

Green, Forever

Oji Paper Group Environmental and Sustainability Report 2005





#### About the cover photo

#### Have you ever seen the flowers pictured on the cover?

These are budding flowers on eucalyptus trees, which the Oji Paper Group is planting overseas at a rapid rate. As can be seen in the picture, the eucalyptus flower is at first contained within a vessel known as a capsule. When the capsule matures, the flower blooms, revealing the stamens.

(Species: Eucalyptus Globulus)







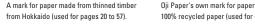
timber (used for pages 20 to 57).



from Hokkaido (used for pages 20 to 57).











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#### About this report

The Oji Paper Group recognizes that its social responsibility is to meet the world's demand for paper while pursuing business development with great concern for the global environment. This report covers the Group's efforts to build a recycling-based business model, the details of which are presented in the Highlight section: "A Recycling-based Business Model for a Sustainable Way of Life for All." The Highlight section was prepared based on discussions on the meaning of sustainability for the Oji Paper Group among principal members of the Raw Materials & Purchasing Division, the Forest Department, the Wood Material Department, Oji Recovered Paper & Market Pulp, the Corporate Planning Division, and the Environmental Management Department.

#### Period of coverage

April 1, 2004 - March 31, 2005

Except for numerical data, some sections may contain information from April 2005 and later.

#### Reference guidelines

Environmental Reporting Guidelines (fiscal 2003 version), Ministry of the Environment, Japan.

Sustainability Reporting Guidelines 2002, Global Reporting Initiative (GRI).

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#### **Corporate Profile**

Company Name: Oji Paper Co., Ltd. Major Businesses: Manufacturing, processing and marketing

Headquarters: Ginza 4-7-5, Chuo-ku, Tokyo, Japan 104-0061

Established: Net Sales (fiscal year ended March year ended March Consolidated: ¥592, 324 million Year ended March

Representative Shoichiro Suzuki, President and CEO 31, 2005):

Director:

Number of Non-consolidated: 4,984

Paid-in Capital: ¥103,880 million

Non-consolidated: 18,634

Consolidated: 18,634

aid-in Capital: ¥103,880 million March 31, 2005):

#### Scope of This Report: Oji Paper Co., Ltd., and principal Oji Paper Group companies

Paper Manufacturing: •Oji Paperboard Co., Ltd. •Oji Nepia Co., Ltd. •Oji Specialty Paper Co., Ltd.

Paper Processing: •Oji Container Co., Ltd. •Oji Cornstarch Co., Ltd. •Yupo Corporation •Oji Kinocloth Co., Ltd.

•Oji Packaging Co., Ltd. •Chiyoda Container Corporation •Oji Tac Co., Ltd. •Oji Seitai Kaisha, Ltd.

•Shinomura Chemical Industry Co., Ltd. •Shizuoka Oji Container Co., Ltd. •Kyodo Shiko Co., Ltd.

 $^{\bullet} \text{Chuetsu Co., Ltd. } ^{\bullet} \text{Musashi Oji Container Co., Ltd. } ^{\bullet} \text{Chiyoda Corrugatedboard Co., Ltd.}$ 

•Oji Forest & Products Co., Ltd. •TAKASAKI KASEI Co., Ltd. •NIHON SEIKAHOSO Co., Ltd.

Service Provision: •Tomakomai Energy Kosha Co., Ltd. •Medical Corporation Oji General Hospital •DHC Ginza Co., Ltd.

•Oji Real Estate Co., Ltd. •Hotel New Oji Co., Ltd.

Oji Kaiun Co., Ltd. Oji Logistics Co., Ltd. Bando Transportation Co., Ltd. Kikkou Tsuun Co., Ltd. Okikou Tsuun Co., Ltd.

•Oji Land Transport Co., Ltd. •Fuji Rinkai Warehousing Co., Ltd. •Sankoh Transportation Co., Ltd.

•Hirata Warehouse Co., Ltd. •Honshu Toshin Co., Ltd.

#### Eliminations and consolidations

- \* On October 1, 2004, Oji Paper's Ebetsu Mill, Iwabuchi Mill, Nakatsu Mill and Shiga Mill were spun off and placed under Oji Specialty Paper. Fuji Paper's Dai-ichi Mill, Shibakawa Mill, Fuji Mill, Fujinomiya Mill and Shizuoka Mill also joined this group, bringing the total number of mills under Oji Specialty Paper to nine.
- \* In June 2004, Takasakisankoh Corrugatedboard Co., Ltd., became Oji Container's Takasaki Mill.
- \* On April 1, 2005, Oji Logistics and Fuji Rinkai Warehousing merged and were renamed as Oji Logistics.
- \* In May 2005, Oji Nepia's Tokyo Mill was closed permanently due to a fire that occurred on March 27, 2005.

#### **Major Mills**

#### Oji Paper Mills —

- ① Kushiro Mill ② Tomakomai Mill ③ Edogawa Mill
- 4 Fuji Mill 5 Kasugai Mill 6 Kanzaki Mill 7 Yonago Mill
- 8 Kure Mill 9 Tomioka Mill 10 Nichinan Mill

#### Oji Paperboard Mills -

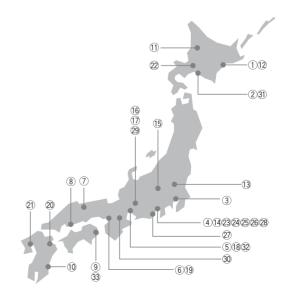
- 1) Nayoro Mill 12 Kushiro Mill 13 Nikko Mill 14 Fuji Mill
- 15 Matsumoto Mill 16 Ena Mill 17 Nakatsugawa Mill
- (18) Sobue Mill (19) Osaka Mill (20) Oita Mill (21) Saga Mill

#### Oji Specialty Paper Mills

- 22 Ebetsu Mill 23 Iwabuchi Mill 24 Dai-ichi Mill
- 25 Fuji Mill 26 Fujinomiya Mill 27 Shizuoka Mill

#### Oji Nepia Mills

 $\ensuremath{\mathfrak{Y}}$ Tomakomai Mill $\ensuremath{\mathfrak{Y}}$ Nagoya Mill $\ensuremath{\mathfrak{Y}}$ Tokushima Mill



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#### Message from the President & CEO

As we continue to communicate our commitment to forest recycling and paper recycling, the many misunderstandings that exist about the paper industry will eventually be dispelled.

Many people still seem to imagine paper companies in a rather negative light: cutting trees but neglecting forests by failing to replant, discharging polluted water into rivers, and bellowing smoke from their mills. Granted, until the early 1970s, most paper companies in Japan lacked adequate consideration for the environment. Indeed, the paper industry got a great deal of negative press when environmental concerns first emerged around that time. But the industry learned its lesson, and has been working hard ever since to reduce its environmental impact. It has vigorously promoted the recovery of used paper, established overseas tree plantations, and built up an impressive array of recycling technologies.

Despite these advances, the paper industry as a whole has yet to throw off these negative stereotypes. I believe this is due to insufficient efforts to make the public aware of its extensive environmental efforts. At the Oji Paper Group, we recognize that our social responsibility goes beyond reducing environmental impact. It also includes providing the public with the accurate information they need to understand that the Oji Paper Group is a responsible company that gives the environment the consideration and care it is due. Indeed, without the proper information, society may make decisions in the name of environmental conservation that actually end up damaging the environment.



#### Balancing environment and economy: Fulfilling our founder's ethos of contributing to society

Oji Paper was founded by Eiichi Shibusawa in 1873 at the beginning of Japan's modernization, in the belief that paper would be needed to increase access to education and preserve Japanese culture. Over the next 130 plus years, the Oji Paper Group has remained faithful to its founder's basic philosophy of contributing to the world.

Shibusawa bought a stand of forest and started to grow trees to make into raw material for papermaking. Today, we continue to follow his ideal of "supplying what we use"—every year we expand the total size of our tree plantations. Presently, we hold about 190,000 hectares of tree plantation land in Japan. We are planning to invest ¥20 billion to ¥30 billion to expand our overseas tree plantations to 300,000 hectares by 2010. These steps will enable us to supply a good share of our raw material needs from these plantations. We are also endeavoring to

practice sustainable forest management and obtain international certification that our forests are being responsibly managed.

The moral high ground, however, is not usually rewarded in the short term. It has proven difficult to obtain customer understanding for paper prices that reflect our scrupulous standards for procurement of raw materials. Frankly, society is not yet ready to shoulder its share of the cost of leading-edge environmental practices. Our solution to this has been technological innovation that enables us to match our competitors' prices and secure a reasonable profit—without compromising our environmental standards for procurement of raw materials.

I am committed to guiding the Oji Paper Group along the responsible path—making a decent profit without ever sacrificing the wellbeing of our employees, our stable position in the market, or our commitment to minimizing environmental impact.

Leadership Vision

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#### Setting the environmental standard for the pulp and paper industry in China

Our goal of 300,000 hectares of overseas tree plantations is daunting for us as a company, but is actually trifling on a global scale. Millions of hectares of forests will be needed to cover the future demand for paper in China alone, let alone the rest of the world. At the Oji Paper Group, we feel the responsibility to take the initiative and set the standard for the pulp and paper industry worldwide.

Going forward, the Oji Paper Group will expand its business in Southeast Asia and China, where per capita paper consumption is still small, aiming to contribute to both culture and education. In doing so, we will practice responsible procurement of wood raw material, building our business with careful strategies for the future of the paper industry in each region. In certain developing countries, where more work needs to be done to promote public awareness, illegal logging still sometimes takes place. We can address this by introducing methods of securing raw material that do not harm the environment, and of course, practicing what we preach.

Oji Paper is planning to invest ¥220 billion to construct a coated paper mill in the city of Nantong in Jiangsu Province, China. The mill, with an annual production capacity of 120 million tons, will be one of the largest in the world. It will represent one of the biggest investments made in China by any Japanese company. From start to finish, we plan to use this project to set high standards for the pulp and paper industry when it comes to raw material procurement and environmental concern. Our hope is that the mill would define best practices for years to come in China.

#### Working to dispel misunderstandings about the recycling of recovered paper

The Oji Paper Group has been a driving force in the popularization of recycled paper in Japan, but some basic misconceptions about recycled paper still exist. People often think that used paper can be recycled over and over again. This is not the case. Paper is made of plant fibers. After being recycled a few times, the fibers in 100%

recycled paper become worn out and can no longer be recycled. This is why the ideal recycled paper content in Japan overall is about 60-70% recovered paper. For used paper to remain recyclable, the other 30-40% must come from virgin pulp. The Oji Paper Group does its utmost to use trees from its own tree plantations as fresh raw material. Moreover, when used paper can no longer be recycled, we use it as a source of energy, which saves fossil fuels and translates into reduced waste.

The public also has some incomplete ideas about treefree paper. Some people demand that the pulp and paper industry use grasses to make paper because they feel paper companies cut down trees and destroy forests. In Japan, it is now common to see business cards made of kenaf. However, reeds, straw, and kenaf contain much more inorganic matter than wood, which contains very little inorganic matter. This inorganic matter interferes with the process of recycling chemicals from the effluent that is generated during the process of producing tree-free paper, which means large quantities of polluted water must be discharged. If facts like these do not become better known, concern for the environment can actually have the opposite effect.

#### Sending an environmental message by opposing the proposed environmental tax

Global warming has become a concern around the world. The Oji Paper Group has set the target of reducing its emissions of carbon dioxide per ton of paper produced by 20% by fiscal 2010 compared to the fiscal 1990 level. Toward that end, we are reducing our consumption of oil and coal by installing five RPF boilers that use a fuel made of a mixture of waste plastics and paper that we used to incinerate as waste. Three of these boilers have already come on line.

We set the high target of reducing CO2 emissions per unit of output by 20% simply because we recognize this as our responsibility. There is a secondary benefit to the target, however, which is demonstrating to the world that a paper company is serious about reducing greenhouse

gas emissions. We have expressed opposition to the idea of an environmental tax because we feel it is vital to avoid laying all the blame for environmental problems at the feet of industry. Instead, we are striving to communicate to the public that industry is doing what it should and that society as a whole also needs to address these issues.

The environmental tax now under consideration in Japan is extremely unbalanced, placing quotas on only part of society—primarily industries that consume energy. Onesided changes like this will not lead to a real solution to environmental problems. We must change not only industry's energy use, but also the way individuals act—a nation of people who turn off the lights and take public transportation can make an enormous difference. It seems to me that most people support the environmental tax because they have heard it will not affect them much personally. Perhaps they can tolerate ¥500 more on their monthly household electricity bill or ¥1.5 per liter at the gas station, but will this change their own environmental behavior? It would be a very different story if the proposed environmental tax were to be borne equally by everyone, as it is in Europe.\*

The Oji Paper Group already pays large amounts of energy consumption tax. On top of that, we have established clear targets for levels of CO2 emissions, and have publicly declared our commitment to reaching them. I cannot stand idly by while paper companies are burdened with another tax on the false premise that our voluntary efforts to make reductions cannot be trusted, despite our track record and stated commitments. Our opposition to the tax does not mean we do not care about the global environment. Nothing could be further from the truth. Rather, our message is that society will not solve its environmental problems by scapegoating certain sectors. The real solution is motivating everyone to conserve.

#### \* Environmental tax in Europe

Out of the need to protect industry as the foundation of their national strength, European states apply only minimal environmental taxes to industry. Further, when they do have a tax, it is usually offset by policies such as a refund that in effect neutralize the tax.

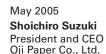
#### Clearly communicating the pulp and paper industry's position

The environmental tax issue alone illustrates how the paper industry is often misunderstood. But this is the industry's own responsibility: it has obviously not provided sufficient explanations of its position to the public. At Oil Paper, we recognize the need for more stakeholder dialogue, and believe that our views will eventually win the understanding of the public.

#### Making public commitments: Inviting accountability for environmental and cultural contributions

In June 2003, Oji Paper signed on to the United Nations' Global Compact. Public declarations like these are extremely important: when the president of the company shows this kind of commitment, it generates momentum and determination throughout the Group to get things done. Things happen faster when top management speaks out loud and clear. This is true whether trying to increase profits, doing more for the environment, or raising the ethical bar

The 21st century is the "century of the environment." At Oii Paper, we have clearly articulated our commitment to environmental and cultural contributions in our corporate philosophy. As we move forward, we will make every effort to remain a company that conducts all of its business with great respect for the environment and an earnest desire to contribute to a better way of life for all.







## Corporate Philosophy and Corporate Code of Conduct

The Oji Paper Group has inherited the fundamental values of the founder of Oji Paper, Eiichi Shibusawa, who frequently used two words—*rongo* (the Analects of Confucius) and *soroban* (abacus)—to emphasize the need to consistently combine good ethics with profitable business practices. The Group has articulated these values, which continue to serve as the basis of all its operations, in its corporate philosophy in the form of three goals: "Contribute to the protection of the environment and the advancement of culture," "Strive for continuous innovation in a proactive, responsive and determined manner," and "Build and maintain trust throughout the world." The information below describes the various elements of our commitment to this philosophy, and shows how they are related to each other and to earning the trust of all stakeholders.

#### Corporate philosophy

Contribute to the protection of the environment and the advancement of culture

founding in 1873, Oji Paper has upheld its corporate philosophy of contributing to the advancement of culture by providing a stable supply of paper. Oji Paper is committed to contributing proactively to the preservation of the environment and the building of a recycling-based society by practicing both forest recycling and paper recycling.

Paper is used in many ways in our lives—to read, write, wrap and clean. For over 130 years since its

Strive for continuous innovation in a proactive, responsive and determined manner

In today's rapidly changing business environment, management that responds flexibly, quickly and appropriately to change is the key to continuing to develop as a business and maintaining Oji Paper's position as an industry leader. In the 21st century, Oji Paper will continue to grow by remaining faithful to its heritage while boldly exploring new frontiers.

Build and maintain trust throughout the world

Oji Paper's business activities, which range from the planting of trees to raw material procurement, production and marketing, have taken on a global scope, and even its local operations are conducted with a global perspective. In its mainstay papermaking business and all its other business activities, Oji Paper will continue its untiring efforts to earn the trust and affinity of stakeholders, customers, business partners, local communities, governments and employees.

#### Corporate Philosophy

With pride in and recognition of its responsibilities as a leading paper company, Oji Paper will work to continuously improve itself and win greater trust worldwide.



#### Corporate Code of Conduct

We will undertake business activities based on an awareness of the Group's responsibilities as a corporate citizen and on high ethical standards worthy of society's trust.



#### Environmental Charter

In line with our global perspective, we will engage in business activities that respect the delicate balance of the environment, focusing on forest recycling and paper recycling.



#### **Environmental Action Plan 21**

This plan establishes quantitative targets for tree plantations, recovered paper utilization, energy conservation, waste reduction, and other issues that are to be achieved by fiscal 2010.



#### Oji Paper's participation in the Global Compact

In June 2003, Oji Paper became a member of the United Nations Global Compact. The Oji Paper Group then wrote the spirit of the Global Compact into its Corporate Code of Conduct and Conduct Regulations, which it puts into practice in all daily operations.

#### What is the United Nations Global Compact?

The Global Compact was proposed by United Nations Secretary General Kofi Annan in 1999 and officially inaugurated at UN Headquarters in New York in 2000. The Global Compact requires participating companies from around the world to uphold and practice ten principles in the areas of human rights, labor, the environment and anti-corruption. More than 2,300 companies worldwide, of which 39 are Japanese (as of October 2005), are participating.



#### Setting an example of sustainable industry

Global-scale environmental problems have become a major concern to people everywhere. The Oji Paper Group can make a unique social contribution by serving as a model of sustainable industry. The pulp and paper industry is unlike many other industries in that it can regenerate its own raw material by planting trees. Further, the trees planted then absorb carbon dioxide (CO2), the main cause of global warming. Environmental problems require action, not just words. Companies, governments and individuals must all act proactively to improve the environment. The Oji Paper Group hopes to continue to lead by example in the shared effort to build a sustainable way of life for all.

#### Oji Paper Group Corporate Code of Conduct

- I. We, the management and employees of the Oji Paper Group, hereby adopt the Oji Paper Group Corporate Code of Conduct, as detailed below, as guiding principles for corporate activities based on an awareness of our responsibilities as a good corporate citizen and on high ethical principles appropriate for an organization that enjoys the trust of society.
- II. We, the management and employees of the Oji Paper Group, will strive at all times to implement this Code, and to contribute to the genuine enrichment of society.

#### 1. Compliance with the law

We will comply with the letter and spirit of the law in Japan and other countries, respect corporate ethics and all social standards, including common sense, and ensure that our business activities are fair and honorable.

#### 2. Harmony with the environment

We will promote forest recycling and paper recycling and maintain and develop business activities that are in harmony with the environment from a global perspective.

## 3. Supply of safe, useful products and services

We will contribute to society and culture by developing and supplying products that will allow us to gain the satisfaction and trust of customers, with proper consideration for usefulness and safety.

#### 4. Communication with society

We will establish relationships of trust with all stakeholders, including customers, shareholders, and local residents, through an active commitment to good communication with society.

## 5. Participation in social contribution activities

We will contribute to the development and improvement of society through active participation in social contribution activities.

## 6. Coexistence with the international community

We will respect the culture and customs of other countries and contribute to local communities.

#### 7. Contribution through manufacturing

We will express our pride in our role as a manufacturer by contributing to local communities through production activities guided by a commitment to safety and protecting the environment, and by contributing to the advancement of industry through technology development and innovation.

#### 8. Achievement of employee satisfaction

We will take all possible steps to ensure employee health and safety, and we will strive to give employees opportunities to achieve happiness and prosperity and realize their potential as individuals.

