMENT

Continuous improvement is a process of enhancing the OHS management system, to achieve improvements in overall OHS performances, in line with the Group OHS policy.

## HEALTHY AND SAFE WORKING ENVIRONMENT

A healthy and safe working environment is free from unacceptable risk of harm. No employee is to suffer from negative mental or physical work-related effects.

## ZERO TOLERANCE

The principle for zero tolerance for accidents is built on the following:

- 1) no accident is in principle acceptable;
- 2) all dangerous situations should result in learning to avoid similar situations in the future;
- 3) all dangerous situations should be reacted to without delay and should be followed up on; and
- 4) health and safety matters concern each and every one.

## ENCOURAGING BUSINESS PARTNERS

UPM-Kymmene gives preference to business partners who maintain a systematic approach to OHS matters, and who honour OHS principles which are in compliance with UPM-Kymmene's OHS policy.

## OPERATING PRINCIPLES

These include all approved principles and policies inside UPM-Kymmene.

## BEST PRACTICES

Best practices means the best level of operation inside the industry, the geographical area or the issue at hand.



## Paper and pulp mills: production, releases into air and water and solid waste in 2004

MILL	PRODUCTION		EMISSIONS INTO WATER			EMISSIONS INTO AIR			SOLID WASTE to landfill, t
	paper t	pulp t	BOD <sup>1)</sup> t	COD t	AOX t	SO <sub>2</sub> <sup>2)</sup> t	NO <sub>x</sub> t	CO <sub>2</sub> (F) t	
Augsburg	425,000		5,130 <sup>3)</sup>	9,730 <sup>3)</sup>		0	40	175,000	0
Blandin Paper	331,000		15	– <sup>4)</sup>		100	390	111,000	960
Caledonian Paper	255,000		1,860 <sup>3)</sup>	5,000 <sup>3)</sup>		240	210	91,000	6,600
Changshu	349,000		20	120		400	370	599,000	2,200
Chapelle Darblay	344,000		55	880		40	690	151,000	8,800
Papeteries de Docelles	115,000		3	40		0	6	43,000	70
Jämsänkoski	741,000		40	1,340		290	380	135,000	11,200
Kaipola	639,000		110	2,200		250	350	100,000	10,000
Kajaani	549,000		100	2,180		200	190	163,000	2,300
Kaukas	543,000	674,000	370	12,910	130	1,330	2,230	223,000	15,200
Kymi	817,000	491,000	240 <sup>6)</sup>	9,590 <sup>6)</sup>	110	250	1,080	186,000	17,300
Loparex (Lohja)	60,000		75	400		180 <sup>5)</sup>	120 <sup>5)</sup>	46,000 <sup>5)</sup>	100
Miramichi	396,000	210,000	970	16,330	70	1,950	480	277,000	8,200
Nordland Papier	1,149,000		35	230		0	200	304,000	20
Pietarsaari	164,000	650,000	1,260	19,160	100	620	960	144,000	15,400
Rauma	1,053,000		290 <sup>7)</sup>	6,230 <sup>7)</sup>		160	500	112,000	570
Schongau	707,000		30	1,700		0	300	203,000	8,700
Schwedt	289,000		20	690		4	140	40,000	490
Shotton Paper	461,000		30	990		20 <sup>5)</sup>	260 <sup>5)</sup>	146,000 <sup>5)</sup>	17,100
Steyrermühl	472,000		65	1,320		3	510	250,000	5,900
Stracel	251,000		330	2,630		20	110	8,000	80
Tervasaari	402,000	218,000	310	3,410	0 <sup>8)</sup>	380	500	246,000	16,700
Voikkaa	375,000		0 <sup>6)</sup>	0 <sup>6)</sup>		4	290	81,000	2,500
Total	10,886,000	2,243,000	11,360	97,070	410	6,450	10,280	3,830,000	150,000

<sup>1)</sup> Emission defined as BOD<sub>5</sub> converted to BOD<sub>7</sub> by the co-efficient 1.16.<sup>2)</sup> Includes also odorous sulphur emissions.<sup>3)</sup> Effluent load before municipal treatment plant.<sup>4)</sup> COD is not monitored at Blandin.<sup>5)</sup> Includes also emissions of purchased heat.<sup>6)</sup> Effluent discharges of Voikkaa included in figures for Kymi.<sup>7)</sup> Includes effluent discharges from the Botnia Rauma chemical pulp mill and Rauma town.<sup>8)</sup> No chlorine chemicals used in chemical pulp bleaching.

## Plywood and veneer mills in Finland: raw materials and energy consumption, production, emissions into air and solid waste in 2001–2004

	2001	2002	2003	2004
Wood consumption, m <sup>3</sup>	2,000,000	2,100,000	2,200,000	2,200,000
Resin (dry), mill. kg	24	24	24	24
Films, mill. kg	6	5	5	5
Plywood and veneer production, m <sup>3</sup>	786,000	791,000	813,000	832,000
By-products (chips and sawdust), m <sup>3</sup>	675,000	664,000	674,000	675,000
Heat, GWh	750	770	770	800
Electricity, GWh	220	230	230	230
Solid waste to landfills, t	3,120	2,800	2,700	2,200
Hazardous waste for special treatment, t	220	330	500	350
Release into air from production and fuels <sup>1)</sup>				
CO <sub>2</sub> (F), t	24,300	20,900	4,570	6,800
NO <sub>x</sub> , t	170	180	180	190
SO <sub>2</sub> , t	120	85	15	15
Particulates, t	110	110	90	90

<sup>1)</sup> Emissions from purchased heat and electricity not included.

**Sawmills in Finland: raw materials and energy consumption, production and solid waste in 2001–2004**

	2001	2002	2003	2004
Wood consumption, m <sup>3</sup>	4,076,000	3,945,000	4,243,000	4,106,000
Production of sawn timber, m <sup>3</sup>	1,850,000	1,792,000	1,962,000	1,894,000
By-products (chips and sawdust), m <sup>3</sup>	1,753,000	1,787,000	1,875,000	1,858,000
By-products (bark), m <sup>3</sup>	391,000	280,000	345,000	366,000
Heat, GWh	530	500	500	510
Electricity, GWh	140	140	140	160
Solid waste to landfills, t	4,370	1,020	1,650 †	1,280
Hazardous waste for special treatment, t	45	50	50 †	80

**Converting Division: raw material consumption, production, emissions into air and solid waste in 2001–2004, tonnes<sup>1)</sup>**

	2001	2002	2003	2004
Papers, kraftliners and board	537,400	547,800	595,100	641,700
Plastics	54,500	68,000	74,100	81,500
Adhesives	50,400	59,000	65,300	64,400
Printing inks, lacquers	1,490	1,590	1,700	1,760
Aluminium foil	4,150	3,820	3,360	3,690
Production	631,500	655,800	681,200	735,200
VOC emissions from solvents	1,040	1,070	1,010	970
Solid waste to landfills	22,200	23,300	34,200	31,100
Hazardous waste for special treatment	960	1,360	1,440 <sup>**) </sup>	1,570 <sup>**) </sup>

<sup>1)</sup> Data on mills sold during the reported period are not included. Rafsec included since 2004.

<sup>\*\*)</sup>  Washing waters from Walki Wisa printing press in China included (90 tonnes in 2003, 85 tonnes in 2004)

**Converting Division: production broke in 2004**

	Recycled as material	Energy recovery	To landfill sites	Total
Walki Wisa,				
%	65.3	18.3	16.4	
tonnes	15,600	4,350	3,910	23,800
Raflatac <sup>1)</sup> ,				
%	6.1	31.6	53.3	
tonnes	1,810	9,430	15,900	29,800
Loparex,				
%	14.7	20.1	50.4	
tonnes	2,950	4,050	10,100	20,100

<sup>1)</sup> Rafsec included in Raflatac data.

**Converting Division:  
specific VOC emissions in 2004**

Walki Wisa	0.34 kg/t
Raflatac	0.34 kg/t
Loparex	6.10 kg/t
Rafsec	3.12 kg/t

Certification of Management Systems and Chain of Custody at UPM<sup>1)</sup>

Division/function	System	Year of certification
<b>Paper- and pulp mills</b>		
Augsburg	EMAS	1997
	ISO 14001	1997
	ISO 9001	1995
	OHSAS 18001	2002
	Chain of Custody	2004
Blandin	ISO 14001	1999
	ISO 9001	1999
	OHSAS 18001	2002
Caledonian	EMAS	2004
	ISO 14001	1999
	ISO 9001	1992
	Chain of Custody	2003
Changshu	ISO 14001	2003
	ISO 9001	2004
Chapelle Darblay	EMAS	2004
	ISO 14001	1999
	ISO 9001	1996
Docelles	ISO 14001	2000
	ISO 9001	2004
	Chain of Custody	2004
Jämsänkoski	EMAS	2000
	ISO 14001	1997
	ISO 9001	1997
	OHSAS 18001	2003
Kaipola	Chain of Custody	2003
	EMAS	2003
	ISO 14001	2000
	ISO 9001	1997
	OHSAS 18001	2003
Kajaani	Chain of Custody	2003
	EMAS	2002
	ISO 14001	1998
	ISO 9001	1995
	OHSAS 18001	2001
Kaukas	Chain of Custody	2003
	EMAS	2002
	ISO 14001	2000
	ISO 9001 (paper)	1993
Kymi	Chain of Custody	2003
	EMAS	1999
	ISO 14001	1995
	ISO 9001	1993
Loparex Oy	OHSAS 18001	2003
	Chain of Custody	2003
	ISO 14001	2001
	ISO 9001	1995
Miramichi	ISO 14001	2004
	ISO 9001	1995
	OHSAS 18001	2004
Nordland	EMAS	1999
	ISO 14001	1999
	ISO 9001	1994
	Chain of Custody	2003
Rauma	EMAS	2001
	ISO 14001	2000
	ISO 9001	1994
	OHSAS 18001	2000
	Chain of Custody	2002
Schongau	EMAS	1996
	ISO 14001	1996
	ISO 9001	1996
	OHSAS 18001	2003
	Chain of Custody	2003