## Highlight

A Recycling-based Business Model for a Sustainable Way of Life for All



Oji Paper's company-owned forest in Minamifurano, Hokkaido.

## The Oji Paper Group is working to recycle both forests and paper to ensure that paper will always be available.

Paper serves a vital function in record-keeping and communication. Its use has even been regarded as a measure of civilization, since paper consumption increases along with rising standards of living and industrial development. In line with this trend, Oji Paper forecasts that world paper consumption will grow dramatically from 339 million tons in 2003 to 460 million tons by 2015. Meeting this demand from the people of the world is clearly a social responsibility of the paper industry. At Oji Paper, we recognize that the production of paper uses timber, which is a global resource, and also emits CO2. Thus, we see sustainable procurement of raw materials, recycling of paper products, and efforts to reduce CO2 emissions as important responsibilities. The Oji Paper Group is practicing forest recycling (page 29) and paper recycling (page 33), two major initiatives guided by its Environmental Charter (page 27). We are committed to developing business practices that help to build a sustainable way of life for all.

#### Table 1

## Oji Paper Environmental Charter Environmental Action Plan 21

- Objective 1. Promotion of Overseas Plantations
- Objective 2. Promotion of Paper Recycling
- Objective 3. Promotion of Countermeasures for Global Warming Issues
- Objective 4. Strengthening Environmental Management Systems
- Objective 5. Reduction and Effective Utilization of Waste
  - \* For more details on the Environmental Action Plan 21, see page 27.

1 Oji Paper Group

Highlight: A Recycling-based Business Model



## The Oji Paper Group's Unique Recycling-based Business Model

Demand for paper is seeing explosive growth along with the ever-increasing world population. The Oji Paper Group is building a recycling-based business model, driven by its two key initiatives of forest recycling and paper recycling. At Oji Paper, we are committed to doing our part to create a sustainable way of life for all.

## Reuse of recovered paper: The biggest contributor to meeting the increasing demand for paper

At the end of 2001, world population stood at 6.1 billion. The United Nations predicts that the population will grow to 7.2 billion by 2015. Looking ahead, world demand for paper can be expected to spiral upward as the level of education in developing countries and other factors progress along with the ever-increasing population.

At the Oji Paper Group, we recognize that our social responsibility is to help meet the world's demand for paper, a vital tool in sustaining culture and supporting education. In addition to meeting the demand for paper, we are committed to combating global warming and working to reduce industrial waste. In all these things, our goal is to conduct our operations with respect for the integrity of the global environment. The Oji Paper Group sees its recycling-based business model (Figure 1)—which ensures business activities are developed according to the twin principles of forest recycling and paper recycling—as a means to meet the world's demand for paper while also giving the global environment the care and concern it deserves.

The Oji Paper Group has articulated its recycling-based business model in the Oji Paper Environmental Action Plan 21 (page 27), which we revised most recently on April 1, 2005. In January 2005, President and CEO Shoichiro Suzuki declared that the Group would expand the area of its overseas tree plantations to 300,000 hectares. We have made overseas tree plantations a top priority issue—both to meet growing demand for paper and to uphold our commitment to procuring timber without destroying the natural environment. We will also continue to ensure that 60% or more of the total raw material we use to produce paper is recovered paper, recognizing that the promotion of recovered paper utilization is just as important as planting trees overseas.

For Oji Paper, the ideal recycling-based business model involves both effective utilization of forests, which are a blessing of nature, and recycling of paper, which is a fruit of that blessing of nature. We are promoting global warming countermeasures, strengthening our environmental management system, and moving forward with measures to reduce the amount of waste sent to landfills—all to accelerate progress toward the realization of a truly sustainable way of life for all.

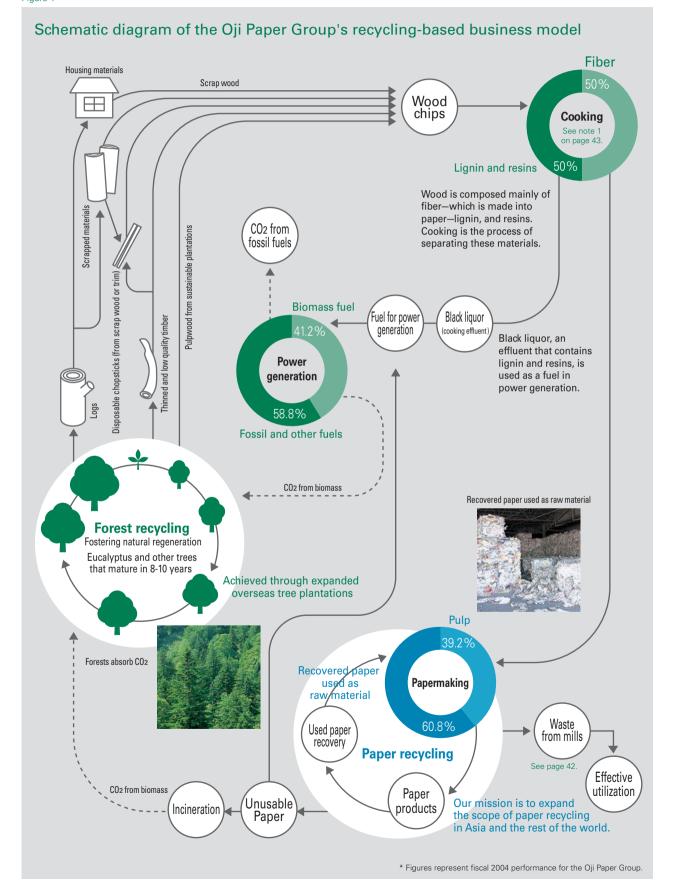






Left: Minamifurano Forest, Hokkaido.
Center: Stream in Ichifusa, Miyagi Prefecture
Right: Late fall oyster mushrooms in
Rubeshibe, Hokkaido.

Figure



13 Oji Paper Group

Highlight: A Recycling-based Business Model

## Paper Recycling—The Mainstay of Oji Paper's Environmental Policy

Utilizing recovered paper as efficiently and thoroughly as possible

## In Japan, 60% of the raw material used in producing paper is recovered paper, a very efficient resource in meeting the growing demand for paper

In 1990, worldwide production of paper stood at 239 million tons; in 2003, it had increased to 339 million tons. In 1990, such an increase was unimaginable, and no one would have even believed such a large production volume possible. Obviously it was—and only little more than a decade later. While increased pulp production yields and tree plantations are factors that have helped make this possible, the most significant factor has been the recovery and reutilization of used paper materials, such as containerboard, magazines, newspapers, and paper cartons. In Japan, recovered paper accounts for 60% of the raw material for papermaking. Going forward, the Oji Paper Group is committed to working even harder on the recovery and reutilization of used paper as these issues become more and more important from the perspective of resource strategy.

## Japan has a mature culture of used paper recovery and reuse: As much used paper as possible is recovered, and the recovered paper is then utilized to the full

The Oji Paper Group, which has made paper recycling the mainstay of its environmental policy, holds the distinction of utilizing the largest amount of recovered paper in Japan, which it then provides as recycled paper. In 2004, the Group utilized 4.87 million tons of recovered paper, or 26.2% of all such paper used in Japan. As we see it, utilization of this much recovered paper was made possible by the heightened environmental awareness of consumers, NPOs, the paper recovery industry, and national and local governments, as well as the consensus of opinion within the business community. A wonderful culture has developed where as much used paper as possible is recovered and the recovered paper is utilized to the full, true to the conviction that used paper is the "forest resource" of the city.

#### Limits and issues with used paper recovery: The solution must include cascade utilization\*1

Some types of paper products, such as sanitary paper\*2 and base paper for building material,\*3 are difficult to recover. Others, such as water- and moisture-proof paper goods, are difficult to utilize as a raw material for papermaking even if they are recovered. There is, in point of fact, a limit to the used paper recovery rate. All the same, the rate of used paper recovery in Japan has risen to 69%, as of fiscal 2004. In the future, this could increase a few more percentage points if concerted efforts are made to recover used office paper by separating the various types thoroughly and improving recovery routes.

Recently, it has frequently been pointed out that the quality of recovered paper has declined. This is likely due to disordered separation and sorting and an increase in products that combine paper with plastics and other materials. In response, we are working to utilize recovered paper even more effectively by improving recycling technology and stepping up capital investment, to ensure that the recycled paper we provide both meets our customers' needs and helps reduce environmental impact. Going further, we are promoting even higher efficiency in the use of recycled paper by encouraging more thorough separation and sorting to improve the quality of recovered paper resources, and then employing cascade utilization, in which recovered paper is recycled by grade into different quality recycled paper products.

- \*1 Cascade utilization of recovered paper
  Optimum utilization of recovered paper by grade, such that relatively
  white, high-grade recovered paper is used as a raw material to make
  high-quality paper, while low-quality recovered paper is used as
  a raw material to make paperboard, and so on.
- \*2 Sanitary paper Facial tissues, toilet paper, and the like.
- \*3 Base paper for building material
  Paper used as a covering for plaster board or as wallpaper.

## Recycling with attention to the environment, cost, and usage—A proper evaluation of environmental performance should be based on a company's overall efforts, not the content of individual types of paper

The paper industry has been working to improve its recovered paper utilization rate. In fiscal 2004, the Oji Paper Group achieved a utilization rate of 60.8%. Maintaining and improving this utilization rate in the future is an important issue. It is not easy to forecast changes in the rate, however, since it is affected by the volume of recovered paper procured.

## It is a mistake to believe that brands with a high content ratio of recovered paper are the most environmentally friendly

Many people assume that the higher the content ratio of recycled paper, the more environmentally friendly a recycled paper product is. However, this assessment is not necessarily true, since increasing the content ratio of recovered paper in the product may amplify environmental impact due to use of large volumes of cleaning solution and increase manufacturing process costs. In contrast, the Oji Paper Group differentiates recovered paper by grade and uses content ratios that best suit the use of the paper product, are economical, and that take the environment into consideration (see note 1 on page 13). We encourage customers to understand that the most responsible approach is to identify the best paper for the purpose at hand, rather than trying to determine merits and demerits based solely on composition, such as 100% recycled

paper versus paper made from pulpwood from certified forests. For our part, we will do our utmost to ensure the public better understands this fact.

The Oji Paper Group is devoted to fulfilling its commitment to recovery and effective utilization of used paper—the "forest resource" of the city. It is our hope that people would evaluate our efforts based on our group-wide performance—the amounts of recovered paper and plantation timber that we use—rather than on whether individual types of paper have a high or low content ratio of recycled paper.

## We established a specialized company, which serves as the cornerstone of our resource strategy

Procurement of recovered paper is an extremely important issue from the perspective of resource strategy. In April 2003, the Oji Paper Group established Oji Recovered Paper & Market Pulp Co., Ltd., with the aim of increasing and stabilizing procurement of recovered paper. This company undertakes community-based procurement of recovered paper, replacing the old method of procurement by individual companies and mills. By working to streamline the distribution of recovered paper, we have reduced both costs and environmental impact.

In addition to this type of streamlining, we have requested the paper recovery industry and local authorities to separate and recover used paper in a way that enables it to be easily recycled, since recovered paper quality is the key to recycling.

# Japan's culture of used paper recovery and reutilization is quite mature: social consensus calls for the maximum possible recovery and reuse of used paper.







Left: Recovered paper stockyard.

Center: Feeding recovered paper into a processing facility.

Right: Finished recycled paper.

Highlight: A Recycling-based Business Model



# Transforming the Papermaking Industry— Growing Trees, Nurturing the Woods, and Securing Raw Materials from Sustainable Forests

The paper industry has been criticized as an industry that uses far too many natural resources, since it consumes large quantities of timber. This view, however, is a superficial one. Since timber is a renewable resource when trees are replanted, the papermaking business, when done in an enlightened way, is actually a recycling-based industry. It is also unique in that practicing proper management of forest resources can increase the absorption of carbon dioxide through afforestation, which contributes to the solution of global environmental problems. The Oji Paper Group's practice of sustainable forest management is environmentally, socially, and economically sound. Oji Paper is proud of its sustainable business model, which dictates that all timber must be logged from such sustainably managed forests.

#### Harvesting trees from sustainably managed forests

Changing papermaking from an industry that uses too many natural resources to an industry that is a model of responsible recycling

The Oji Paper Group's raw material for papermaking consists of 60.8% recovered paper and 39.2% virgin pulp from timber. The Group has been regarded as a member of an industry that exploits natural resources and as a cause of deforestation because it consumes large quantities of timber. However, timber is a unique resource in that it is renewable through the planting of trees. Papermaking is, if anything, a recycling-based industry that is exceptional in that the steady practice of proper management can lead to



the absorption of carbon dioxide through afforestation and contribute to the solution of global environmental problems. The principle of sustainability, a key concept since the 1992 World Summit, has a variety of applications. Oji Paper has focused its efforts on sustainable forest management.

## Sustainable forest management means finding the right balance between environmental, social, and economic factors

For many years now, the Oji Paper Group has put a great deal of effort into sustainable forest management.

Unfortunately, in some quarters the company continues to be misperceived as an entity that exploits natural resources. In fact, cutting trees from sustainably managed forests is not a bad practice. Selective logging and other types of care are necessary to maintain forests in good condition.

Sustainable forest management refers to environmentally, socially, and economically sound forest management—in other words, forest management that protects biodiversity, meets the needs of the human societies that rely on the forests, and safeguards the economic viability of communities and companies that are engaged in forestry. The Oji Paper Group always considers the specific characteristics of local communities when it plants trees and harvests timber, and develops its business activities with careful consideration of the environment, society, and economy.







16

Left: Planting trees.
Center: Young eucalyptus trees
Right: Mature eucalyptus trees

Timber used by the Oji Paper Group as a raw material for papermaking consists of plantation timber, sawmill residue and low quality timber from natural stands.

## Effectively utilizing timber resources—a blessing of nature—and promoting the use of plantation timber

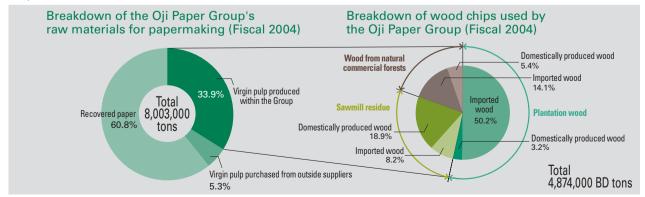
Forests, if properly managed, are a sustainable resource that can perpetually supply us with timber, one of nature's precious blessings.

Natural forests include natural forest reserves, which are protected forests that are not logged for scientific, scenic, and disaster-prevention reasons, and natural commercial forests, which are logged to produce timber. Forest products produced from commercial forests have sustained human societies for eons.

However, natural commercial forests alone cannot meet the expanding demand for timber. We have therefore been increasing our tree plantations, which are basically tree farms that enable more efficient timber production. The Oji Paper Group's use of recovered paper and timber materials has been increasing along with the expanding scale of its production. This increase has been supported mainly by tree plantation resources. Today, the majority of the timber materials we use come from tree plantations.

Lumber, plywood, and other high value-added products are normally given priority production from natural commercial forests. Low value-added timber (low quality timber from natural stands), such as timber that is crooked or has other defects, and timber from species or of a diameter that has no other uses, is what gets used as material for pulp. It is absolutely not the case that virgin forests are disappearing because they are being cut as raw material for paper. Moreover, we recognize that we are contributing to the effective use of timber resources, including sawmill residue produced as a by-product when sawmills cut logs into lumber.

Graph '



Oii Paper Group Environmental and Sustainability Report 2005

Highlight: A Recycling-based Business Model

## Wood Raw Material Procurement Policy Announced in April 2005—Moving Forward with Green Procurement

As a leading paper company, Oji Paper takes initiatives to prepare traceability reports

#### **Wood Raw Material Procurement Policy: Procuring raw material from sustainable forests**

In fiscal 2004, Oji Paper used 4,874,000 BD tons of wood chips, of which 72.5% were imported from overseas (Graph 1, page 16). In April 2005, we announced the Oji Paper Group Wood Raw Material Procurement Policy, which sets requirements for the green procurement of wood chips. For example, our chips must come from timber that was raised in sustainably managed forests. The procurement policy consists of the following five initiatives.

#### 1. Expand procurement of wood from certified forests

Forest certification is a system whereby a third party organization evaluates and certifies that a forest is being managed according to sustainable forest management standards. There are a number of international forest certification schemes, such as FSC, PEFC, and SFI, as well as one unique to Japan, SGEC. In fiscal 2004, the Oji Paper Group procured 15% of its wood from certified forests. By fiscal 2011, we will expand that figure to 65%. We are aiming to acquire 100% certification for all of our overseas tree plantations, and are strongly encouraging our suppliers of non-certified wood to obtain forest certification (Figure 1).

#### 2. Expand and increase procurement of plantation timber

In fiscal 2004, the Oji Paper Group procured 72% of its wood from tree plantations, of which 8% was from its own plantations. By fiscal 2011, we will increase those figures to 81% and 16%, respectively. To that end, we will expand the area of our overseas tree plantations from the 140,000 hectares that we held in fiscal 2004 to 300,000 hectares by fiscal 2010. When the trees on these plantations become harvestable in 2020, about 40% of our imported chips will come from our own supplies. At the same time,

we will increase the percentage of chips from plantation timber that we buy from outside suppliers.

#### 3. Effectively utilize unused timber

We will promote the effective utilization of sawmill residue and thinned timber as a means of ensuring resources are responsibly used.

#### 4. Ensure traceability of raw materials

We will verify whether the timber that we use as a raw material was produced in properly managed forests. We will continuously inquire into the raw material source and forest management practices of the suppliers from whom we procure wood. We will always direct suppliers to obtain data on the source of raw materials so that we can improve the accuracy of our investigations. It is an important policy of ours not to purchase illegally logged timber, and we will therefore explicitly state this policy in purchase and sales contracts entered into with suppliers

We have company representatives stationed in the main countries from which we import wood chips. These employees verify the sources of the raw material and forest management practices when the chips are loaded onboard ships, and prepare traceability reports. We will make an effort to improve reliability by conducting audits of these traceability reports. As one of the world's leading paper companies, we are proud of the initiative we have taken to prepare these reports

We will also regularly verify the sources and forest management practices of wood chips produced in Japan and prepare traceability reports.

#### 5. Disclose information

We will regularly disclose information as to whether or not we have firmly implemented the above procurement policies. Left: Saplings at our Forestry Research Institute facility in Australia.

Center: Caring for young trees Right: At the World Business Council for Sustainable Development (WBCSD).







#### Participating in an international council on sustainability—Proposing development of forest certification schemes

The Oji Paper Group participates in the World Business Council for Sustainable Development (WBCSD), which plays a leadership role in steering the industrial world toward sustainable development. Within the Council, we participate actively in the Sustainable Forest Products Industry (SFPI) working group—which addresses subjects such as mutual recognition of forest certification schemes and illegal logging—where we make proposals for the development of systems. One example of a concrete initiative we took to build on the successes of these activities is the Oji Paper Group Wood Raw Material Procurement Policy, which reflects the global trends of the SFPI.

## Reconsidering the value of paper in light of new

Worldwide paper consumption is predicted to climb to 460 million tons by 2015. Meeting the needs of this level of

consumption is a social responsibility of the paper industry. To do so, however, the global industry must increase recovery of used paper, make use of unused resources, and expand the total area of tree plantations to 5 million hectares. This will entail considerable investments in valuable forest resources to ensure adequate paper production.

As one of Asia's leading companies, the Oji Paper Group believes its social responsibility includes proposing new ideas for the ideal future modality of the Asian paper industry. Accordingly, we are promoting the recovery and reutilization of used paper across Asia and striving to set an example of environmental management for the Asian paper industry. We are also working to popularize the conservation mindset of *mottai-nai* ("don't waste it") when it comes to the world's forest resources and to encourage a reassessment of the value of paper.

We hope that paper users everywhere will recognize anew the value of paper and use it as a valuable commodity. We also want to hear and offer new opinions about new ways to use paper.

### paper applications: Defining the ideal modality for the paper industry in the 21st century



19 Oji Paper Group

#### Can you feel the difference between the left and right pages here?

This report is printed on three kinds of paper. The cover uses 100% recycled paper. The first half of the report uses FSC-certified paper, and the second half uses paper made from thinned timber. It is all environmentally friendly paper. We hope that this publication itself conveys the message that the Oji Paper Group is working to help build a sustainable way of life for all.

Paper made from raw material including thinned timber Product name: OK (T) Balloony 70g/m<sup>2</sup>

> Paper size: 636×939mm Paper characteristics: Short grai



### ▶ Recently, the term forest certification has become rather common

Forest certification, also known as timber certification and timber labeling, is a system whereby an independent, third-party organization evaluates and certifies that a forest is being managed according to sustainable forest management\*2 standards. There are a number of different schemes put forth by different countries. Japan, too, has standards, set by the Sustainable Green Ecosystem Council.

## That the world would always

## have enough paper to use...

# Product name: OK TOPKOTE MAT N Eco-Forest

The Forest Stewardship Council (FSC)\*:

is a forest certification organization that

conducts third-party evaluations of

whether the world's forests are being

consumers choose to use products made

such certification, they are cooperating

Oji Paper Group is working to obtain

overseas tree plantations as well as

which guarantees that its mills in Japan

## The second half (pages 20-57) uses paper made from raw material including thinned tingle OK (T) Balloony

This lightweight coated paper, which is thick for its weight, was developed for use in magazines and books, and is designed to give a sense of volume. It is also an environmentally friendly product, containing 10% or more thinned wood from Hokkaido in the raw material pulp. Thinning, which is part of the process of growing tree plantations, is the work of removing some standing timber from an overcrowded forest. Thinning encourages the growth of the other trees, increases the absorption of CO<sub>2</sub> by the forest as a whole, and helps produce good quality timber. It also enriches the soil and improves the forest environment by allowing sunlight to reach the forest floor.

The cover uses 100% recycled paper
Product name: OK MATKOTE Green 100

### In fact, we do have a good reason for producing 100% recycled paper

The Green 100 Series is 100% recycled printing paper, which Oji Paper developed ahead of the rest of the world. Despite our assertion that a higher content ratio of recycled paper does not necessarily mean that a paper product is environmentally friendly, we have a good reason for continuing to produce 100% recycled paper products.

Formerly, the quality standards for paper for printing in Japan dictated that it should not include used paper as a raw material. Oji Paper, however, broke new ground with its Green 100 Series, which was a major hit and did much to popularize recycled paper. This had the effect of sparking dramatically increased demand for recycled paper. The Green 100 Series was a pioneering product that boosted the use of recovered paper for printing, and is therefore an important product with high symbolic and historical value.

\*1. FSC (Forest Stewardship Council)
Established in 1993 by an alliance of different
groups, including environmental organizations,
foresters, timber traders, indigenous peoples
groups, local forestry associations, and forest
products certification organizations, the FSC is
an organization that certifies appropriate forest
management, which arose in response to
worldwide problems such as deforestation and
forest degradation.

\*2. Sustainable forest management
A forest management scheme that entails
logging only those amounts of timber that
match the amount of growth, while paying
close attention to impact on the ecosystem,
including soil, water, and wildlife, such that the
forest may be effectively utilized by people both
today and in the future.

Product name:

OK TOPKOTE MAT N Eco-Forest 104.7g/m<sup>2</sup>

Paper size: 636×939mm
Paper characteristics: Short grain

Management

## Corporate Governance

At the Oji Paper Group, continuous improvement of corporate governance is a top management priority. We are always fine-tuning our system to make it as effective as possible. We believe our commitment to efficient, sound, and transparent management is a key factor in earning the trust of society and increasing corporate value.

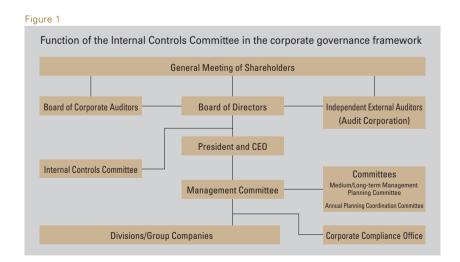
## Our view of corporate governance, and our new Internal Controls Committee

At the Oji Paper Group, a ten-member Board of Directors makes the strategic business decisions for the company. Under our executive officer system, executive officers are responsible for the implementation of decisions made by the Board of Directors. Important management issues are deliberated by the Management Committee, which is comprised by directors who also serve as executive officers, and final decisions are taken by the Board of Directors. All these activities are audited by four auditors, two of whom are external (Figure 1).

In June 2005, the Oji Paper Group established an Internal Controls Committee. This move reflects our awareness of the importance of improved internal controls and appropriate risk management to ensure ongoing, lasting improvements in corporate value in today's rapidly changing business environment. Most internal control initiatives have already been incorporated into the day-to-day operations of

each department. The task of the Committee will be to verify and assess responses to major risks and monitor the functionality of internal control systems, driving changes to those systems as needed.

The Medium/Long-term Management Planning
Committee and the Annual Planning Coordination Committee
debate and implement measures addressing important
management risks that influence decision-making on corporate
strategy, in order to drive business planning forward. We
have also developed a system to respond to disasters,
accidents, and other unexpected situations by preparing
group-wide basic policies on disaster prevention management
and establishing a Disaster Prevention Committee. In
addition, we established a Committee on the Strengthening
of Product Competitiveness and an Environmental
Committee to address quality and environmental risks,
ensuring that each department responsible implements
measures from a company-wide perspective.



#### \*1 Subcontracting Law

A law that protects subcontractors by ensuring a reasonable profit through fair subcontract dealings. The law prevents delayed payment and reduction of subcontracting charges, return of goods, and abuse of buying power by parent companies.

## Compliance

In June 2003, the Oji Paper Group established a Corporate Compliance Office to strengthen corporate compliance. We followed this up in fiscal 2004 by further enhancing our compliance framework.

#### **New compliance framework**

In fiscal 2004, the Oji Paper Group built a new a compliance framework to ensure complete group-wide compliance with laws, regulations and business ethics. These efforts are all guided by the Oji Paper Group Corporate Code of Conduct (page 8) and the Oji Paper Group Conduct Regulations.

The executive in charge of the Oji Paper Corporate
Compliance Office has overall responsibility for ensuring
compliance. In addition, the heads of each department
(divisions, mills, and branch offices) within Oji Paper and
the presidents of each group company are tasked with
compliance management for their respective organizations.
Compliance leaders appointed by the compliance
managers oversee the specific initiatives. The Oji Paper
Corporate Compliance Office is responsible for making
group-wide plans for compliance initiatives (Figure 1).

#### Figure 1



## Providing compliance education in legal issues through e-learning

In addition to training workshops that we hold for compliance leaders, managers, regular employees, and new recruits, we have also started e-learning workshops covering legal requirements that are run online for all employees and managers of the Oji Paper Group. For the e-learning courses, individuals study from a text and then take tests online. Tests must be repeated until the person passes by attaining a score of 80% correct or higher.

We are also striving to raise employee awareness of compliance issues by carrying serial articles on the Oji Paper Group's intranet that introduce Japan's Personal Information Protection Law, Anti-Monopoly Act and other issues.

#### **Business ethics help line**

Oji Paper's business ethics help line provides employees with internal or external contacts for consulting about or reporting behavior that runs contrary to business ethics (including work-related and sexual harassment issues). The goal of the help line is to prevent such incidents or correct them through early detection. In September 2003, the Oji Paper Group set up two contact points: the Corporate Compliance Office within Oji Paper and an outside attorney. All group employees (including part-time, non-regular staff, and temporary employees) can consult about or report questionable behavior anonymously to these contacts. In fiscal 2004, 14 incidents were reported or consulted about, and appropriate measures were taken in all cases.

#### Fuji Paper receives Japan Fair Trade Commission advisory

In September 2004, the Japan Fair Trade Commission advised Fuji Paper Co., Ltd. (now Oji Specialty Papers Co., Ltd.) of a Subcontracting Law\*1 violation. When Fuji Paper negotiated price reductions with 15 subcontractors, the parties agreed not to renew their contracts, but instead to implement certain reductions,

calling it a partnership fee. Later, the Japan Fair Trade Commission advised Fuji Paper that negotiating such price reductions without renewal of their contracts constituted a violation of the Subcontracting Law, and requested the company to reimburse the amounts reduced.

The Oji Paper Group deeply regrets the inadequate familiarity with the content of the Subcontracting Law which resulted in this advisory from the Japan Fair Trade Commission. Fuji Paper followed the advice and refunded the reduced amounts.

## **Environmental Management and Auditing**

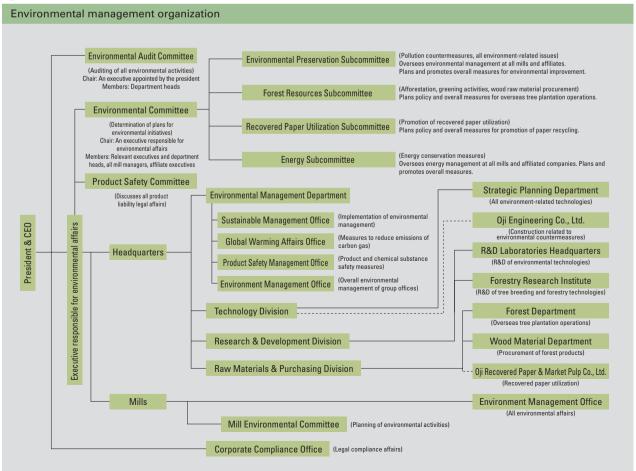
With the anticipated increase in demand for paper, we recognize that one of the Oji Paper Group's key social responsibilities is to continue to step up our commitment to caring for the global environment. We most recently reinforced our environmental management system in June 2005. We transformed our Environmental Affairs Department into the Environmental Management Department and established three new organizations alongside the Global Warming Affairs Office: the Sustainable Management Office, Product Safety Management Office, and the Environment Management Office. With these solid organizational steps, we have the infrastructure in place to act on our dedication to a sustainable global environment.

## The Oji Paper Group's environmental management system

The Environmental Management Department at Oji Paper headquarters, directed by the executive responsible for environmental affairs, drives environmental management initiatives across the Oji Paper Group and serves in a coordinating role for all environmental efforts undertaken by Oji Paper affiliates.

The Environmental Committee and Environmental Audit Committee are the most important components of the environmental management system at the Oji Paper headquarters (Figure 1). The Environmental Committee, composed of executives, principal mill managers and technology managers, determines the Group's priorities and future policies on environmental management. The Environmental Audit Committee conducts on-site inspections of mills group-wide, identifies problems in their environmental performance, and provides instructions for improvement. The committee goes beyond merely identifying problems and suggesting improvements; it also offers authoritative guidance in environmental management. For instance, it helps bring environmental management at

Figure 1



facilities that have not yet acquired ISO 14001\*1 certification up to par with mills that have been certified.

In June 2005, we reorganized our Environmental Affairs Department into an Environmental Management Department with four internal organizations. This move reflects the priority with which we view environmental affairs.

## Certification of environmental management systems

The Oji Paper Environmental Charter calls for ISO 14001 certification, which all of Oji Paper's own mills acquired in October 2001. In addition, as of June 2005, most of our large-scale mills group-wide have also acquired certification, for a total of 97 certified facilities. Going forward, we will work on achieving certification at small-scale mills. However, Eco Action 21,\*2 an environmental management system recommended by Japan's Ministry of the Environment, is sometimes more appropriate for small-scale mills than ISO 14001. At distribution companies, we are also considering Green Management Certification (page 38) as a certification option.

#### **Environmental auditing**

The Environmental Management Department at Oji Paper headquarters monitors environmental initiatives across the entire Oji Paper Group, and issues appropriate guidance and new policies as needed. The Division's highest priority is on-site environmental audits, which have been conducted every year since 1994. In fiscal 2002, we expanded the scope of these audits and began auditing the

large-scale facilities of some Oji Paper affiliates. In fiscal 2004, we expanded scope again to include small-scale facilities, and set up a two-year audit schedule covering a total of 111 facilities. The first 54 on-site audits were completed within the year. Having found the audits highly effective in identifying and improving problems, we are moving up the remaining 57 on-site audits planned for fiscal 2005, and hope to finish them early. Going forward, we will conduct document audits of all 111 facilities every year, and on-site audits of all every two years.

Table 1

Table I						
Audited facilities and facilities scheduled for auditing						
Audited in fiscal 2004	No. of facilities	Auditing during fiscal 2005	No. of facilities			
Oji Paper Co., Ltd.	4	Oji Paper Co., Ltd.	7			
Oji Specialty Papers Co., Ltd.	6	Oji Specialty Papers Co., Ltd.	3			
Oji Paperboard Co., Ltd.	5	Oji Paperboard Co., Ltd.	5			
Oji Nepia Co., Ltd.	2	Oji Nepia Co., Ltd.	2			
Oji Container Co., Ltd.	15	Oji Container Co., Ltd.	7			
Chiyoda Container Corporation	3	Chiyoda Container Corporation	10			
Oji Cornstarch Co., Ltd.	2	Oji Cornstarch Co., Ltd.	1			
Oji Tac Co., Ltd.	2	Tomakomai Energy Kosha Co., Ltd.	1			
Oji Packaging Co., Ltd.	2	Medical Corporation Oji General Hospital	1			
Oji Seitai Kaisha, Ltd.	6	Oji Seitai Kaisha, Ltd.	5			
Shinomura Chemical Industry Co., Ltd.	1	Japan Pulp & Paper Research Institute, Inc.	1			
NIHON SEIKAHOSO Co., Ltd.	1	Musashi Oji Container Co., Ltd.	2			
Shizuoka Oji Container Co., Ltd.	2	Oji Kinocloth Co., Ltd.	2			
Yupo Corporation	1	Oji Timely Co., Ltd.	1			
Oji Forest & Products Co., Ltd.	2	Oji Forest & Products Co., Ltd.	4			
		Chuetsu Co., Ltd.	3			
		Kyodo Shiko Co., Ltd.	2			
Total	54	Total	57			

#### Table 2

Fiscal 2004 audit results (54 facilities in all)				
Items requiring improvement	71			
Minor items for suggested improvement				
Extremely good, exemplary items 2				

#### \*1 ISO 14001

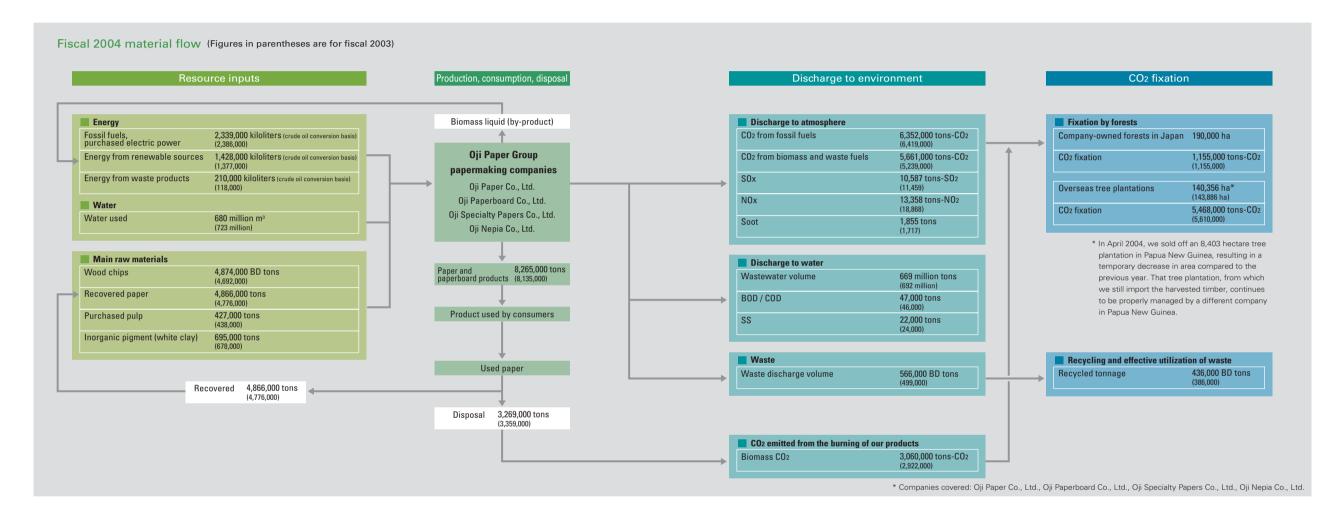
An environmental management system established by the International Organization for Standardization (ISO). Facilities that have established a system that meets these standards are able to receive ISO 14001 certification.

#### \*2 Eco Action 21

An environmental management system established by Japan's Ministry of the Environment. This system allows small and medium-size companies to develop environmental initiatives and announce the results in an environmental activity report.

## Material Flow from an Environmental Perspective

One key responsibility of the manufacturing industry is to always track and monitor resource inputs and energy needed for production, as well as the wastes and other environmental impacts that result from the production process. Below, we report the Oji Paper Group's fiscal 2004 material flow from an environmental perspective.



## Fiscal 2004 material flow for the Oji Paper Group

In the above flowchart, we show the overall balance of our main material inputs and outputs, including the amount of resources used, the amount of products produced, the emissions and waste generated, and the amount of CO2 fixed by our company-owned forests and overseas tree plantations. Starting from the left, we show the resource inputs needed for manufacturing, such as energy, water, and raw materials. Next, we show the amount of products produced and the final amount of material recycled as recovered paper plus the remainder disposed of as waste. To the right of that, we show the amount of soot and smoke discharged to the environment, the amount of

wastewater, the amount of COD\*1, BOD\*2, and SS\*3 included in the wastewater, and the amount of industrial waste. Finally, on the far right, we show the amount of CO2 absorbed by the Group's forests and the amount of waste recycled.

By understanding the overall picture of material inputs and outputs, we are able to consider the most effective ways to improve our contribution as a recycling-based company.

## Oji Paper Group resource consumption, in simple comparisons

If we were to supply all of our timber needs from overseas tree plantations, we would need an area of about 650,000 hectares (calculated assuming an average annual growth/hectare/year of 7.5 BD\*4 tons). If we were to convert the 4,870,000 tons of recovered paper used by the Oji Paper Group in one year into 40-page newspapers (one newspaper weighing about 190 grams), it would come to about 25.6 billion recycled newspapers in one year, or about 70 million newspapers' worth of paper recycled per day. If we were to make a simple comparison, the volume of industrial water used by the Oji Paper Group would come to about 4.3% of the 16 billion m³ of Japan's annual public water supply. Finally, if we were to convert the fossil fuels we use into crude oil, the Oji Paper Group would consume about 4% of Japan's consumption of gasoline.

## Using large amounts of resources—responsibly

The papermaking industry must constantly confront the fact that it uses large amounts of resources, especially timber and fuel. This is why, at Oji Paper, we are working aggressively to grow as much of the timber that we use as possible, recycle as many consumed paper products as possible, and reduce our consumption of fossil fuels, as discussed on page 11, which describes our recycling-based business model.