Division/function	System	Year of certification
Schwedt	EMAS	1997
	ISO 14001	1997
	ISO 9001	1995
	OHSAS 18001	2003
Shotton	ISO 14001	1997
	ISO 9001	1991
Steyrermühl	EMAS	1996
	ISO 14001	1996
	ISO 9001	1994
	OHSAS 18001	2004
Stracel	Chain of Custody	2001
	ISO 14001	1998
	Chain of Custody	2003
Tervasaari	EMAS	2004
	ISO 14001	1999
	ISO 9002 (PM 5/7)	1994
Voikkaa	ISO 9001 (PM 6)	1996
	EMAS	2002
	ISO 14001	1999
	ISO 9001	1997
	OHSAS 18001	2003
Wisapaper, Wisaforest (Pietarsaari)	Chain of Custody	2002
	EMAS	1999
	ISO 14001	1995
	ISO 9001	1992
	OHSAS 18001	2003
	Chain of Custody (pulp)	2002

**Wood Products Division**

Plywood and veneer production, FIN	ISO 14001	1998
	ISO 9001	1993
	Chain of Custody	2000
Timber production, FIN	ISO 14001	1999
	ISO 9001	1999
	Chain of Custody	2000
Steyrermühl Sägewerks-gesellschaft, A	EMAS	1996
	ISO 14001	1996
	OHSAS 18001	2004
	Chain of Custody	2001
UPM-Kymmene Otepää AS, EST	ISO 9001	2002
ZAO Chudovo-RWS, RUS	ISO 9001	2000

**Converting Division**

Raflatac		
Raflatac Oy, Tampere, FIN	ISO 9001	1992
Raflatac Ltd, Scarborough, UK	ISO 14001	1998
	ISO 9001	2002
	OHSAS 18001	2004
Raflatac SA, Nancy, FR	ISO 9001	1998
Raflatac SA, Barcelona, ES	ISO 9001	2001
Raflatac Shanghai, RC	ISO 9001	2004
Raflatac Oceana, AUS	ISO 9001	2004
Rafsec, Tampere, FIN	ISO 9001	2003

**LOPAREX**

Loparex Oy, Lohja, FIN	ISO 14001	2001
	ISO 9001	1995
Loparex Inc, Eden, USA	ISO 9001	2000
Loparex Inc, Iowa City, USA	ISO 9001	2000
Loparex Inc, Cullman, USA	ISO 9001	1999
Loparex Inc, Dixon, USA	ISO 9001	1999



Division/function	System	Year of certification
Loparex Ltd, Glossop, UK	ISO 9001	1989
Loparex BV, Apeldoorn, NL	ISO 9001	1993
<b>WALKI WISA</b>		
Walki Wisa, Pietarsaari, FIN	EMAS	1999
	ISO 14001	1997
	ISO 9001	1993
	OHSAS 18001	2003
Walki Wisa Converflex AB, Örnköldsvik, SE	ISO 14001	2002
	ISO 9001	2004
Walki Wisa, Valkeakoski, FIN	ISO 9001	1991
Walki Wisa, Steinfurt, DE	ISO 9001	1993
Walki Wisa, Jülich, DE	ISO 9001	1994
Walki Wisa Ltd, Garstang, UK	ISO 9001	1989
<b>Forestry, Energy, Logistics</b>		
<b>FORESTRY</b>		
UPM Forest, FIN	ISO 14001	1998
	EMAS	1999
	ISO 9001	1998
	Chain of Custody	2000
Haindl Holz, DE	ISO 14001	1997
	EMAS	1997
	ISO 9001	1995
	Chain of Custody	2002
	OHSAS 18001	2004
Frischholz, AUT	ISO 14001	1996
	EMAS	1996
	ISO 9002	1994
	Chain of Custody	2001
	OHSAS 18001	2004
Tilhill Forestry, UK	ISO 14001	2003
	ISO 9001	2003
	Chain of Custody	2003
	OHSAS 18001	2003
Stracel S.A., FR	Chain of Custody	2003
Miramichi Woodlands, CAN	ISO 14001	2001
	SFI	2002
Blandin, USA	ISO 14001	1999
	SFI	2002
<b>ENERGY</b>		
UPM Energy, Hydro power plants	ISO 14001	1999
<b>LOGISTICS</b>		
Nortrans Speditionsgesellschaft mbH	ISO 14001	1998
	ISO 9001	1998
UPM-Kymmene Sales GmbH, Logistics Department	ISO 9001	2001
Oy Rauma Stevedoring Ltd	ISO 14001	2003
	ISO 9002	1994
	OHSAS	2003
UPM-Kymmene Oyj, Seaways	ISO 14001	2001
	ISO 9001	2001
UPM-Kymmene n.v./s.a.	ISO 9001	2000
UPM-Kymmene Sp. z o.o.	ISO 9001	2004

<sup>\*)</sup> With respect to the quality systems, the table gives the standard currently in use at each unit. Several of the ISO 9001 and ISO 9002 standards previously used at the units have been substituted by the new ISO 9001:2000 standard.