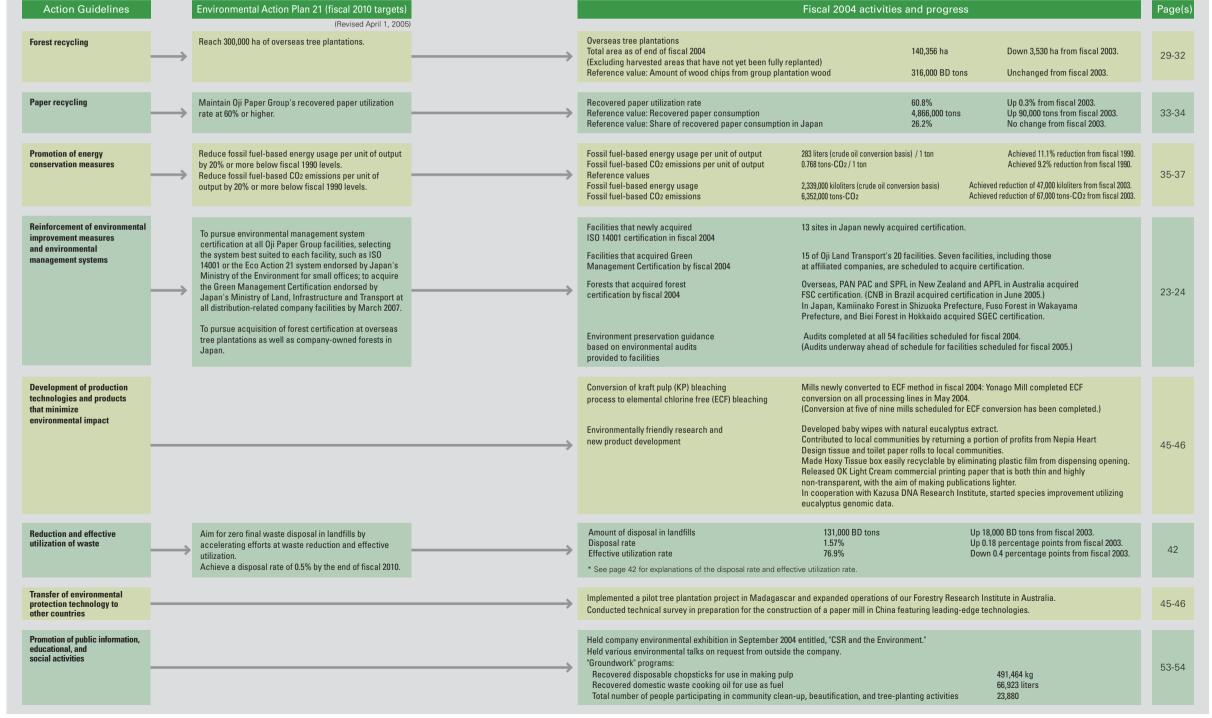
\* Please see page 29 for notes \*1, \*2, \*3, and \*4 on COD, BOD, SS and BD.

## Oji Paper Environmental Charter and Environmental Action Plan 21

The Oji Paper Group's Environmental Charter sets out a Basic Policy that makes it clear that environmental issues are a top management priority. It also defines Action Guidelines to ensure that the Basic Policy is applied in a practical way in everyday business activities. Going a step further, the Charter sets specific numerical targets to be achieved by fiscal 2010, in the Environmental Action Plan 21. The Oji Paper Group is committed to ensuring that all of its business activities are conducted with sensitivity to the delicate balance of the global environment. Below, we report progress made in fiscal 2004 toward achieving our fiscal 2010 goals.

#### Environmental Charter Basic Policy

The Oji Paper Group complies with environmental regulations as defined by law and makes independent efforts to achieve further environmental improvement. The Oji Paper Group strives to help create a truly abundant society by maintaining and expanding business activities with respect for the delicate balance of the global environment, particularly forest recycling programs that involve proactive tree planting activities and paper recycling promotion programs that increase the utilization of recovered paper resources.



Oii Paper Group

## Forest Recycling: Planting What We Use

At the Oii Paper Group, we believe in planting what we use. The Group began managing its own forests in Japan in the 1890s to secure timber materials. Following World War II, we launched an all-out effort to plant trees. Later, we started importing timber materials from overseas to meet Japan's increasing need for paper in an economically feasible way. Since then, we have gradually increased the ratio of imported timber materials to those sourced in Japan. In the 1970s, we started growing overseas tree plantations to help stabilize our supply of raw materials. Today, anticipating a dramatic increase in global demand for paper, we are working to increase the area of our overseas tree plantations to 300,000 hectares by 2010.

#### Not only purchasing, but planting new timber—Targeting 300,000 hectares of overseas tree plantations

The Oji Paper Group started operating overseas tree plantations in the early 1970s, true to the philosophy of planting the timber resources we need instead of sourcing all through purchasing. Beginning in the 1990s, we started working in earnest toward the goal of expanding the area of these tree plantations to 200,000 hectares by fiscal 2010. In 2005, in view of our prospects for future business development, we increased our fiscal 2010 target to 300,000 hectares, aiming to secure the timber resources we need in a way befitting a recycling-based company (Graph 1).

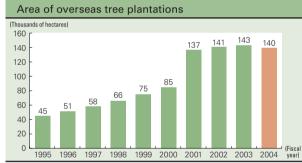
In Japan, the annual growth rate of trees is relatively small and there is little space available for tree plantations. By comparison, overseas tree plantations have the benefits of faster tree growth, availability of sizable tracts of land,



Tree plantation in Western Australia bordering a natural stand and pastureland. (APFL, Oji Paper Group)

and highly productive, mechanized growing processes. At the end of fiscal 2004, the Oji Paper Group had 140,000 hectares of overseas tree plantations under cultivation.

The Japanese pulp and paper industry as a whole changed its initial target of 550,000 hectares of tree plantations in and outside of Japan by 2010, and is now aiming for 600,000 hectares. Oji Paper's goal accounts for half of this.



\* Area of tree plantations at end of fiscal year (excluding unplanted area following harvests).

#### Increasing the supply of chips produced at our own tree plantations

Currently, we operate tree plantations at ten locations (two of which produce pulp on-site and eight of which export chips) in six countries: Australia, Brazil, China, Laos, New Zealand and Vietnam (Table 1, Figure 1).

The first trees planted at these plantations are gradually reaching harvestable size, and the volume of chips produced from them has been increasing. Our timber raw material consumption supplied by our own overseas tree

\*3 SS (suspended sediment)

Insoluble matter in wastewater. When there is a lot of suspended sediment. and may accumulate into sludge if there is an excessive amount.

The weight of wood when dried to the point that is has no moisture content. Used in expressions such as BD tons and BD kilograms.

plantations reached 320,000 BD\*4 tons in fiscal 2004, accounting for 8% of our total import of chips. This percentage will reach 16% by 2011, and will hit 40% when the trees on our future 300,000 hectares of tree plantations attain harvestable size.

We have partnered with a number of other Japanese companies in our overseas tree plantation operations. We are proud of the world-class contribution to the global environment being made by the Japanese companies from different industries that have joined forces to develop tree plantations (Table 1).

Table 1

Country	Region	Company	Year established	Cooperating companies	Tree species	Target plantation area (ha)	Plantation area at end of fiscal 2004 (ha)	Harvest cycle (years)
New Zealand	South Island	SPFL	92	Oji Paper Co., Ltd., ITOCHU Corporation, Fuji Xerox Co., Ltd., Fuji Xerox Office Supply Co., Ltd.	Eucalyptus	10,000	9,816	12
Australia	Western Australia	APFL	93	Oji Paper Co., Ltd., ITOCHU Corporation, Senshukai Co., Ltd., Tohoku Electric Power Co., Inc., Nippon Yusen K.K.	Eucalyptus	26,000	23,870	10
Vietnam	Bindin Province	QPFL	95	Oji Paper Co., Ltd., Sojitz Corporation, Dai Nippon Printing Co., Ltd.	Acacia, Eucalyptus	9,100	8,536	7
Australia	Victoria	GPFL	97	Oji Paper Co., Ltd., Sojitz Corporation, Toppan Printing Co., Ltd., HEPCO Hokkaido Electric Power Co., Inc.	Eucalyptus	10,000	6,506	10
Australia	Queensland	BPFL	98	Oji Paper Co., Ltd., ITOCHU Corporation, Kodansha Ltd., Seihoku, Electric Power Development Co., Ltd., J-POWER RESOURCES Co., Ltd.	Eucalyptus	10,000	6,617	10
Australia	Victoria	EPFL	99	Oji Paper Co., Ltd., Sojitz Corporation, Shogakukan Inc., Japan Pulp and Paper Co., Ltd.	Eucalyptus	10,000	3,129	10
China	Guangxi Zhuang Autonomous Region	CPFL	01	Oji Paper Co., Ltd., Marubeni Corporation	Eucalyptus	6,000	3,586	6
Laos	Central Laos	LPFL	99 (05)	Oji Paper Co., Ltd., Government of Laos	Eucalyptus	50,000	1,600	7
New Zealand	North Island	PAN PAC*	91	Oji Paper Co., Ltd., Nippon Paper Industries Co., Ltd.	Radiata pine	26,010	27,555	30
Brazil	State of Minas Gerais	CNB*	73	Japan Brazil Paper and Pulp Resource Development Co., Ltd. (JBP) (Investors include: Oji Paper Co., Ltd., Japan Bank for International Cooperation [JBIC])	Eucalyptus	43,450	49,141	7
	Total					200,560	140,356	
	Target for fiscal 2010					300,000		1

- \* Tree plantation areas are as of the end of December 2004 for CPFL and CNR and as of the end of March 2005 for the others The total target area and planted area (estimated) for PAN PAC and CNB were pro-rated by our investment percentage. (PAN PAC: 86.7%, CNB: 39.5%) (Total area—PAN PAC: target area 30,000 ha, planted area 31,782 ha; CNB: target area 110,000 ha, planted area 124,408 ha)
- SPFL Southland Plantation Forest Company of New Zealand Ltd. QPFL Quy Nhon Plantation Forest Company of Vietnam Ltd
- BPFI Brisbane Plantation Forest Company of Australia Ptv. Ltd.
- CPFL Guangxi Oji Plantation Forest Company Ltd.
- PAN PAC Pan Pac Forest Products Ltd.

- APFL Albany Plantation Forest Company of Australia Pty. Ltd.
- GPFL Green Triangle Plantation Forest Company of Australia Pty. Ltd. EPEL Fast Victoria Plantation Forest Company of Australia Ptv. Ltd.
- Oji Lao Plantation Forest Company Ltd.
- CNB Celulose Nipo-Brasileira S.A.



\*1 COD (chemical oxygen demand)

The amount of oxygen consumed to decompose organic compounds in water through oxidation. The smaller the number, the cleaner

\*2 BOD (biochemical oxygen demand)

The amount of oxygen needed for microorganisms to decompose organic compounds in water. BOD is an indicator of the amount of biodegradable organic compounds in wastewater. The smaller the number, the cleaner the water.

\*4 BD (bone dry)

Oii Paper Group Environmental and Sustainability Report 2005

Environmental Performance

## Forest Recycling: Planting What We Use

#### **Developing community-based tree** plantations—Selecting sites after careful study

The Oii Paper Group is putting a great deal of effort into preparing land for new tree plantations to expand its holdings and achieve its goals.

In 2005, we began operating a tree plantation in Laos, and plan to expand it to 50,000 hectares. We are also looking into potential sites for new plantations in China and Africa.

When deciding on a location for a new tree plantation, we carefully inspect a number of factors, including whether there is sufficient space for planting trees, whether the environment allows us to ensure employee safety, whether the plantation will be economically feasible, and whether the harvested trees can be exported easily. When it comes to actually operating tree plantations, we consult thoroughly with the national and local governments concerned, see to it that operations will not adversely affect the lives of local residents, and make every effort to ensure the plantations benefit the surrounding communities.

We are also promoting the acquisition of forest certification, in which a third party certifies that the forests on our tree plantations are being managed appropriately. So far, we have acquired certification for four overseas tree plantations and are preparing to acquire certification at one other (Table 2).

#### Our forests absorb more CO<sub>2</sub> than we generate using fossil fuels

Of course, the main purpose of planting trees is to secure timber resources. However, trees also contribute greatly to the prevention of global warming by absorbing carbon dioxide (CO<sub>2</sub>) as they grow.

The amount of CO<sub>2</sub> absorbed by the Oii Paper Group's overseas tree plantations in fiscal 2004 was estimated at 5.47 million tons of CO<sub>2</sub>. This figure reaches a total of 6.62 millions tons of CO2 per year when the Group's companyowned forests in Japan are included. Thus, the total amount of CO<sub>2</sub> absorbed by the Group's forests in and outside Japan already exceeds the 6.35 million tons of CO<sub>2</sub> emitted through the burning of fossil fuels during Oji Paper's business operations. As long as we maintain the pace of our tree planting plan, this amount is expected to increase to 12.84 million tons of CO<sub>2</sub> per year by 2010.

Report from Vietnam: Topography and social conditions contribute to the difficulty of developing tree plantations Haruo Miyazaki, President, QPFL



We have been planting trees for ten years at our project site, located in the southern central Vietnamese province of Bindin. With a high population density Vietnam even uses much of its hilly terrain for agriculture. It is therefore difficult to secure land for tree plantations. As

a matter of course, we ended up planting trees in the interior where the topography is precipitous, there are no roads, and economic conditions are very tough. We are currently exploring the possibility of expanding the area of our tree plantation, but the negotiations are being complicated by a number of issues concerning national defense near the border, local residents and the government. In addition, administrative procedures are themselves complicated, and matters are often further complicated by disagreements among the central government, local government and local residents.

Tree planting in Vietnamese forests is an important issue because the forests have been destroyed over the years due to their use for domestic fuel, cutting for slash-and-burn agriculture,

and the spraying of defoliants during the Vietnam War. In addition to planting trees on our leased land as part of our regular project, we are also helping to green the areas along roads and residential areas by distributing saplings to local residents free of charge. We also provide financing for local businesses' tree-planting efforts. Through our tree planting initiatives, we are not only securing stable raw materials for papermaking, but also demonstrating our commitment to local residents, businesses and the environment (through land conservation and the prevention of global warming).

Overseas tree plantation operations are long-term projects which, to a greater extent than in Japan, are attended by unpredictable, serious risks, including fire disasters, insect damage, wind and flood damage, and economic uncertainty. It is my sincere wish that everyone who uses paper would understand the

importance of planting trees and get to know more about our efforts in this field. I would be delighted if this article has helped you gain a better understanding of our overseas tree plantations.



#### **Environmental afforestation: Counting on** forests to serve their many functions

Our overseas tree planting operations have other benefits, as well. They create local jobs, have positive economic effects, and help to prevent salinization and soil erosion. In addition to tree planting for industrial purposes, the Oii Paper Group also undertakes environmental afforestation with the aim of preventing flooding, preserving ecosystems, and reducing wind erosion and desertification. We have worked to plant trees that protect Vietnam's coastline as part of a project funded by a Japanese government Official Development Assistance (ODA) grant. We are also actively contributing to a Nippon Keidanren (Japan Business Federation) afforestation project in China,\*1 aimed at preventing flood damage near the Yangtze River.

The Oji Paper Group is also involved in afforestation based on the Clean Development Mechanism (CDM) under the Kyoto Protocol. In fiscal 2003, the Global Environmental Centre Foundation (GEC) commissioned the Oji Paper Group to conduct basic research on a CDM forest in Madagascar. As of fiscal 2004, we are continuing this research.

#### Managing vast company-owned forests for timber production and social contribution

The Oji Paper Group manages 190,000 hectares of company-owned forests in Japan. These forests were originally used to produce raw material for papermaking. However, in a strategic change, we began to use them also for producing wood for lumber. Currently, plantations account for about 41%, or about 80,000 hectares, of our companyowned forests in Japan. Forests in Hokkaido are planted

Overseas tree plantations: FSC forest certification					
Company	Company Country Date of certification				
PAN PAC	New Zealand	December 2001			
SPFL	New Zealand	February 2004			
APFL	Australia	October 2004			
CNB	Brazil	June 2005			
QPFL	Vietnam	Preparing for certification			

with spruce, Sachalin fir, and larch. Forests in other regions are planted with cedar, cypress, and other species. The average age of the trees in these forests, which were planted mainly following World War II, is about 40 years. We annually invest more than ¥500 million to thin out younger trees and perform other maintenance work.

Forests provide a variety of public benefits including absorption of CO<sub>2</sub>, replenishment of water resources, stabilization of land and preservation of biodiversity. Our company-owned forests in Japan have been estimated to absorb 1.15 million tons of CO<sub>2</sub> per year,\*3 and to provide public benefits worth ¥570 billion per year.\*4 In 2003, Oji Paper established clear guidelines for undertaking forest management, with due consideration given to the preservation of biodiversity, in order to clarify its commitment to this issue. We are also making efforts to effectively utilize our company-owned forests in other ways. Examples include creating a place for hands-on environmental education with the opening of the Oji Forest Nature School, and starting a forest therapy program in cooperation with the NPO Mori no Uta ("Song of the Forest") to contribute to the "recovery of human nature."

We are also moving forward with acquisition of forest certification from Japan's Sustainable Green Ecosystem Council (SGEC). Currently, three of our forests, totaling 4.000 hectares, have been certified. We will continue to work toward the certification of our other forests (Table 3).

CO2 absorption = area x growth x specific gravity x carbon content in wood x scaling factor x

annual growth = 3.9 m<sup>3</sup>/ha in Japan and 25 m<sup>3</sup>/ha outside Japan CO<sub>2</sub> equivalency = 44/12

\*4 Based on the Forestry Agency's assessment of the public benefits of forests ¥75 trillion x 0.76%. (The 0.76% is the ratio of all forest in Japan owned by Oii Paper to all forest in Japan.)

Table 3

Company-owned forests in Japan: SGEC forest certification						
Forest	Location	Area	Date of certification			
Kamiinako	Shizuoka	211 ha	December 2003			
Fuso	Wakayama	645 ha	March 2004			
Biei	Hokkaido	3,152 ha	March 2005			
Total		4,008 ha				

#### \*1 Nippon Keidanren (Japan Business Federation) afforestation project in China

An environmental afforestation project in the central Yangtze valley. supported by Nippon Keidanren, based on recognition that the great Yangtze flood of 1998 was partly caused by reckless deforestation in the river basin. Oji Paper is responsible for implementing the tree planting.

#### \*2 Scaling factor

A factor used to calculate the total volume of timber, including the from the volume of the trunk that is utilized in production

Environmental Performance

## Paper Recycling: Raising the Recovered Paper Utilization

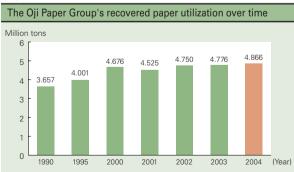
Timber is the raw material of paper. At the Oii Paper Group, we recognize that paper recycling is important not only to conserve forest resources, but also to achieving a sustainable way of life for all. Paired with forest recycling, paper recycling is our other main environmental initiative. Every day, we work to use more recovered paper, striving to show the world how papermaking can be a recycling-based industry.

#### At 4.87 million tons, Oji Paper is Japan's top user of recovered paper, with a recovered paper utilization rate above 60%

Along with forest recycling, the Oji Paper Group sees paper recycling as foundational to its environmental activities. In 2004, we used about 4.87 million tons of recovered paper group-wide (Graph 1). This amount accounts for 26.2% of the recovered paper used in Japan, making the Oji Paper Group the largest user of recovered paper in Japan

#### Recovered paper utilization rate by product category

We use 94.7% recovered paper as the raw material for containerboard and other paperboard products and 31.7% for newsprint and other printing and communications papers. These latter types of paper have a lower recovered paper utilization rate because of the need for high surface quality and printability. It was in order to increase the recovered paper utilization rate for these types of paper, too, that Oji Paper developed the OK Green 100 Series of 100% recycled paper products.

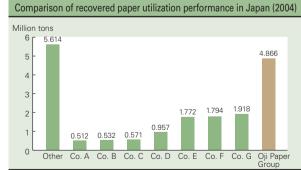


#### Advancing the development of recycling technology—Finding ways to reuse miscellaneous paper that used to be thrown away

In our quest to utilize recovered paper efficiently, we are pushing forward with the development of technology that enables recovered paper to be recycled into the highest quality paper possible by utilizing raw material sorted by grade. For example, paper recovered from magazines used to be recyclable only into paperboard, but we are now able to recycle it into copy paper

We have also developed technology to recycle miscellaneous paper,\*1 which is of lower quality than magazine paper and has to date not been recyclable. We are promoting its use in paperboard to increase our recovered paper utilization rate.

In our efforts to boost utilization of recovered paper, we use recovered paper in a broad range of products—considering the characteristics of both the recovered paper and the products—rather than merely trying to increase the recovered paper content in certain products only. Moreover, when it comes to products that cannot be made



\*3 Coated paper

Printing paper with printability increased by adding a coating of A method for analyzing and comprehensively assessing the impacts on the environment of a product throughout its life cycle, from harvest to procurement, manufacture, distribution, use, and disposal. with recovered paper, we still work to decrease environmental impact by sourcing raw materials from plantation wood chips and certified forests.

#### Recycling itself brings new challenges: Increased waste due to recovered paper utilization

#### Poor separation means more recovered paper that cannot be recycled

Recovered paper sometimes cannot be recycled because the used paper intended to be recycled for different uses, such as copy paper versus paperboard, \*2 is recovered together or has garbage mixed in with it.

#### Even the recycling process creates waste byproducts

About 10% of the weight of recovered paper is made up of pigments, resins, and other non-pulp material. These materials become waste when paper is recycled. Measures to decrease this waste have become difficult, with the increasing use of coated paper.\*3 We recognize that this issue will become even more important in the future.

#### **Evaluating the environmental impact of products** through LCA\*4

There is a certain controversy surrounding the CO<sub>2</sub> emissions from the production of recycled paper. Using virgin pulp newly made from wood actually has merit in that the pulpmaking process produces pulping waste liquor (black liquor), which can be used as a biomass fuel to reduce the use of fossil fuels, which emits CO2. Recycling recovered paper, on the other hand, does not produce black liquor as a by-product. Ironically, recycling recovered paper can result in the consumption of more fossil fuels than using virgin pulp.

It would be a mistake, however, to determine a product's total environmental impact based solely on CO2 emissions. Take the current situation in Japan, for instance. Japan depends on recovered paper for 60% of its pulp raw material. It would be impossible to replace the pulp currently made from recovered paper with virgin pulp, considering the limit to

the amount of timber that can be procured from properly managed forests. Further, if developing countries in Asia, where the consumption of paper is expected to increase dramatically over the next ten years, do not bring their use of recovered paper up to the level of Japan's, there is a chance that the world's forests will be logged indiscriminately. We recognize that Oji Paper must set an example in this area, as well, by striking a balance between forest conservation and CO2 emissions

In promoting the utilization of recovered paper, however, Oji Paper encourages the industry to avoid focusing exclusively on raising the recovered paper content ratio in specific products. We believe the most important point is how much recovered paper is utilized by the paper industry overall.

#### **Exports of recovered paper increasing:** About 13% sent overseas

The export of recovered paper has been flourishing since 2001. In 2004, Japan exported about 13%, or 2.84 million tons, of its recovered paper to China and Southeast Asia. Of the 21.51 million tons of used paper recovered in Japan, the country used 18.54 million tons, with most of the remainder

For the Japanese paper industry—whose most important raw material is recovered paper—the increase in demand for recovered paper in places like China is a cause for concern in terms of the balance of supply and demand. These concerns are underpinned by the fact that exports of recovered paper jumped from a mere 370,000 tons in 2000 to over seven times that amount in 2004, and are continuing to increase.

Oji Paper is of the view that export of recovered paper should continue to a certain extent, since it helps conserve the world's forests by enabling local producers to utilize used paper products from Japan instead of local virgin pulp.

#### Poor-quality recovered paper hinders recycling

Unacceptable items that hinder the recycling of recovered paper include carbon paper, thermal paper, and other papers with special surface finishes. When even a small amount of unacceptable paper is mixed in, it greatly hinders the recycling of recovered paper.

#### \*1 Miscellaneous paper

Boxboard for sweets, wrapping paper, and other domestic recovered paper other than newspapers, magazines, containerboard, and drink cartons.

#### \*2 Paperboard

Unlike flexible and easily folded paper. paperboard refers to paper that is thick and does not bend easily. It is generally used in boxes for sweets and is made from 90% or more recovered paper.

inorganic pigment to the surface.

### \*4 LCA (Life Cycle Assessment)

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## Reducing Energy Consumption: Addressing the Problem

## of Global Warming

The pulp and paper industry is one of the largest consumers of energy. It needs electricity to run its production equipment and machinery and uses huge amounts of heat to dry pulp. In light of this, the Oji Paper Group has initiated several energy conservation programs and is taking unique steps to counter global warming.

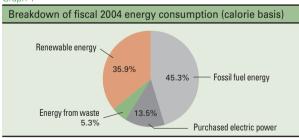
#### Non-fossil fuel energy accounts for about 40% of the Oji Paper Group's energy consumption

#### ■ The pulp and paper industry consumes a lot of energy

The pulp and paper industry is a major consumer of energy, using a large amount of electricity to run its production equipment and machinery and requiring large amounts of heat during the pulp drying process. That is why Oji Paper and other companies in the pulp and paper industry supply the majority of their energy needs through in-house power generation and in-house boilers. The Oji Paper Group is unique in that, with its many cogeneration systems, a large percentage of its energy comes from non-fossil fuel sources.

#### Use of non-fossil fuel energy distinguishes the Oji Paper Group

Approximately 40% of the Oji Paper Group's energy needs are met by non-fossil fuels, such as renewable energy and energy recovered from waste (Graph 1). Among renewable energy sources, we use a lot of black liquor,\*1 which covers about 30% of our overall energy consumption. Black liquor, used as biomass fuel, is concentrated, plant-derived waste liquor that emerges from the manufacture of pulp from wood chips.



#### ■ A long tradition of using cogeneration

The pulp and paper industry adopted cogeneration systems many years ago. Normally, thermal power plants discharge the waste heat (steam) left over from power generation after cooling it with cooling water. In this system, energy efficiency reaches only about 40%. In contrast, cogeneration systems increase energy efficiency to about 70% by utilizing waste heat as a heat source for production processes.

#### Fiscal 2004 total primary energy consumption per unit of output was 2.5% below the fiscal 1990 level — Energy Committee pursues improved performance

The Oji Paper Group substantially reduced its total primary energy consumption per unit of output\*2 during the 1980s However, the rate of reduction has slowed since 1990, as we had already implemented almost all potential energy conservation measures (Graph 2).

Since 1990, we have made it our objective to reduce energy consumption per unit of output by more than 1% each year—focusing on large-scale investments such as replacing equipment with more energy-efficient equipment. However, drops in production efficiency due to decreased production volume and the enhancement of equipment for quality, environmental and safety measures have led to increased energy consumption. This, in turn, has negated the effects of our energy conservation efforts, resulting in fiscal 2004 total primary energy consumption per unit of output remaining as high as 97.5% of the fiscal 1990 level.

To break through this situation and drive energy conservation forward, managers responsible for energy conservation at each business facility gather twice a year at an Energy Committee meeting to share information on new technologies and successful case studies. The information shared is then put to use at various facilities.

#### Working to reduce consumption of fossil fuel energy: Establishing targets that exceed Japanese industry goals

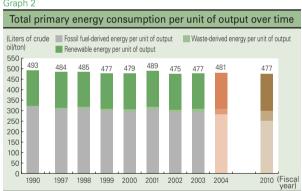
The CO<sub>2</sub> emitted from the combustion of fossil fuels is considered the largest factor behind global warming. That's why we focus our energy conservation efforts on reducing consumption of fossil fuels. The Japanese paper industry overall has raised its target of reducing consumption of fossil fuel energy per unit of output: the new goal is to cut back by 13% from fiscal 1990 levels by fiscal 2010. The Oji Paper Group, however, has committed itself to a 20% reduction (Graph 3). We are making steady progress toward this goal, having achieved a reduction of 11.1% in crude oil equivalent, from 318 liters of crude oil equivalent per ton of paper in fiscal 1990 to 283 liters per ton of paper in fiscal 2004. Going forward, we will meet the fiscal 2010 target through measures such as increasing consumption of energy recovered from waste.

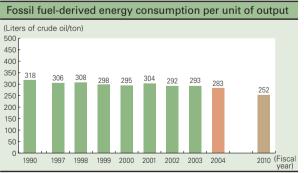
#### Promoting the use of energy recovered from waste-RPF boilers

Shifting to refuse paper and plastic fuel (RPF)\*3 and other sources of energy recovered from waste is one of our main initiatives to reduce fossil fuel energy usage. RPF is a solid fuel made from a mixture of recovered paper that is hard to recycle and plastic waste. At the Oji Paper Group we decided early on to install RPF boilers at the Tomakomai, Oita, Yonago, and Nichinan mills. Boilers have already gone on line at the Tomakomai and Oita mills, and are scheduled to go on line at the Yonago and Nichinan mills in fiscal 2005 and fiscal 2006, respectively.

We see energy recovered from waste as an option with low environmental impact that contributes to the reduction of both waste and fossil fuel usage. Measures to counter waste typically prescribe giving top priority to reduction, reuse, and recycling. When economic and demand factors make using those methods difficult, however, it is best to incinerate the waste, considering the need for sanitation and waste-volume reduction. Merely incinerating the waste generates additional CO<sub>2</sub> emissions, but recovering and utilizing the heat generated from waste incineration (thermal recycling)—that is, using waste products as fuel to replace fossil fuels—enables the reduction of a corresponding amount of fossil fuel usage. The Japanese government has positioned energy recovered from waste as a new energy source and is encouraging this new practice.







\* Companies covered: Oii Paper Co., Ltd., Oii Paperboard Co., Ltd., Oii Specialty Papers Co., Ltd., and Oii Nepia Co., Ltd.

#### \*1 Black liquor

A black, plant-derived waste liquor left over from the kraft pulping process for making pulp from wood. Black liquor is highly valued as a biomass fuel

#### \*2 Total primary energy consumption per unit of output

Amount of energy consumed per unit of production, calculated by dividing total energy consumption by

#### \*3 RPF (Refuse Paper and Plastic Fuel)

A type of solid, refuse derived fuel made from paper and plastic waste. RPF is gaining attention as a means of thermal recycling of plastic waste and hard-to-recycle paper waste.

#### Environmental Performance

## Reducing Energy Consumption Addressing the Problem of Global Warming

Comprehensively evaluating CO<sub>2</sub> emissions,

The Oji Paper Group comprehensively evaluates group-wide

CO<sub>2</sub> emissions using an original method that looks at more

5). Specifically, we calculate the CO<sub>2</sub> emitted from our total

energy use, including fossil fuels as well as biomass and

waste fuels. We also calculate and include the amount of

ultimately. Finally, we estimate the CO2 absorption effect

tree plantations, and subtract this amount from the total

emissions (Graph 5). Calculated this way, our net CO2

of all of our company-owned forests in Japan and overseas

emissions in fiscal 2004 were down 45% from the level of

fiscal 1990. Further, we forecast net emissions will drop by

CO<sub>2</sub> contained in the paper products we produce,

considering the fact that they will likely be burned,

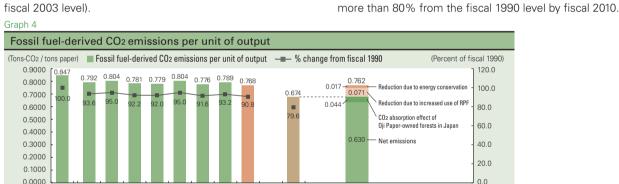
than just CO<sub>2</sub> emissions derived from fossil fuels (Graph

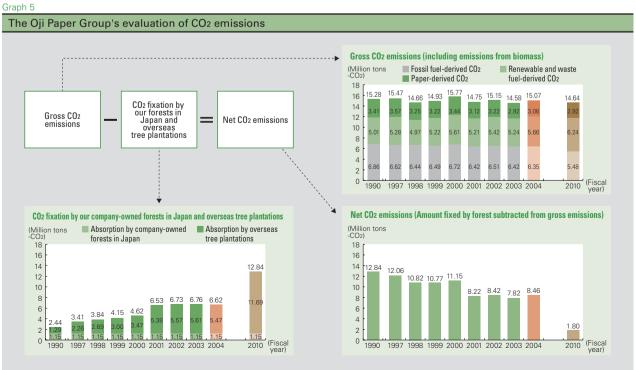
considering forest sinks

#### The Oji Paper Group's approach to the problem of global warming

#### Forecasting a 20% reduction of fossil fuel-derived CO<sub>2</sub> emissions per unit of output

In addition to reducing our consumption of fossil fuel energy per unit of output, we have set a new target of reducing fossil fuel-derived CO2 emissions per unit of output by 20% from fiscal 1990 levels by fiscal 2010 (Graph 4). In fiscal 2004, the Oji Paper Group emitted 0.768 tons of CO<sub>2</sub> per ton of paper (total CO<sub>2</sub> emissions: 6.35 million tons CO<sub>2</sub>). This corresponds to a 9.2% reduction from the 0.847 tons of CO<sub>2</sub> per ton of paper (total CO<sub>2</sub> emissions: 6.86 million tons CO<sub>2</sub>) emitted in fiscal 1990. We expect to achieve our fiscal 2010 target through energy conservation and fuel conversion measures (assuming production at the fiscal 2003 level).





#### \* Companies covered: Oii Paper Co., Ltd., Oii Paper Co., Ltd., Oii Specialty Papers Co., Ltd., and Oii Nepia Co., Ltd.

## Distribution Policy: Global Environmental Preservation

The Oii Paper Group is switching to more environmentally friendly means of transportation. CO<sub>2</sub> emissions are the main factor behind global warming, and must be reduced. By shifting from motor-vehicle distribution, which produces high CO2 emissions, to distribution by sea and rail, which enable large-volume transportation, we are stepping up our distribution efficiency and reducing CO<sub>2</sub> emissions considerably. Our Logistics Division is working to acquire ISO 14001 certification, and we are also pursuing the trucking industry's Green Management Certification. From the shipping of raw materials to the distribution of products, we are moving steadily forward with initiatives to preserve the global environment.

#### Helping to prevent global warming by optimizing transport efficiency

The Oji Paper Group considers impacts on the environment from the transportation of its products and raw materials. Accordingly, we select the optimal means of transport, striving to rationalize our transportation systems in an effort to reduce CO2 emissions. On a ton-kilometer basis (weight multiplied by distance transported), we have shifted about 71% of our line hauls to transportation by rail and ship.

#### Pursuing acquisition of ISO 14001 and Green Management certification

Green Management is an environmental management certification system for trucking companies implemented by the EcoMo Foundation, an external body of Japan's Ministry of Land, Infrastructure and Transport. Certification is given to businesses that undertake a certain level of environmental management initiatives, such as promoting eco-driving and introducing low-emission vehicles.

Oji Land Transport and other trucking companies within the Oji Paper Group are working to acquire Green Management Certification. Oji Land Transport has already acquired certification at 13 of its 17 offices, and is aiming to have all 17 certified during fiscal 2006. As part of this initiative, we are setting specific targets in areas such as improving fuel efficiency.

In line with this Green Management policy, the Oji Paper Group's Trucking Division is working to reduce PM\*1 emissions and is introducing new vehicles that anticipate long-term PM emissions standards (0.0278g/kWh). The Group's Warehousing Division is stepping up its environmental efforts, working toward acquisition of ISO 14001 certification.

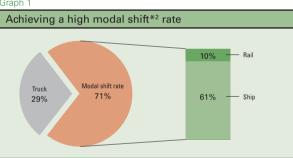
#### \*1 PM

Solid or liquid particulate matter (PM) suspended in the air. In the case of a diesel vehicle, refers to the soot in the exhaust gas.

#### \*2 Modal shift

A means of countering global warming in the area of distribution. Refers to the shifting of transportation of goods by truck, which emits more CO<sub>2</sub>, to transportation by ship and rail, which emits less.

Environmental impact of the Oji Paper Group's product transportation							
	Transported Average distance Weight x distance CO2 en weight (Tons) transported (Km) (Million ton-kilometers) (To						
Ship	2,383,000	1,041	2,481	98,000			
Rail	501,000	752	377	7,000			
Automobile 4,961,000 235 1,165				423,000			
Total	7,845,000	_	4,023	528,000			





meets long-term emissions standards (PM of 0.027a/kWh)



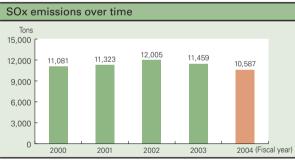
## Air, Water, and Other Environmental Impact

Unfortunately, basic materials industries are unable to avoid having a significant environmental impact on the air and water. In terms of emissions, environmental pollution has improved significantly since the 1970s, when it first became a major social issue in Japan. As long as there is still room for improvement, however, we have an obligation to do everything we can.

#### Air pollutants: Working to substantially reduce VOC emissions

The main source of environmental impact on the atmosphere from paper mills is the exhaust gas from onsite power boilers and waste incinerators. Pollutants in this gas include sulfur oxides (SOx), nitrogen oxides (NOx), and soot.\*1 While the impact of these pollutants has been reduced considerably using modern equipment since the 1970s, large-scale mills still generate huge numbers in terms of annual emissions (Graphs 1, 2, and 3).

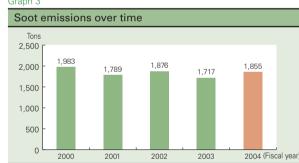
Moreover, volatile organic compounds (VOCs), so-called organic solvents, have recently been singled out for their

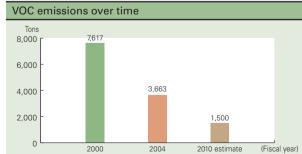


Graph 2 NOx emissions over time 15,000 13.220 12.000 9,000 6,000 3.000 2001 2002 2004 (Fiscal year)

role in impacting air quality. VOCs, regardless of their toxicity, are said to be a source of oxidants—the primary ingredients in photo-chemical smog—when released into

The Oji Paper Group uses VOCs in the manufacture of adhesive papers and release coated papers,\*2 gravure printing, and in film processing and related processes. All together, the Group releases a considerable amount of VOCs into the air. We are working to reduce this amount by 80% by fiscal 2010 compared to our fiscal 2000 levels by making substantial equipment improvements (Graph 4)





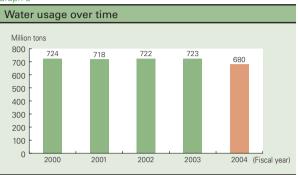
#### **Curbing water consumption** through cyclical use

The paper industry requires huge amounts of industrial water. Paper quality cannot be ensured unless pulp fiber is diluted with water during the papermaking process at a ratio of about 0.5% pulp to 99.5% water. The Oji Paper Group produces roughly 8.26 million tons of paper annually (see page 25). Thus, at this dilution ratio, the Group would need approximately 200 times this amount of water, or 1.65 billion tons of water, just for the papermaking process alone. The Oji Paper Group, however, is able to hold this amount down to less than half, or about 700 million tons of water, through cyclical water use during the production process.