## UPM's material balance in 2004

## RAW MATERIALS AND ENERGY

Wood	26,700,000 m <sup>3</sup>
Market pulp	1,300,000 t
Recovered paper	2,800,000 t
Purchased paper and board (for converted products)	340,000 t
Minerals	2,600,000 t
Plastic films and granulates	80,000 t
Purchased electricity and own hydropower	14,000 GWh
Purchased fuels and heat	19,000 GWh

## EMISSIONS INTO AIR

SO <sub>2</sub> , sulphur dioxide	6,500 t
NO <sub>x</sub> , nitrogen oxides	10,500 t
CO <sub>2</sub> (F), fossil carbon dioxide	3,900,000 t

## EMISSIONS INTO WATER

COD <sup>*)</sup>	97,000 t
BOD <sup>*)</sup>	11,400 t
AOX	410 t

## SOLID WASTE

To landfills	180,000 t
Hazardous waste for special treatment	3,700 t

## PRODUCTS SOLD

Paper <sup>*)</sup>	10,500,000 t
Pulp	200,000 t
Fluff pulp	70,000 t
Converted products	730,000 t
Plywood and veneer	970,000 m <sup>3</sup>
Sawn timber	2,400,000 m <sup>3</sup>
Heat	660 GWh

<sup>\*)</sup> Production volumes differ from the overall output of the paper mills because the paper purchased by the converting factories from the Group's paper mills has been deducted from the products sold.

<sup>\*\*)</sup> Information on wastewater discharges also includes the wastewater load from the Augsburg and Caledonian mills to municipal treatment plants.

	Austria	Canada	Estonia	Finland	France	Germany	Russia	UK	USA	Total
<b>Sources of wood in 2004, % of wood consumption</b>										
Company forests	0	1	0	8	0	0	0	0	20	7
Leased forests	0	50	0	0	0	0	0	0	0	4
State forests	4	1	22	2	27	26	100	60	53	6
Private forests	33	48	5	70	24	74	0	40	22	66
Import	63	0	73	20	49	0	0	0	5	18
Total	100	100	100	100	100	100	100	100	100	100

**Country of origin 2004, %<sup>1)</sup>**

Belgium	–	–	–	–	14	–	–	–	–	
Canada	–	–	–	–	–	–	–	–	100	
Czech	22	–	–	–	–	–	–	–	–	
Estonia	–	–	–	5	–	–	–	–	–	
Germany	76	–	–	1	81	–	–	–	–	
Latvia	–	–	–	8	–	–	–	–	–	
Lithuania	–	–	–	1	–	–	–	–	–	
Russia	–	–	100	72	–	–	–	–	–	
Slovakia	–	–	–	–	–	–	–	–	–	
UK	–	–	–	9	–	–	–	–	–	
Uruguay	–	–	–	4	–	–	–	–	–	
Others	2	–	–	0	5	100	–	–	–	
Total	100	–	100	100	100	100	–	–	100	

<sup>1)</sup> Only countries from which at least 10,000 m<sup>3</sup> of wood has been imported have been specified, other countries are in the group "Others".

**State of forest certification in the countries or provinces/states where UPM has wood procurement units, million ha**

	NB								MN	
Total forest area	3.9	6.1	2.1	22.8	15.3	10.7	851.4	2.8	6.0	
PEFC certified forests	3.9	–	–	22.4	3.5	7.0	–	0.0	–	
FSC certified forests	0.0	–	1.1	0.0	0.0	0.5	2.1	1.2	0.3	
SFI certified forests	–	4.7	–	–	–	–	–	–	0.7	
ATFS certified forests	–	0.0	–	–	–	–	–	–	0.4	

NB = New Brunswick, MN = Minnesota, PEFC = Programme for the Endorsement of Forest Certification Schemes, FSC = Forest Stewardship Council, SFI = Sustainable Forestry Initiative, ATFS = American Tree farm System

**Forest certification schemes used by UPM in forest management or wood procurement**

National	PEFC	–	–	FFCS	PEFC	PEFC	–	UKWAS	SFI	
International	PEFC	SFI	–	PEFC	PEFC	PEFC	–	FSC	SFI	

**Percentage of certified wood delivered to the mills according to a verified Chain of Custody delivered to UPM mills, %**

	76	<sup>1)</sup>	<sup>2)</sup>	73	45	88	0	98	<sup>3)</sup>	
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<sup>1)</sup> 54 per cent of the wood consumed in 2004 was from the certified company and licensed forests of UPM, Chain of Custody is in progress.

<sup>2)</sup> 17 per cent of the wood consumed in 2004 was bought direct from the certified state forests in Estonia.