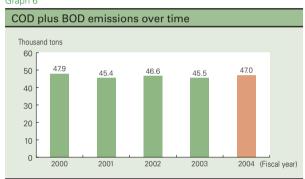
The degree of wastewater cleanliness is expressed in terms of the amount of oxygen needed to decompose dissolved or suspended wastes, using indicators such as chemical oxygen demand (COD) and biochemical oxygen demand (BOD). The larger the COD or BOD number, the more organic compounds are in the water and the more oxygen is required to decompose them. About 30 years ago, a groundbreaking wastewater processing method using activated sludge, in which microorganisms digest the organic compounds, was widely adopted and remarkably improved wastewater treatment. Since then, however, there have been no notable technological innovations in wastewater processing. We anticipate future technology development in this area.

Suspended solids in the wastewater produced by the papermaking industry include mainly short pulp fibers that were not made into paper, and inorganic pigments. We remove these from the wastewater through the coagulation and sedimentation process. The amount of short pulp fibers, inorganic pigments, and other suspended matter that is not easily removed through the coagulation and sedimentation process, while not yet at a level for great concern, has been increasing somewhat in recent years as the recycling of recovered paper advances.

Graph 5



Graph 6





\* Companies covered: Oii Paper Co., Ltd., Oii Paperboard Co., Ltd., Oii Specialty Papers Co., Ltd., and Oii Nepia Co., Ltd.

#### \*1 Soot

Particulate matter included in the exhaust gas from boilers, incinerators, and other combustion equipment. The exhaust gas is generally released to the air after being processed in multi-cyclone dust collectors and electrostatic precipitators.

#### \*2 Release coated paper

A smooth paper affixed over an adhesive as a backing to protect the adhesive surface of adhesive paper A silicone resin is applied to the paper to make it detachable.

Environmental Performance

## Air, Water, and Other Environmental Impact

#### **Storage of PCBs**

Materials that contain PCBs must be tightly controlled and dealt with appropriately by July 2016 according to a method mandated by law. Processing of the Oji Paper Group's PCBs (Table 1) will begin in fiscal 2005.

Table 1

Storage of PCI	B wastes	PCB equipment in use		
Condensers	631	Condensers	204	
Transformers	119	Transformers	5	
PCB ballasts	2,030	PCB ballasts	1,000	
PCB liquid	207 kg			
Slop oil, waste	58 cans			

#### Release and transfer of PRTR\*1 chemical substances

The Oji Paper Group releases more toluene to the environment than any other PRTR chemical substance. Toluene is a volatile organic compound (VOC), and we expect to significantly reduce its release by 2010 (see page 39).

#### Table 2

Substance	Released to atmosphere	Released to public waters	Total released	Total released and transferred	Total released and transferred during previous fiscal year
Toluene	3,000,718	1,320	3,002,038	3,238,738	3,693,172
Chloroform	124,970	27,870	152,840	152,840	147,520
Ethylene glycol	0	27,423	27,423	27,429	40,445
Benzene	29,803	0	29,803	29,803	21,003
Xylene	3,698	38	3,736	4,016	15,806
Formaldehyde	940	8,800	9,740	9,740	19,090
Polyoxyethylene alkyl ether	0	5,022	5,022	5,081	6,369
Manganese and its compounds	0	760	760	1,090	3,880
Water soluble compounds of zinc	0	4,200	4,200	13,872	11,822
Dichloromethane (synonym: methylene chloride)	0	0	0	0	3,000
Boron and its compounds	0	10,926	10,926	32,817	22,192
Ethylbenzene	1,007	0	1,007	1,107	1,447
Vinyl acetate	1,200	0	1,200	1,500	1,500
Cyclohexylamine	2,465	50	2,515	2,515	1,021
Antimony and its compounds	0	140	140	400	1,200
Linear alkylbenzene sulfonic acid and its salt	0	140	140	140	160
n-Butyl benzyl phthalate	0	0	0	753	1,081
Polyoxyethylene nonylphenyl ether	0	0	0	190	240
Copper salts (water-soluble, except complex salts)	0	0	0	1,800	1,300
2-Aminoethanol	0	0	0	889	677
Glyoxal	0	0	0	85	103
Diethylenetriamine	0	0	0	14	4
Hydrazine	30	14	44	44	0
Total	3,164,831	86,703	3,251,534	3,524,863	3,993,032

<sup>\*1.</sup> Pollutant Release and Transfer Register (PRTR)

#### Addressing soil pollution

- 1. As shown in the table below, soil pollution was discovered at two old mill sites at affiliated companies when those sites were sold. Purification measures were taken.
- 2. Voluntary soil pollution surveys
- \* In fiscal 2004, we continued the document audits and on-site interviews that were being conducted in fiscal 2003. This year we are implementing detailed surveys at two mills using a designated survey organization.
- \* We plan to continue with voluntary soil pollution surveys at the remaining group companies.

Location	Pollution	Purification measures
Idle land at the Shizuoka Mill of Oji Specialty Papers Co., Ltd.	Selenium, lead, arsenic, fluorine	Completed excavation and removal of polluted soil in March 2005.
Former Saitama Mill site of Sayama Co., Ltd.	Benzene, trichloroethylene, underground utilities	In December 2004, completed excavation and removal of soil that exceeded acceptable standards.

<sup>\*</sup> In both cases, pollution did not spread to the environment beyond the mill.

## Minimizing Waste Sent to Landfills

As mentioned in the highlight section, reducing waste and using it more efficiently is an important effort for the Oji Paper Group, which is determined to be a recycling-based enterprise. In addition to expanding utilization of recovered paper, we have set high targets for the reduction of waste and are committed to meeting them.

#### Waste increases as recovered paper utilization goes up: Reducing waste is the challenge for the papermaking industry

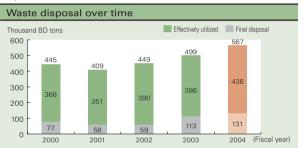
Since about 1997, the Oji Paper Group has worked vigorously both to reduce waste and to utilize it more effectively. Consequentially, the amount of waste ultimately disposed\*1 steadily decreased, but in fiscal 2002, it took an upward turn. Graph 1 shows the amount buried in landfills, out of all the waste sent out of the Oii Paper Group, and the amount that was recycled, reused,

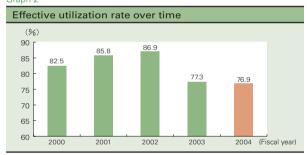
In fact, two of the Oji Paper Group's environmental initiatives are actually causes of increased waste: (1) the promotion of recovery of used paper; and (2) global warming countermeasures. In the former, when recovered paper is recycled, extra material mixed in with the recovered paper is separated and discharged as extraneous matter during the pulping process. This becomes waste (see page 34).

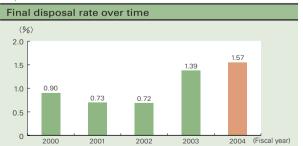
Toward the second objective, we have reduced consumption of fossil fuels (mainly heavy oil) and have increased use of waste-derived fuels instead. However, waste-derived fuels include a lot of inorganic matter that remains as ash after combustion, and this has ended up increasing the amount of ash produced by our mills. We have not been able to increase the utilization of waste fast enough to offset the increased waste generation. Graph 2 shows the trade-off: our effective utilization rate\*2 (i.e. the percentage of all waste that was effectively utilized) has fallen. Graph 3 shows that our waste disposal rate,\*3 in the end, worsened.

The Oji Paper Group is serious about reversing this trend. All of our mills and research institutes are working as one to develop methods to solve the problem. Our R&D efforts are making good progress, and we expect improvements starting around 2007.

Graph 1







\* Companies covered: Oii Paper Co., Ltd., Oii Paperboard Co., Ltd., Oii Specialty Papers Co., Ltd., and Oii Nepia Co., Ltd.

#### \*1 Waste ultimately disposed

While we make an effort to reduce the amount of waste through dehydration, incineration, and other processing, as well as to utilize it effectively for other applications, we must ultimately dispose of the leftover waste that cannot be dealt with by other means by burying it at waste repositories.

#### \*2 Effective utilization rate

The percentage of waste generated at mills that was effectively utilized by being recycled.

#### \*3 Waste disposal rate

The amount of waste generated at mills that was disposed of by burying in landfills, expressed as a percentage of production volume. This is a commonly used indicator in the paper industry.

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## Product Safety: Green Procurement of Raw Materials

Our customers directly handle and touch the paper that we produce. To ensure customer safety and to safeguard the health of our employees at the production stage, the Oji Paper Group gives careful consideration to safety, beginning with the selection of raw materials.

#### What is paper safety?

Paper, which is made by cooking\*1 wood chips, extracting the pulp, and running it through the papermaking\*2 process, is basically harmless. However, pigments, binders (adhesives), and other chemical-containing materials are added, depending on the type of paper. Accordingly, the Oji Paper Group gives careful consideration to safety when selecting raw materials and procures them based on its own strict standards. This ensures that we can enable customers to use our products with peace of mind, protect the health of our employees during production, and prevent environmental pollution.

Table 1

#### **Product Safety Charter**

stablished 19

Oji Paper has, throughout its history, delivered safe products, fully recognizing that its corporate social responsibility entails providing quality and services that enable customers to use its products with peace of mind. Going forward, we will continue to fulfill the trust of our customers by ensuring that all of our employees reliably implement the following commitments.

- We will continually improve our group-wide quality control system, ensuring that we always provide safety-conscious products using the latest technology.
- 2. We will provide timely and appropriate information on product safety and proper usage.

#### **Product safety improvement framework**

### Ensuring safety by setting screening standards stricter than those required by law

Since as early as 1994, the Oji Paper Group has used its own New Raw Material Safety Sheets to improve product safety. Under this unique screening system, new raw materials are examined to ensure the materials can be safely handled by employees in our mills and safely used by customers, and also reviewed to prevent environmental pollution. We request suppliers to provide safety data on materials that we purchase, and when raw materials include substances that present safety concerns, instruct them to use alternative substances. If alternative substances cannot be substituted, we will not use that raw material, even if the substance in question is only present in a tiny amount.

Japanese law requires businesses that handle chemical substances to produce Material Safety Data Sheets (MSDS\*3) that contain information on the safety and proper handling of chemical substances. The Oji Paper Group obtains MSDS from all raw material suppliers. However, we determined that the information on MSDS from the raw material suppliers was inadequate for assessing the raw materials to ensure safety during production and use. This determination led us to design our unique New Raw Material Safety Sheets, which ask for more detailed information than MSDS.

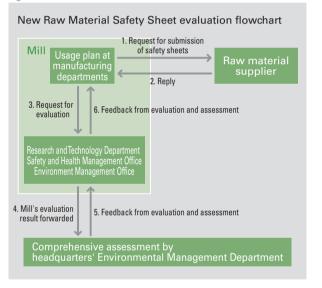
#### ■ New Raw Material Safety Sheets

When we consider using a new raw material, each mill requests suppliers to submit a safety sheet. The information is evaluated by departments at the mills and by the headquarters' Environmental Management Department, and a decision is made on the advisability of using the raw material (Figure 1). We update the information requested by the safety sheets as needed to comply with revisions in Japanese and foreign laws and regulations.

The requested information includes manufacturing techniques, and the analytical tests cost money. Clearly, this initiative could not succeed without the understanding and cooperation of raw material suppliers. Almost ten years since we launched it, however, the practice is firmly established. The Oji Paper Group hopes that this practice will spur suppliers to improve their products and facilitate their growth by helping them to meet the needs of the times.

By the end of fiscal 2004, we had evaluated as many as 11,190 substances using our New Raw Material Safety Sheets. Of these, we decided not to use about 400 for safety reasons.

Figure 1



## Safety measures for chemical substances used in products

As a matter of course, the Oji Paper Group complies with all laws and regulations. We also undertake independent initiatives such as those listed below to ensure the safety of chemical substances used in our products.

1. Full phase-out of surfactants made from nonylphenol and octylphenol, which have been reported to cause

- endocrine disruption\*4 (so-called environmental hormones) in the ecosystem.
- 2. Full phase-out of fluorine-containing water repellants and oil repellants used in food packaging. These substances have been found to persist in the environment over a long period of time and to accumulate in the bodies of living organisms.
- 3. Compliance with European directives\*5 (76/769/EEC) restricting the marketing and use of azo dyes made from specified aromatic amines. This equates with compliance with the standards of the Japanese eco-label scheme known as "Eco Mark."
- 4. Disuse of raw materials that test positive for mutagenicity (the potential to cause gene mutations—that is, a characteristic related to carcinogenicity).

#### Green procurement: Ensuring the safety of raw materials



Kikunori Matsubara General Manager Product Safety Management Office Environmental Management Department Oji Paper Co., Ltd.

At Oji Paper, we feel strongly about ensuring the safety of raw materials—beginning from the moment they arrive at the mill—in order to ensure the safety of our products. We built a system to accomplish this in 1994 and have been using it ever since. At the time, in 1994, some of our suppliers were not very happy about our requests for detailed disclosure of information, with the costly analysis and

time-consuming surveys they entailed. However, as the public later called into question the safety of products, and as the PRTR legislation appeared, more firms started to expect this level of cooperation. I think it was our long track record of strong performance that moved the Center for Environmental Information Science to award Oji Paper the first PRTR Honorable Mention Award in fiscal 2004.

#### \*1 Cooking

A process of stewing wood in an alkali bath and leaching out the resins to separate the pulp from the wood. The plant waste liquor that is leached out in this process is made into the biomass fuel known as black liquor.

#### \*2 Papermaking

The process of making paper by spreading pulp out thin. Pulp is diluted in water at about 0.5% pulp and spread out on a wire mesh. After the pulp mat has been dehydrated on the wire mesh, the pulp sheet is pressed and then hot air dried into paper.

#### \*3 MSDS

Material Safety Data Sheet. A means of communicating hazard and toxicity information and handling precautions for chemical substances when those substances are traded between businesses.

#### \*4 Endocrine disruption

An effect of certain chemical substances, which act as if they were hormones within the body and can trigger damaging and deleterious effects.

#### \*5 European directives on chemical substances

The EU's regulations on chemical substances are at the forefront of the field internationally. Japan's exporting companies consider the EU's regulatory trends especially important and work to comply with them promptly.

## Forestry Research Institute: Supporting Tree Plantations around the World

Forest recycling is a core element of the Oji Paper Group's approach to environmental responsibility. The Oji Paper Forestry Research Institute delivers the technological innovations required to meet the challenge of increasing the productivity of our plantations, to secure a stable supply of raw material for paper for many years to come. The researchers at our Forestry Research Institute are hard at work behind the scenes, ensuring that the world will always have an adequate supply of paper.

## Supporting forest recycling—Developing technologies to stabilize the world's supply of raw material for paper

### Research to improve tree quality and cultivation techniques to grow richer forests

The Forestry Research Institute has a long history. It opened in 1956, before forest conservation issues had emerged, as the first private-sector tree breeding research center in Japan.

The reason that Oji Paper established its own tree breeding research center so early on—without relying on national or local governments—was its fundamental belief that papermaking is inseparable from forest-making. Ever since, the Institute has been engaged in biotechnology-driven research on methods to improve tree quality and cultivation techniques.

The key factors in successful tree plantations are:

(1) securing good land; (2) selecting, multiplying, and planting trees with quick growth and high quality wood; and (3) ensuring trees grow to maturity. The Forestry Research Institute focuses on the latter two points. At three of the Institute's research facilities (Kameyama City in Mie



Prefecture, Japan, and Albany and Brisbane in Australia), work is underway to obtain superior, new varieties of eucalyptus, and to develop methods to supply the large quantities of eucalyptus saplings that are needed to plant our expansive tree plantations.

### Specializing in eucalyptus research for highly efficient overseas tree plantations

The Forestry Research Institute's current objective is to boost productivity at our overseas tree plantations.

Accordingly, the Institute specializes in research and development of eucalyptus tree plantation technology.

Of all the many tree species, the Institute specializes in R&D on eucalyptus because eucalyptus trees grow quickly, make high-quality pulp, and have a high probability of doing well in many types of soil and climates. It is the tree of choice for overseas plantations. Eucalyptus trees, however have the drawback of shallow roots; they are easily toppled by typhoons and strong winds. Solving problems like this is one of the tasks of the Institute. The Institute has also pioneered the expansion of the biotechnology field ahead of other companies. For example, the Institute is conducting joint research with other institutions in a project to analyze the genome of the eucalyptus tree—an important hardwood tree for raw materials—and is leading the world in the drive to elucidate the unknown genetic code of the eucalyptus. Today, the Institute is well known within Japan and internationally as one of the world's leading tree research institutions. In recent years, as the capacity of tree planting to address environmental concerns has become better known, the Institute has been commissioned to perform national research projects.

The Oji Paper Forestry Research Institute conducts research to breed superior trees for producing wood chips, the raw material for paper.

## Challenge for the future: Safe, practical application of recombinant DNA technology

The Oji Paper Forestry Research Institute was among the first to work on recombinant DNA technology for trees. It has succeeded in creating new tree varieties that have the ability to grow in poor environments characterized by dryness, salinization, and excessive acidity. But this work involves special cautions. Unlike research on animals that uses the same recombinant DNA technology, we must consider the diffusion of plant pollen to the natural environment. As of yet, there is no global consensus on the use of transgenic trees due to anxiety over direct manipulation of the genes that regulate life.

Accordingly, when the Forestry Research Institute conducts research on transgenic trees, it does so inside sealed environments to prevent pollen from escaping into the outside environment. The Institute is currently working to develop technologies that can provide practical solutions to this issue, such as techniques to prevent the production of pollen.

Mature eucalyptus trees on the grounds of the Institute







Freehands continue and a second

Coppice regeneration

#### Researching eucalyptus trees to find solutions for the paper of the future



Makoto Sakaino
Institute Director
Forestry Research Institute
Research & Development Division
Oli Paner Co. Ltd.

Tree research requires a lot of patience. It may take ten years or more for a tree to reach maturity, but research results take just as long, sometimes even longer.

Of course, sometimes you can tell whether the tree will grow strong or not after the first couple of years. However, a lot remains unknown until the tree has grown. Few private-sector companies would continue to run a research institute that requires ten years to produce a single research result. Clearly, Oji Paper is committed to the idea that papermaking is inseparable from forest-making.

When I set about my tree research, I naturally start to think about the sustainability of our planet. If we continue to allow our societies to rely mostly on fossil fuels, as we do now, our way of life will become unsustainable by 2050—and the supply of paper will certainly become unstable. I think the answer is switching from the petrochemical industry of the 20th century to a woody biomass industry in the 21st century. Maintaining forests is essential to achieving that goal, as is conducting interdisciplinary research so that future generations will also be able to maintain forests.

The Institute is currently focusing its research on developing eucalyptus trees that can be grown under very poor conditions. Today, eucalyptus trees only grow in regions that have at least 600 millimeters of precipitation per year. However, if our research is successful, we will produce eucalyptus that only need annual precipitation of 400 millimeters. That will make it possible to supply three times the current amount of wood resources, covering the world's future demand for wood in one stroke. Of course, solving the precipitation problem is not the final challenge.

Many issues remain, such as whether or not nations will allow tree plantations with this new variety of eucalyptus and the availability of growing areas near ports that can ship the wood chips. Nonetheless, whenever the research gets tough, I stop to consider that what we are doing may one day solve the world's shortage of wood resources, which gives me all the inspiration I need to continue. My role in all this is to build a system that enables the Institute's staff to apply themselves fully in pursuit of our mission: securing the resources of the future and protecting the global environment. I will continue to do my utmost to get this done.

Environmental and Sustainability Report 2005

Environmental Performance

## **Environmental Accounting**

#### Aggregated results of environmental accounting

In fiscal 2004, we reduced investment in boilers using new energy sources, which accounted for 57% of our total environmental investment in the previous fiscal year. This was offset, however, by increased investment in chlorine-free bleaching equipment and energy conservation measures. As a result, total environmental investment fell only 9% from fiscal 2003. Total environmental expenses remained almost unchanged, although soil purification expenses (see page 41) increased from last year's ¥116 million to ¥510 million.

This year, we added one more company, Oji Tac Co., Ltd., to the number covered by our environmental accounting system. Since this company accounted for only a small percentage of the overall totals, however, we used just a simple comparison with fiscal 2003 results. Total R&D investment came to ¥363 million, up 78% from the previous year, and total R&D expenses rose to ¥2.701 billion, a 35% increase over the previous year.

(Millions of yen)

En	vironmental conservation cost			(IVIIIIIOIIS OI YEI
	Category	Main initiatives	Investment	Expenses
1	. Environmental conservation costs for curbing environmental impact generated by production and service activities within business sites		21,199	15,871
own	a. Environmental conservation management costs	Renovation of electrostatic precipitators, changeover to ECF bleaching equipment, installation of deodorizing equipment, noise and vibration control measures, soil purification	5,012	10,061
Breakdown	b. Global environmental conservation costs	Cultivating company-owned forests in Japan, overseas tree plantation operations, energy conservation investments	4,944	559
	c. Resource recycling costs	Efficient utilization of resources, expenses for waste measures	11,243	5,251
2	. Costs for curbing environmental impact generated by production and service activities	Expenses for purchasing low-sulfur fuel (balance amount), effective utilization of wastes	0	1,674
3	. Environmental conservation costs within management activities	Employee education, ISO 14001 expenses, expenses for air and water analysis, expenses for operating committees and other organizations	4	670
4	. Environmental conservation costs within R&D activities		363	2,701
5	. Environmental conservation costs within social activities	Philanthropic programs, support for various environmental groups, environmental reporting, environmental exhibitions and other public relations activities	0	146
6	. Costs related to environmental damage	Pollution impact levy (SOx)	0	969
		Total	21,566	22,031

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Environmental co	nservation benefit
Result	Environmental impact indicators
Energy conservation	In fiscal 2004, energy use in crude oil equivalent was reduced by 55,456 kl, and consumption of fossil fuel-derived energy per unit of output decreased by 11.1%, both compared to 1990 levels.
Waste reduction	Amount of waste disposed in landfills increased by 18,000 tons, or 16%, compared to fiscal 2003. The disposal rate deteriorated from 1.386% to 1.57%.
Overseas tree planting	Planting of trees increased, but was offset by the sale of plantation land, which reduced total land area by 3,530 ha compared to the previous fiscal year.
Recovered paper recycling	Recovered paper utilization rate increased from 60.5% to 60.8% compared to fiscal 2003. Recovered paper utilization increased from 4,776,000 tons to 4,866,000 tons.
Philanthropic programs	In fiscal 2004, 491 tons of disposable chopsticks were recovered, and 23,880 employees participated in local cleaning and beautification programs.

	(Millions of yen)				
Economic benefit associated with environmental conservation activities					
Effect	Value				
Income from company-owned forests in Japan	327				
Expense reductions through energy conservation	2,842				
Income from recycling	1,278				
Total	4,447				

#### Method and scope of data aggregation

- \* Data aggregation was performed in accordance with the *Environmental Accounting Guidelines* published by Japan's Ministry of the Environment in March 2000, March 2001, March 2002 and February 2005.
- \* Scope of aggregation: Oji Paper and its main affiliates (Oji Paperboard, Oji Specialty Papers, Oji Nepia, Oji Container, Chiyoda Container, Oji Cornstarch, and Oji Tac). Oji Tac Co., Ltd., was added into the aggregation
- for the first time in fiscal 2004. \* Period covered: April 1, 2004 - March 31, 2005

## Data for Individual Mills

Table 1

	Production	Envi	ronmental i	mpact on w		Environmental impact on atmosphere			Waste				
		Water consumption	Waste water	COD + BOD	Suspended solids	Sulfur oxides	Nitrogen oxides	Soot	Effectively utilized waste	Disposal waste	Total discharge	Effective utilization rate	Disposal rate
						S0x	N0x				Utilized + disposed in landfill		
Establishment	Tons	Thousands of tons	Thousands of tons	Tons	Tons	Tons-SO2	Tons-NO2	kg	BD tons	BD tons	BD tons	%	%
Kushiro Mill	672,775	78,448	76,427	8,536	3,948	2,543	1,024	367,000	66,863	597	67,460	99.1	0.089
Tomakomai Mill	1,202,790	131,985	119,455	14,204	7,367	2,219	2,568	107,000	134,640	68,553	203,193	66.3	5.699
Edogawa Mill	135,974	12,670	11,070	34	0	63	89	3,000	2,681	0	2,681	100.0	0.000
Fuji Mill	407,488	33,002	32,690	1,317	952	78	394	26,300	38,027	2	38,029	100.0	0.000
Kasugai Mill	725,643	66,289	61,096	2,606	170	348	1,246	330,800	30,410	16,311	46,721	65.1	2.248
Kanzaki Mill	128,033	354	354	18	10	0	19	95	11,994	30	12,024	99.8	0.023
Yonago Mill	574,487	44,128	42,000	2,966	1,437	219	1,099	156,000	8,954	106	9,060	98.8	0.018
Kure Mill	299,732	36,318	51,217	2,682	885	13	843	25,000	10,638	294	10,932	97.3	0.098
Tomioka Mill	611,663	60,846	60,846	3,665	1,378	268	1,237	159,000	14,685	389	15,074	97.4	0.064
Nichinan Mill	290,579	40,349	40,349	3,156	2,146	1,422	731	147,000	4,223	16,822	21,045	20.1	5.789
Total	5,049,164	504,389	495,504	39,183	18,293	7,174	9,251	1,321,195	323,115	103,104	426,219	75.8	2.042

Table 2

		Production	Ene	Energy Environmental impact of emissions into water					to water	
			Fossil fuel consumption	CO2 emissions	Water consumption	Wastewater	COD	BOD	COD+BOD	Suspended solids
			Crude oil equivalent	Derived from fossil fuels						
Establishment	Number of facilities	Tons	Thousands of kl	Thousands of tons-CO2	Thousands of tons	Thousands of tons	Tons	Tons	Tons	Tons
Oji Paper Co., Ltd.	10	5,049,164	1,393	3,759	504,389	495,504	30,596	8,587	39,183	18,293
Oji Paperboard Co., Ltd.	10	2,498,074	626	1,797	103,248	99,098	1,877	1,998	3,876	2,506
Oji Specialty Papers Co., Ltd.	9	540,162	204	534	64,028	65,159	566	2,937	3,503	1,364
Oji Nepia Co., Ltd.	4	225,510	115	261	8,683	8,770	420	0	420	127
Oji Cornstarch Co., Ltd.	3	351,768	53	115	5,988	5,021	92	91	183	126
Oji Container Co., Ltd.	22	768,777	28	63	569	497	0	6	7	4
Chiyoda Container Corporation	12	280,482	10	23	122	138	0	3	3	2
Oji Tac Co., Ltd.	2	31,453	10	21	1,100	1,100	0	2	2	1
Yupo Corporation	1	18,808	13	27	63	47	0	0	0	0
Oji Kinocloth Co., Ltd.	2	11,469	8	14	560	560	0	0	0	0
Oji Packaging Co., Ltd.	2	78,239	4	9	40	40	0	0	0	0
Total for 25 other affiliates	68	373,493	34	59	538	460	0	0	0	0
Total	145	10,227,399	2,498	6,682	689,327	676,394	33,552	13,626	47,177	22,423

	Environmental in	npact of emission	s to atmosphere	Industrial waste				
	Sulfur oxides	Nitrogen oxides	Soot	Effectively utilized waste	Disposal waste	Total discharge	Effective utilization rate	Disposal rate
	S0x	N0x				Utilized + disposed in landfill		
Establishment	Tons-SO2	Tons-NO2	kg	BD tons	BD tons	BD tons	%	%
Oji Paper Co., Ltd.	7,174	9,251	1,321,195	323,115	103,104	426,219	75.8	2.042
Oji Paperboard Co., Ltd.	1,039	2,664	174,084	64,057	20,713	84,770	75.6	0.829
Oji Specialty Papers Co., Ltd.	1,685	969	241,263	44,306	4,128	48,434	91.5	0.764
Oji Nepia Co., Ltd.	688	473	23,973	4,191	2,858	7,048	59.5	1.267
Oji Cornstarch Co., Ltd.	17	55	161	1,237	290	1,527	81.0	0.082
Oji Container Co., Ltd.	39	33	1,340	77,600	621	78,221	99.2	0.081
Chiyoda Container Corporation	50	16	2,220	24,961	494	25,456	98.1	0.176
Oji Tac Co., Ltd.	36	11	3,120	3,180	179	3,359	94.7	0.569
Yupo Corporation	0	0	0	804	8	812	99.0	0.043
Oji Kinocloth Co., Ltd.	1	19	0	716	62	778	92.0	0.541
Oji Packaging Co., Ltd.	0	0	0	8,969	86	9,055	99.1	0.109
Total for 25 other affiliates	35	18	1	12,875	1,727	14,603	88.2	0.462
Total	10,765	13,509	1,767,357	566,011	134,269	700,280	80.8	1.313

50

## **Employee Relations**

The Oii Paper Group Corporate Code of Conduct declares our commitment to "achievement of employee satisfaction." Our human resources programs are carefully formulated to ensure employee health and safety, provide comfortable workplaces, and give all employees the opportunity to prosper as they realize their full potential.

#### **Creating optimum working conditions**

#### The Oji Paper Group's human resources philosophy: Management based on respect for people

The Oii Paper Group is proud of its 130-year history of excellent labor relations. At the core of this success are the positive human relationships—the bonds of affection and trust—that characterize both our management and staff. This intangible relational asset is, in fact, our most valuable possession. Built on the bedrock of our management philosophy—management based on respect for people—our basic human resources policy is to build an organization that encourages each employee's originality and ingenuity.

In recent years, we have enjoyed stable labor relations as we enhance both the quality and quantity of our human resources worldwide. We are shifting from an emphasis on seniority to a performance-based human resources system, and this is energizing the entire organization. We are also working to utilize individual abilities more effectively by assigning the best person for each position and offering challenging rotations (Table 1).

#### Human resources system upgraded to motivate the entire workforce

In March 2005, we launched a major revision to our group human resources system designed to build a highly motivated workforce—which we believe is the wellspring

Table I					
Main human res	ources programs				
Performance-based human resources and salary system for managers	Introducing a transparent performance evaluation system and salary system based on clarification of the results and abilities expected of managers.				
Ability-based grade system for regular employees	Operating an ability-based human resources and wage system based on clear functional qualification standards.				
Personnel transfer and assignment system	Systematically implementing job rotations to enable individuals to demonstrate their abilities more effectively, based on a commitment to assigning the best person for each position.				
"Self-declaration" system	Implementing annual employee self-declarations of career vision in conjunction with interviews with supervisor, with a view toward long-term, systematic human resources development.				
Encouraging employees to pursue new qualifications	Operating a system of providing incentive pay for employees who acquire new qualifications, in order to create a corporate culture where individuals take the initiative to learn and advance their careers.				

of all business development. The changes are focused on three priority areas: (1) creating a culture where people take the initiative to learn; (2) strengthening capability on the job; and (3) enhancing education to foster future top managers.

In the first area, we have established a distancelearning program of skill development courses, promoting a culture that makes it easy for employees to improve their own skills. In the second, we are maintaining on-site expertise by keeping experienced employees who want to continue to work past the official retirement age—ensuring their skills are passed on. We have also worked out guidelines for implementing rank-driven and departmentbased educational programs. In the third area, management-level instruction, we have implemented executive candidate training programs covering strategic planning, business operations, and business analysis (Table 2).

Table 2



#### ■ Women succeeding in research positions

In hiring employees, our door is open to all, regardless of gender. Our hiring process is driven by character and ability. The percentage of women among new recruits has been increasing gradually in the main career track office positions, and we have reinforced our childcare leave system. In the research division, women are enjoying impressive success, and hold about 20% of the management positions. The one area where steady progress remains to be made is the mills, which are typically run on a demanding three-shift system and require mostly hard manual labor.

#### Support for childcare

Based on the Law for Measures to Support the Development of the Next-Generation, the Oji Paper Group has established a five-year Master General Business Action Plan and is promoting measures that support childcare.

Our main measures include: (1) a free childcare consultation service at the Oji Group Health Consultation Office; (2) a shorter working hours system (flextime, parttime, and working every other day) to enable care for children before they start elementary school; (3) encouraging male employees to take childcare leave; and (4) holding company tours for employees' children.

We also provide some financial support to make raising children and work compatible; we pay a partial salary to employees from the time they start childcare leave until their child reaches one year of age, even though it is not required by Japanese law.

#### **Employment of persons with disabilities**

The Oii Paper Group Corporate Code of Conduct commits us to both legal compliance and proactive social contribution. It is only natural, then, that we are vigorously promoting company-wide employment of persons with disabilities, aiming to facilitate their full participation in society.

We worked hard on this issue in fiscal 2004, with a particular focus on creating jobs for persons with mental disabilities. We hired 29 new persons, including 15 with severe disabilities, reaching the 1.8% employment rate mandated by law as of the end of the fiscal year.

Looking ahead, we will continue to hire persons with disabilities. We are now considering ways to create positions at headquarters and in the mills that are especially tailored for persons with certain disabilities,

encompassing duties from traditional job categories as well as peripheral tasks.

#### Comprehensive support for employee health management

We practice disease prevention through regular health checkups and post-checkup follow-ups with industrial physicians. In July 2002, we introduced a mental health system that combines phone consultations and counseling. Also in July 2004, we expanded the Oji Group Health Consultation Office, which provides comprehensive support for the physical and mental health of employees and their families, focusing on early detection and treatment of disease. We are also working to improve working environments in compliance with the Health Promotion Law.



#### Occupational safety and health

#### Safety initiatives

In fiscal 2004, we established the Oji Paper Group Guidelines for the Promotion of Occupational Safety and Health. On the basis of these guidelines, which spelled out top management's commitments and responsibilities, we have established a safety promotion organization, prepared safety regulations and work procedure instruction sheets, enhanced safety awareness group-wide, encouraged a culture of safety, and improved machinery safety.

We have started to conduct regular on-site "bell patrols," in which the general manager of each mill walks through the mill with a hand-held metal bell, checking to make sure there are no work or equipment problems and talking with the equipment operators. We also recently enhanced the

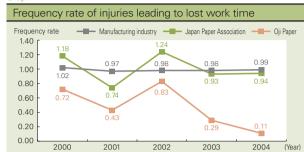
risk management system (introduced in 2002) at all Oji Paper mills, and our Safety Division performed safety inspections at affiliated companies. In fiscal 2004, these steps led to a reduction in workplace injuries at Oji Paper. However, affiliated companies unfortunately had more workplaces injuries than Oji Paper. These accidents were primarily due to insufficient efforts to spread safety awareness and overdue equipment safety measures.

In reflecting on fiscal 2004, we have decided to redouble our efforts to promote safety in 2005 based on the guidelines. We are strengthening safety measures at affiliated companies and expanding the risk management system already introduced at some affiliated companies to the mills of all affiliated companies.

### Safety commendations, and briefings on occupational safety and health research

At the executive officers meeting held every January, Oji Paper presents presidential commendations to mills that have strong performance in preventing workplace injuries, thereby further promoting safety awareness. In January 2005, two mills received the Safety Efforts Award, which is

#### Graph '



Frequency rate = (Number of fatalities and persons injured / Total working hours) x 1,000,000 Japan Paper Association: Data for member companies of the Japan Paper Association. Data are from January to December of each year.

given to mills and partner associations for reaching four million total accident-free work hours.

Every year from May to June, Oji Paper's ten mills and one business office divide into two blocks and hold briefings on occupational safety and health research. At each meeting, participants deliver presentations on the risk management successes of excellent workplaces at each mill. In September, the workplaces selected at these meetings participate in the National Paper and Pulp Occupational Safety and Health Conference sponsored by the Japan Paper Association.

#### Employee union gives its full support to promotion of CSR



Makoto Mieda Employee Union President Oii Paper Co., Ltd.

The foremost mission of an employee union is to protect the employment of union members. Of course, a corporation depends for its existence on the trust of society, so it must fulfill its social responsibility and take compliance seriously. The United Nations Global Compact articulates these corporate obligations, and our employee union fully supports the Oji Paper Group's participation in the Global Compact. After all, companies who adhere to these principles of responsibility will by definition be the most stable, long-term providers of employment.

Recently, scandals at leading companies have become a frequent occurrence, despite the fact that corporate social responsibility has been receiving heightened attention for a long time now. Problems that had slipped through the cracks when CSR efforts began have finally come to the surface.

The Oji Paper Group has continued to undertake business activities that contribute to society, a fact it can be proud of. This is likely due

to a corporate culture that has valued the corporate ethics inherited from the time of the company's founding, represented by the words rongo (the Analects of Confucius), symbolizing good ethics, and soroban (abacus), symbolizing good business practices, as well as the effectiveness of the Union in providing a check on management, based on stable labor-management relations. Participation in the Global Compact and establishment of the Oji Paper Group Corporate Code of Conduct have been key in the company recognizing its own corporate social responsibility, by giving clear expression to the company's tradition and to efforts to establish an unshakable corporate foundation for the future.

I hope our employee union at Oji Paper Co.,
Ltd., will help support CSR-based management
along with the company by continuing to
cooperate with other employee unions across the
Group and by enhancing our function as a check
on management through the Labor-Management
Committee and other special committees.

## Community Relations

The process of making paper unavoidably produces odors and noise. In dialogue with community residents, the Oji Paper Group is making efforts to improve its environmental measures and develop its business in a way welcomed by people living in the neighborhoods near our mills.

#### Responsibility for mill operations

Community environmental monitor system proves useful in environmental improvement policy and mill operation

At each of the Oji Paper Group's mills, we have established an environmental monitor system in which we ask neighborhood residents for their opinions about environmental problems and possible countermeasures.

While the environment management office and general affairs office at each mill take daily environmental measurements in and outside the mill, information from the community environmental monitors, who are aware of the environment around the mill throughout the course of

their daily lives, is extremely important for understanding environmental impact and designing countermeasures.

We hold regular meetings with the community environmental monitors, where they provide their opinions and make requests on behalf of local residents. The mill also informs them of the status of business activities and reports on the results of environmental improvement measures taken, future plans, and their anticipated impact. These discussions with the community environmental monitors have deepened mutual understanding and are proving very useful in improving the environment around our mills.

#### Yonago Mill community monitors meeting report

#### Dialogue with residents who live near the mill

Oji Paper owns Yonago Mill (Photo 1), which produces 50,000 tons per month of world-class, high-quality coated papers and high-quality white paperboard. Because the mill is located near residential neighborhoods, the mill has asked 15 local residents to act as community environmental monitors and provide their opinions. The same system is used at our other mills, as well.