<sup>3)</sup> 71 per cent of the wood consumed in 2004 was from either certified forests or forests audited by a third party, Chain of Custody is in progress.

# COMPARISON OF THE REPORT CONTENT WITH THE PRINCIPLES OF THE GLOBAL COMPACT AND THE CORRESPONDING INDICATORS OF THE GLOBAL REPORTING INITIATIVE

UPM has undertaken to comply with the principles of the UN Global Compact Initiative. This Corporate Responsibility Report has been compiled applying the guidelines of the Global Reporting Initiative.

In the table below are listed the pages where the Company's actions to implement the principles of the Global Compact and the results of said action and the corresponding GRI indicators are discussed. Economic indicators are found in the UPM Annual Report ([www.upm-kymmene.com](http://www.upm-kymmene.com)), on the cover of this report and on pages, 5 and 12–15.

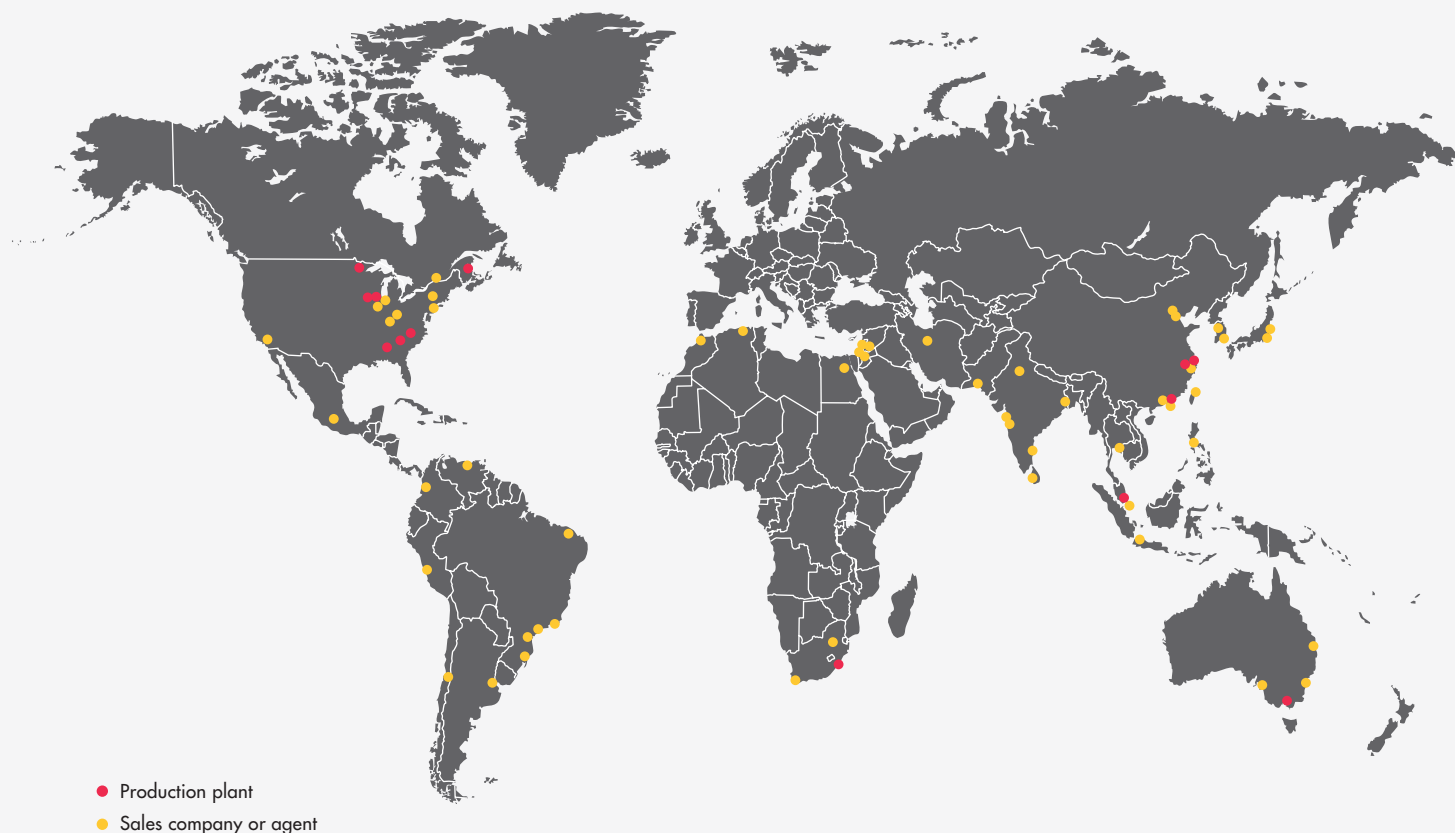
Principles of the Global Compact	Global Reporting Initiative (GRI) indicators		Pages in the report	
<b>Human Rights</b>				
1. Businesses should support and respect the protection of internationally proclaimed human rights within their sphere of influence; and	HR1	Human rights related policies	28–29, 38, 46–48	
	HR2	Considering human rights in investment/procurement		
	HR3	Human rights in the supply chain		
2. make sure that they are not complicit in human rights abuses.	HR4	Policies preventing discrimination		
<b>Labour Standards</b>				
3. Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;	HR5	Freedom of association	37–38, 46–48	
	LA3	Employee representation, collective bargaining		
	LA4	Consultation, negotiation & restructuring		
4. the elimination of all forms of forced and compulsory labour;	HR7	Policy preventing forced labour		
	HR6	Policy excluding child labour		
5. the effective abolition of child labour; and	HR4	Policies preventing discrimination		
	LA10	Equality policies and programmes		
6. eliminate discrimination in respect of employment and occupation.	LA11	Equality in senior management		
<b>Environment</b>				
7. Businesses should support a precautionary approach to environmental challenges;	3.13	Policies and management systems	cover, 5–7, 16–35, 46, 50–51, 54	
	EN1	Total materials used		
8. undertake initiatives to promote greater environmental responsibility; and	EN2	Waste usage		
	EN3	Direct energy use		
9. encourage the development and diffusion of environmentally friendly technologies.	EN4	Indirect energy use		
	EN5	Total water use		
	EN6	Land ownership in biodiversity-rich habitats		
	EN7	Major impact on biodiversity		
	EN8	Greenhouse gas emissions		
	EN9	Use and emissions of ozone-depleting substances		
	EN10	NO <sub>x</sub> -, SO <sub>x</sub> - and other air emissions		
	EN11	Amount and type of waste		
	EN12	Discharges to water		
	EN13	Chemicals, oil and fuels spills		
	EN14	Environmental impacts of products		
	EN15	Recycling/reuse of products		
	EN16	Non-compliance in environmental matters		
	EN 17	Renewable energy and energy efficiency		
	EN22	Recycling and reuse of water		
	EN23	Land owned for production activities or extractive purposes		
	EN25–26	Impacts on protected and sensitive areas and resulting changes		
	EN31	Hazardous waste management		
	EN32	Discharge impact on ecosystems		
	EN33	Supplier environmental performance		
	EN34	Environmental impacts of logistics		
	EN35	Environmental expenditures		
<b>Anti-corruption</b>				
10. Businesses should work against corruption in all its forms, including extortion and bribery.	SO2	Policies addressing bribery and corruption		6, 46

[www.unglobalcompact.org](http://www.unglobalcompact.org)

[www.globalreporting.org](http://www.globalreporting.org)



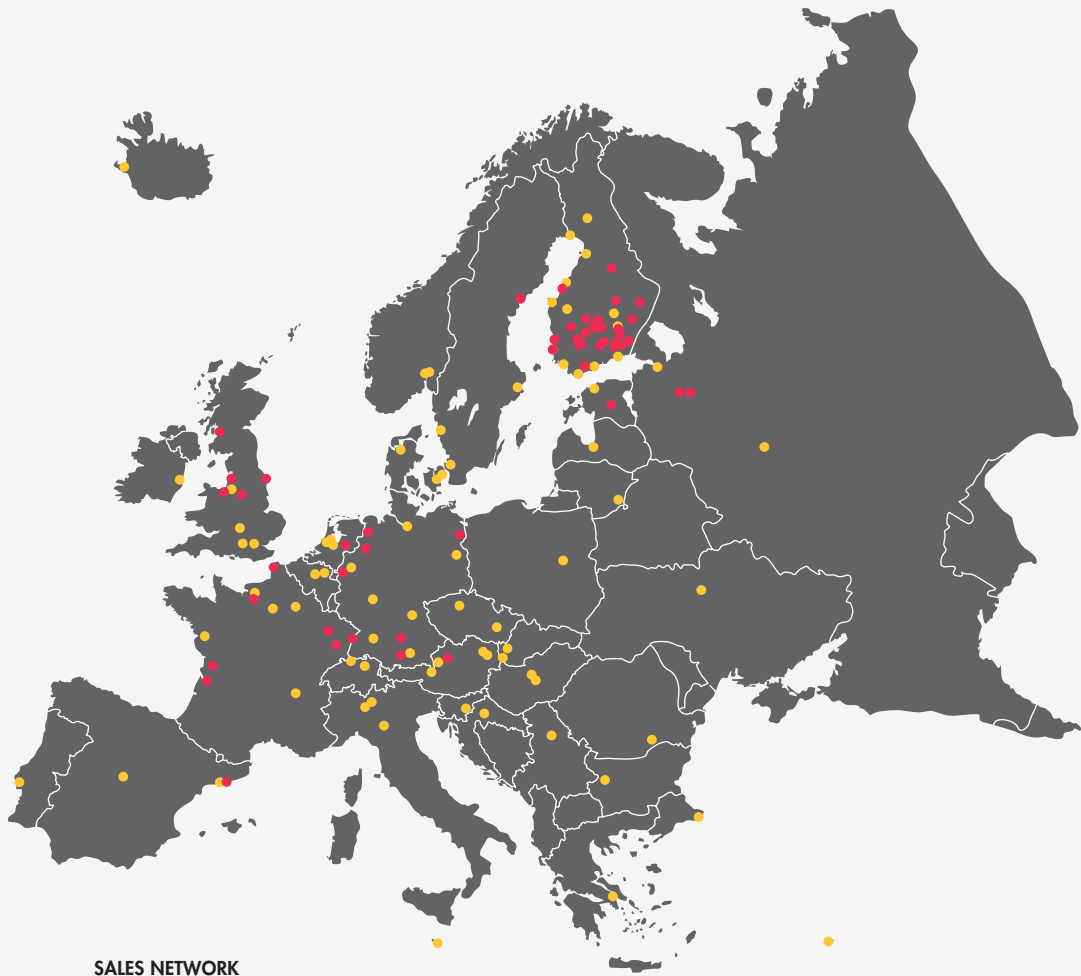
# PRODUCTION PLANTS AND SALES NETWORK



## PRODUCTION PLANTS

UPM refers to those companies whose official name includes UPM-Kymmene. Other names are the official names of units or companies.

<b>Australia</b> Raflatac, Braeside (Melbourne)	<b>Finland</b> Paper mills UPM – Jämsänkoski – Kaipola – Kajaani – Kaukas, Lappeenranta – Kymi, Kuusankoski – Rauma – Tervasaari, Valkeakoski – Voikkaa – Wisapaper, Pietarsaari	Sawmilling UPM – Alholma, Pietarsaari – Heinola – Kajaani – Kaukas, Lappeenranta – Korkeakoski, Juupajoki – Leivonmäki – Seikku, Pori	Veneer mills UPM – Kalso, Vuohijärvi – Keuruu – Lohja	<b>Great Britain</b> UPM – Caledonian Paper, Irvine – Shotton Paper, Shotton
<b>Austria</b> UPM, Steyrermühl  Steyrermühl Sägewerksge- sellschaft	<b>China</b> UPM, Changshu  Loparex, Guangzhou Raflatac, Shanghai Walki Wisa, Shanghai	Further Processing UPM – Alholma – Aureskoski – Heinola – Kaukas, Lappeenranta – Luumäki – Parkano	<b>France</b> UPM – Grand-Couronne – Docelles Stracel, Strasbourg  Raflatac, Pompey (Nancy)	Loparex, Glossop Raflatac, Scarborough Walki Wisa, Garstang
<b>Canada</b> UPM, Miramichi, New Brunswick	<b>Estonia</b> UPM, Otepää	Plywood mills UPM – Heinola – Joensuu – Jyväskylä, Säynätsalo – Kaukas, Lappeenranta – Kuopio – Lahti – Pellos, Ristiina – Savonlinna	UPM – Aigrefeuille – Boulogne sur Mer – Loulay	<b>Malaysia</b> Raflatac, Johor
	Converting plants Loparex, Lohja Raflatac, Tampere Walki Wisa – Pietarsaari – Valkeakoski Rafsec, Tampere		<b>Germany</b> UPM – Augsburg – Schongau – Schwedt Nordland Papier, Dörpen  Walki Wisa GmbH – Jülich – Steinfurt	<b>Netherlands</b> Loparex, Apeldoorn
				<b>Russia</b> ZAO Chudovo-RWS, Chudovo ZAO Pestovo Novo, Pestovo
				<b>South Africa</b> Raflatac, Pinetown
				<b>Spain</b> Raflatac, Polinyá (Barcelona)
				<b>Sweden</b> Walki Wisa, Arnäsfall



**SALES NETWORK**  
(countries listed below)

**United States**

Blandin, Grand Rapids, MN

**Loparex**

- Cullman, AL
- Dixon, IL
- Eden, NC
- Iowa City, IA
- Raflatac, Fletcher, NC

**North America**

Canada  
Mexico  
USA

**South America**

Argentina  
Brazil  
Chile  
Columbia  
Peru  
Venezuela

**Europe**

Austria  
Belgium  
Bulgaria  
Croatia  
Czech Republic  
Cyprus  
Denmark

Estonia  
Finland  
France  
Germany  
Great Britain  
Greece  
Hungary  
Iceland  
Ireland  
Italy  
Latvia  
Lithuania  
Malta  
Netherlands  
Norway  
Poland  
Portugal  
Rumania  
Russia  
Serbia and Montenegro  
Slovakia

Slovenia  
Spain  
Sweden  
Switzerland  
Turkey  
Ukraine

**Asia**

China  
Hong Kong  
India  
Indonesia  
Israel  
Iran  
Japan  
Jordan  
Lebanon  
Malaysia  
Pakistan  
Philippines  
Republic of Korea

Singapore  
Sri Lanka  
Syria  
Taiwan  
Thailand

**Africa**

Algeria  
Egypt  
Morocco  
South Africa

**Oceania**

Australia

# GLOSSARY

## Biofuel

Renewable fuel, such as bark, wood waste, black liquor from the pulp-cooking process and effluent treatment sludge.

## BOD

Biological Oxygen Demand. The amount of oxygen required for the biological decomposition of organic compounds contained in wastewater.

## Carbon dioxide, CO<sub>2</sub>

Combustion product of carbon. Carbon emissions arise from fossil fuels, for instance.

## Chain of Custody

A system for monitoring the origin and chain of custody of wood.

## COD

Chemical Oxygen Demand. The amount of oxygen required for the decomposition of organic compounds in wastewater, determined by chemical methods.

## Deinking

The process where the ink and impurities are removed from the recovered paper.

## EMAS

Eco-Management and Audit Scheme. A voluntary environmental management scheme for companies and organisations in the private and public sectors.

## GRI

Global Reporting Initiative. Institution for developing sustainability reporting guidelines.

## IPPC

The European Union's Integrated Pollution Prevention and Control Directive.

## ISO

International Organisation for Standardisation, whose ISO 9000 quality standards and 14000 environmental standards are extensively used in industry.

## Nitrogen oxides, NO<sub>x</sub>

A range of compounds formed in the combustion of nitrogen-containing material. Cause acidification of soil and waters.

## NYSE

New York Stock Exchange.

## OHSAS

Occupational Health & Safety Management System.

## Primary fibre

Virgin fibre, fibre used in the production of paper or board for the first time.

## REACH

EU's proposal for legislation on Registration, Evaluation and Authorisation of Chemicals.

## Recovered paper

Paper and board recovered for secondary use.

## Recovery rate

The ratio of recovered paper of all paper consumed.

## Recycled fibre

Fibre extracted from recovered paper.

## RFID sensor

Remote sensor based on radio frequency identification.

## Sarbanes-Oxley Act

The Act applies to stock exchanges monitored by the US Securities and Exchange Commission (SEC). The Act aims to improve the reliability of financial reporting.

## Sulphur dioxide, SO<sub>2</sub>

Compound formed in combustion of sulphur containing material. Causes acidification of soil and waters.

## TRS

Total Reduced Sulphur. Malodorous sulphur compounds.

## VOC

Volatile Organic Compounds. Involved in ozone formation in the troposphere.

*For the glossaries related to respective UPM policies, see pages 48–49.*



The Corporate Responsibility Report is published in Finnish, English, Swedish, German and French. A total of 120,000 copies were issued. The report is distributed to UPM's various stakeholders, and it can also be ordered from the Group's outlets in the various countries or through our web site. It is available on our web site in Finnish and Swedish at <http://www.upm-kymmene.fi>, in English at: <http://www.upm-kymmene.com> and in German at <http://www.upm-kymmene.de>.

## UPM-KYMMENE CORPORATION

### Hannu Nilsen

Senior Vice President, Corporate Responsibility  
P.O. Box 40  
FI-37601 Valkeakoski, Finland  
[hannu.nilsen@upm-kymmene.com](mailto:hannu.nilsen@upm-kymmene.com)  
Tel. +358 204 16 2250  
Fax +358 204 16 2219

### Marja Tuderman

Vice President, Environmental Affairs  
P.O. Box 380  
FI-00101 Helsinki, Finland  
[marja.tuderman@upm-kymmene.com](mailto:marja.tuderman@upm-kymmene.com)  
[environment@upm-kymmene.com](mailto:environment@upm-kymmene.com)  
Tel. +358 204 15 0395  
Fax +358 204 15 0310

### Päivi Salpakivi-Salomaa

Director, Environmental Forestry Affairs  
P.O. Box 32  
FI-37601 Valkeakoski, Finland  
[paivi.salpakivi@upm-kymmene.com](mailto:paivi.salpakivi@upm-kymmene.com)  
Tel. +358 204 16 3862  
Fax +358 204 16 120

### Anja Silvennoinen

Vice President, Energy  
P.O. Box 380  
FI-00101 Helsinki, Finland  
[anja.silvennoinen@upm-kymmene.com](mailto:anja.silvennoinen@upm-kymmene.com)  
Tel. +358 204 15 0733  
Fax +358 204 15 0334

### Riitta Savonlahti

Executive Vice President, Human Resources  
P.O. Box 380  
FI-00101 Helsinki, Finland  
[riitta.savonlahti@upm-kymmene.com](mailto:riitta.savonlahti@upm-kymmene.com)  
Tel. +358 204 15 0048  
Fax +358 204 15 0309

### Corporate Communications

P.O. Box 380  
FI-00101 Helsinki, Finland  
[communications@upm-kymmene.com](mailto:communications@upm-kymmene.com)  
Tel. +358 204 15 0020  
Fax +358 204 15 0308

### Investor Relations

P.O. Box 380  
FI-00101 Helsinki, Finland  
[ir@upm-kymmene.com](mailto:ir@upm-kymmene.com)  
Tel. +358 204 15 111  
Fax +358 204 15 0303





[www.upm-kymmene.com](http://www.upm-kymmene.com)