On May 11, 2005, the mill held a regular meeting with the monitors (Photo 2). Twelve company employees participated, including the assistant general manager of the mill and staff from the Environment Management Office and the headquarters' Environmental Management Department. The mill gave a summary of information on foul odors and noise that had been reported by the monitors throughout fiscal 2004, explained what environmental measures the mill had implemented, and took the opportunity to listen again to the monitors' opinions and requests.

The Yonago Mill manufactures paper from wood chips. Sulfur emerges when the



chips are cooked to separate the pulp and can potentially escape at various points in the process—from the transfer line to the combustion disposal



Photo 1

process—producing a peculiar foul odor that can be detected in nearby neighborhoods. The Yonago Mill takes this problem very seriously. When monitors report a foul odor, mill representatives immediately visit their houses and ask many details.

During the meeting on May 11, monitors said that, although someone from the mill comes to interview them every time they report a foul odor, the explanation given is rarely sufficient. They also indicated that, even though local residents are used to some odors, people visiting from outside the area complain about bad smells. We were reminded that, if visitors notice odors, we must get to the bottom of the problem, take countermeasures, and explain these steps to the local residents. Going forward, we will work harder to live up to our accountability.

The Yonago Mill will continue its dialogue with local residents in an effort to minimize inconvenience for them, and hopes to continue receiving their input on environmental measures.

## Corporate Citizenship: Working Together with Local Communities

The Oji Paper Group's dedication to good corporate citizenship extends from headquarters to every local business site. Our efforts are guided by the twin principles of "community-based social contributions" and "contributions that make the most of the unique character of our business."

#### Good corporate citizenship means being active in the local community

The Oji Paper Group sees contributing to the communities where we operate as a natural duty of good corporate citizenship. Our business facilities help out with community clean-ups, take part in beautification projects by planting trees and flower beds, and join in the fun at local festivals, just as any local resident naturally would. We also welcome members of the general public to our company facilities, for instance by offering health clinics and kindergartens that are managed directly by the company. Further, we strive to be an exemplary member of neighborhood associations. In all this, our goal is to play an active role in building up each local community.

#### Local volunteer activities with the Japan **Groundwork Association**

The Japan Groundwork Association was a key player in helping the Oji Paper Group to start many of its community volunteer activities. The ethos of the Groundwork Association, which originated in the United Kingdom, is that citizens, local government, and companies should work together to contribute to the local environment. The Japan Groundwork Association was established in October 1995. In agreement with its ethos, Oji Paper became the first corporate member, and has since extended the Groundwork ethos to its business establishments across Japan.

#### Oji Forest Nature School: Programs and NGO collaboration that make the most of our regular business of forest management

For four days in August 2004, we held the Oji Forest Nature School program at our forestry museum and

company-owned forest located in Kuriyama, Hokkaido, Japan. This program, held jointly with the NGO Japan Environmental Education Forum, taught the importance of nature to 22 children from all over Japan



Children participating in the Oji Forest Nature School.

#### Launch of a disposable chopsticks donation fund, a program that makes the most of our regular business of manufacturing pulp

In July 1992, an engineer working in the Environment Management Office of our Yonago Mill in Tottori Prefecture, Tetsuro Mukai (now working at Sanin Engineering Consultant Co., Ltd.), started the recovery of disposable chopsticks. At the time, Mr. Mukai was a volunteer instructor, providing hands-on environmental education to local children. He hit upon the idea of collecting used disposable chopsticks and turning them into a resource for making pulp at our mill, and started to do just that with the children. The idea spread across the country in a flash, and was picked up as one means of teaching environmental education at schools.

The Oji Paper Group believes that repaying society in some form or other is more important than merely recovering a resource. Accordingly, in fiscal 2005 we

started a system for donating funds—in proportion to the volume of recovered disposable chopsticks—to an organization that will use the money effectively. The organization we selected to receive these donations is the NPO Japan Council on the UN Decade of Education for Sustainable Development (ESD-J),\*1

We donate ¥1,000 for every ton of disposable chopsticks. In fiscal 2004, the recovery of chopsticks came to about 491 tons. In June 2005, we donated ¥500,000 for the first year's delivery. A simple practice like chopstick recovery now provides a triple benefit: resource conservation, funding for an environmental NPO, and effective environmental education of children.





Disposable chopstick recycling

#### Social contributions at overseas facilities

#### Japanese language speech contest in China

On page 13 of the Oji Paper Group Environmental Report 2004, Masatoshi Endo, who is posted to Guangxi Oji Plantation Forest Co., Ltd. (CPFL) in China, expressed his conviction that "human relationships are key to successfully deepening our local roots and undertaking productive social contribution activities." Mr. Endo had borrowed a lounge near a hotel pool in Nanning and started a once-monthly Japanese Language Salon. Now, the salon has grown into a place where university professors, students, ordinary local residents, and Japanese people working locally in different industries gather to socialize causally. Before long, the salon was acting as a liaison and forum for exchange of information between the small Japanese community in Nanning and the local population.

In May 2004, Mr. Endo held the first Oji Cup Japanese language speech contest. An audience of 150 people gathered at the contest, which came together with the help of local universities, government, and Japanese companies. We believe that this contest contributed to Japan-China relations because of the attitude taken by Mr. Endo of valuing relationships with each individual while building solid roots as a member of the local community.



#### Road in Australia named after an Oji Paper employee

The Oji Paper Group's tree plantation company, APFL, is located in Albany, Australia. The president of APFL, Gemmei Shimamura (now Deputy General Manager of the Raw Materials & Purchasing Division at Oii Paper headquarters), underwent constant hardship to get the business rolling at APFL. In the end, however, Mr. Shimamura not only contributed significantly to the economy of Albany through the company's business, but also served as a bridge in the signing of a sister city agreement between Albany and Nichinan City in Japan, where Oji Paper has a mill that uses wood chips from Albany. He also worked with devotion to promoting foreign exchange student programs. His sincerity earned him the deep respect of the local people. At a farewell party for Mr. Shimamura upon his retirement from APFL, the Chairperson of the Albany Port Authority announced the decision to name the main road through the Port of Albany "Shimamura Road." At that instant, Shimamura knew that his efforts at APFL had made a real difference to the local community





Above: Shimamura Road, named after an employee of the Oii Paper Group's tree plantation company, APFL eft: Road sign for Shimamura Road.

#### \*1 ESD project

Education for Sustainable Development (ESD), an initiative originally proposed by Japanese NGOs and accepted by the UN, is a campaign to promote education to address social issues such as the environment, development, and human rights. The campaign fanned out globally starting in 2005. Visit ESD-J online at: http://www.esd-j.org/en/

### Record of Accidents and Awards

#### Record of accidents

#### The Oji Nepia fire

A fire broke out in the Oji Nepia Tokyo Mill at about 3pm on March 27, 2005. The fire spread to base paper rolls stacked in a storage area, destroying 40 rolls. About 3,000 m<sup>2</sup> of the 4,700 m<sup>2</sup> steel frame, two story mill burnt. The fire was put out by our in-house fire brigade and the local fire department two hours after it started.

Company staff, police, and fire fighters conducted an investigation, but were unable to identify the cause. Oji Nepia presumes that a spark from the rail of the hoist (an electric crane-like conveyor that slides on a rail attached to the ceiling) used to move rolls of base paper triggered the fire in paper dust (a substance like lint) inside the room, and that the fire then spread from there.

In response, Oji Nepia converted all the hoists used near processes that produce paper dust at all its mills to hoists that do not produce sparks in order to prevent this type of fire from reoccurring. Thankfully, the fire did not spread to the neighborhood and no one was injured. Nevertheless, we offer our sincere apologies to local residents, our clients, and the many other people for whom this event caused a good deal of trouble. We have taken thorough measures to ensure that this type of fire never happens again.

After the fire, some equipment from the Oji Nepia Tokyo Mill was moved to other company mills. In the end, we decided not to rebuild, and closed the plant.

#### **Awards**

## Environmental and Sustainability Report 2004 wins third place award

The 2004 Japanese version of this report, the *Oji Paper Group Environmental and Sustainability Report*, won third place at the 8th Green Reporting Awards, cosponsored by Toyo Keizai Inc. and the Green Reporting Forum.

The Green Reporting Awards represent one of two commendations in Japan that select excellent company environmental reports based on the quality and quantity of information. Last year's report was selected as one of nine third-place finishers out of a total of 330 entrants. The report

received high marks for the way in which it clearly explained the paper industry's process from the procurement of raw materials to recycling in easily understood terms. This was the first time in the eight-year history of the Awards that a company from an industry with a large environmental impact was given the award.



2004 report that received a third place award at the 8th Green Reporting Awards.

#### Oji Paper wins gold award in 7th PBEC Environmental Award

Founded in 1967, the Pacific Basin Economic Council (PBEC) is an association of about 1,100 leading businesses in 20 countries around the Pacific Rim. PBEC's objectives go beyond simply expanding business opportunities through interaction of members to driving economic growth and making proposals to APEC, WTO, and national governments. Presented at an annual international assembly since 1999, the PBEC Environmental Award recognizes member companies for exceptional success in balancing business activities with environmental preservation. At the 4th awards in 2002, Oji Paper won the silver award, followed this year by the gold award.

Table1

Table I					
Other major awards (fiscal 2004)					
PRTR award: Honorable mention	Oji Paper Co., Ltd., selected by Center for Environmental Information Science as a company that runs an excellent PRTR system, a chemical management system (January 2005).				
Exceptional modal shift company	Oji Logistics Co., Ltd., selected by the Japan Federation of Freight Industries as one of 13 exceptional modal shift companies (October 2004).				
Tomioka Mill: 3R Model Business	The Tomioka Mill of Oji Paper Co., Ltd., was the first company recognized as a 3R Model Business, as part of Tokushima Prefecture's recycling recognition system (January 2005).				

## Third-party Opinion of This Report



Hisato Okamoto
Director, Frontier of Socio-Science Studies
Kyushu International University

Graduate of the Faculty of Foreign Studies, University of Kitakyushu. Took up present position after working at Nippon Steel Corporation Yawata Works; Nippon Steel Yawata Works' technology department in Rome; Mitsui High-tech, Inc. (on loan); as head of Nippon Steel's Beijing Representative Office; as head of Nippon Steel's µBGA Manufacturing Department; and at Kyushu Techno Research, Inc. He is also currently an environmental counselor to Japan's Ministry of the Environment.

Compared to last year's *Environmental and Sustainability Report*, this year's report is more sophisticated in terms of organization and design, and easier to understand. The process of group-wide dissemination of the Oji Paper Group Conduct Regulations and the philosophy of balance between environment and economy—inherited by current management from the company founder—are explained clearly in a lively, well-organized style using appropriate expressions.

As a CSR report, the content is accessible due to the emphasis on environmental issues and explanation of the material flow of the entire paper industry (pages 25-26). The general public may not realize that paper companies put such effort into growing their own trees in places so far removed from their mills. The company's efforts to achieve resource independence and to disclose information, including negative data, on environmental management heighten its trustworthiness.

A point that concerns me is the number of indicators within the positive data that have plateaued over the past few years. This might be the result of the technical prowess of a leading company in the paper industry—that is, of the company achieving its goals early. On the other hand, it could be an indication that the existing technology and theories have reached their limit. Assuming the latter, there is a real need for technical innovation and new theory.

I think all humanity must address the question of what we should do about paper in the future. Below, I offer my suggestions on opportunities for paper companies, the public, government and all other stakeholders to work together for future progress.

First of all, I would like to suggest expanding the objectives of tree planting beyond resource-recycling only—adding methods to introduce natural ecosystems back into the forest, or greening deserts and other barren land, or practicing wind power generation on forest lands in conjunction with afforestation.

In the future, the idea of local production for local consumption, which would synchronize resource production, paper production and consumption, may be vital for the paper industry in addressing the dramatic rise in demand on a global scale. This move would not only reduce energy consumption for distribution, but also help avoid the eutrophication caused by the influx of phosphorous, nitrogen, and other nutrients from developing countries to industrialized nations.

In terms of consumer and community relations, realizing technological innovations that drastically reduce energy consumption per unit of output during the manufacture of pulp, methods of using paper without waste, and a culture that treats paper as a valuable commodity will all be important, while respecting the traditional function of paper.

A true recycling-based society is one that synchronizes the earth's resource-recycling systems with human resource-recycling systems. A view of space on a global scale and a view of time that stretches 100 or 150 years into the future are essential for an industry that is based on the use of living resources. I think all stakeholders hope that next year's report will indicate how the company will continue to apply the founder's philosophy, formulated 130 years ago, for the benefit of people and the Earth 150 years in the future.

#### Response to third-party opinion

In my view, the suggestion of synchronizing the earth's resource-recycling systems with manmade resource-recycling systems corresponds precisely with our forest recycling and paper recycling initiatives. We will continue with our unremitting efforts to develop innovative technologies for resource production, paper production, and consumer benefit. In all this, our goal is to build a truly recycling-based society while meeting the world's increasing demand for paper. We will work with fresh resolve every day to ensure that Oji Paper will remain a leading company 150 years from now.

Yoshihiro Kanamaru Executive Responsible for Environmental Affairs Executive Director Oji Paper Co., Ltd.



\* Optional indicators

## Comparison of GRI Sustainability Reporting Guidelines and This Report

The Global Reporting Initiative's *Sustainability Reporting Guidelines* provide a framework for corporate reporting on sustainability initiatives for the environment, society, and economy. In preparing this report, we used the 2002 version of the guidelines. The table below indicates the page(s) on which each item is discussed.

tem	Indicator	Page(s)
Vision and Strategy		
1.1	Statement of the organisation's vision and strategy regarding its contribution to sustainable development.	3-6, 7
1.2	Statement from the CEO (or equivalent senior manager) describing key elements of the report.	3-6
rofile		
Organisational Pro	ofile	
2.1	Name of reporting organisation.	1
2.2	Major products and/or services, including brands if appropriate.	1
2.4	Description of major divisions, operating companies, subsidiaries, and joint ventures.	1
2.5	Countries in which the organisation's operations are located.	1
2.6	Nature of ownership; legal form.	1
2.7	Nature of markets served.	11, 13-16
2.8	Scale of the reporting organisation.	1
2.9	List of stakeholders, key attributes of each, and relationship to the reporting organisation.	7
Report Scope	Late of databased of the state	•
2.10	Contact person(s) for the report, including e-mail and web addresses.	2
2.10		2
	Reporting period (e.g., fiscal/calendar year) for information provided.	2
2.12	Date of most recent previous report (if any).	
2.13	Boundaries of report (countries/regions, products/services, divisions/facilities/joint ventures/subsidiaries) and any specific limitations on the scope.	1 22 24
2.14	Significant changes in size, structure, ownership, or products/services that have occurred since the previous report.	1, 23-24
Report Profile		
2.17	Decisions not to apply GRI principles or protocols in the preparation of the report.	2
2.18	Criteria/definitions used in any accounting for economic, environmental, and social costs and benefits.	47
2.20	Policies and internal practices to enhance and provide assurance about the accuracy, completeness, and reliability that can be placed on the sustainability report.	2, 8
2.22	Means by which report users can obtain additional information and reports about economic, environmental, and social aspects of the organisation's activities, including facility-specific information (if available).	2
overnance Structur	e and Management Systems	
Structure and Gov	vernance	
3.1	Governance structure of the organisation, including major committees under the board of directors that are responsible for setting strategy and for oversight of the organisation.	21
3.3	Process for determining the expertise board members need to guide the strategic direction of the organisation, including issues related to environmental and social risks and opportunities.	21
3.4	Board-level processes for overseeing the organisation's identification and management of economic, environmental, and social risks and opportunities.	21, 23
3.6	Organisational structure and key individuals responsible for oversight, implementation, and audit of economic, environmental, social, and related policies.	21-23
3.7	Mission and values statements, internally developed codes of conduct or principles, and polices relevant to economic, environmental, and social performance and the status of implementation.	3-6, 7-8, 10, 18, 27-28, 49
Stakeholder Enga	gement	
3.9	Basis for identification and selection of major stakeholders.	7
3.10	Approaches to stakeholder consultation reported in terms of frequency of consultations by type and by stakeholder group.	22, 52, Question
3.11	Type of information generated by stakeholder consultations.	52, Questionnaire
3.12	Use of information resulting from stakeholder engagements.	Questionnaire
	ies and Management Systems	
3.13	Explanation of whether and how the precautionary approach or principle is addressed by the organisation.	37
3.14	Externally developed, voluntary economic, environmental, and social charters, sets of principles, or other initiatives to which the organisation subscribes or which it endorses.	8
3.15	Principal memberships in industry and business associations, and/or national/international advocacy organisations.	8, 18, 53
3.16	Policies and/or systems for managing upstream and downstream impacts, including.	12, 15-17, 43
3.17	Reporting organisation's approach to managing indirect economic, environmental, and social impacts resulting from its activities.	32, 38
3.19	Programmes and procedures pertaining to economic, environmental, and social performance.	21-22, 23-24
3.20	Status of certification pertaining to economic, environmental, and social management systems.	24
RI Content Index		
4.1	A table identifying location of each element of the GRI Report Content, by section and indicator.	57-58
erformance Indicate		
Integrated Indicat	ors	
mogratoa maroat	Systemic indicators relate the activity of an organisation to the larger economic, environmental, and social systems of which it is a part.	13, 28, 33, 51
mogratoa maioac	Systemic indicators relate the activity of an organisation to the larger economic, environmental, and social systems of which it is a part.	-, -, -, -
mogratoa maioat	Cross-cutting indicators directly relate two or more dimensions of economic, environmental, and social performance as a ratio, e.g., Eco-efficiency measures (e.g., the amount of emissions per unit of output or per monetary unit of turnover)	36-37, Per unit of outpu

n		Indicator	Page(s)
conomic Perforn	nance Indi	cators	
Customers	EC1	Net sales.	1
ublic Sector	EC10	Donations to community, civil society, and other groups broken down in terms of cash and in-kind donations per type of group.	53
nvironmental Pe	rformance	Indicators	
/laterials	EN1	Total materials use other than water, by type.	25-26
	EN2	Percentage of materials used that are wastes (processed or unprocessed) from sources external to the reporting organisation.	25-26, 33
nergy	EN3	Direct energy use segmented by primary source.	25-26, 27-28,
	EN4	Indirect energy use.	25-26, 38
Vater	EN5	Total water use.	40, 48
Biodiversity	EN7	Description of the major impacts on biodiversity associated with activities and/or products and services in terrestrial, freshwater, and marine environments.	15
missions,	EN8	Greenhouse gas emissions (CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O, HFCs, PFCs, SF <sub>6</sub> ).	26, 28, 37-38,
ffluents, nd Waste	EN10	NOx, SOx, and other significant air emissions by type.	26, 39, 48
	EN11	Total amount of waste by type and destination.	25-26, 42, 48
	EN12	Significant discharges to water by type.	40, 48
roducts	EN14	Significant environmental impacts of principal products and services.	26
nd Services	EN15	Percentage of the weight of products sold that is reclaimable at the end of the products' useful life and percentage that is actually reclaimed.	25-26, 33
nergy	EN17*	Initiatives to use renewable energy sources and to increase energy efficiency.	36-37
	EN19*	Other indirect (upstream/downstream) energy use and implications, such as organisational travel, product lifecycle management, and use of energy-intensive materials.	34, 38
Vater	EN22*	Total recycling and reuse of water.	40
Biodiversity	EN23*	Total amount of land owned, leased, or managed for production activities or extractive use.	26
	EN26*	Changes to natural habitats resulting from activities and operations and percentage of habitat protected or restored.	29-30
	EN27*	Objectives, programmes, and targets for protecting and restoring native ecosystems and species in degraded areas.	31-32
missions, Effluents, nd Waste	EN30*	Other relevant indirect greenhouse gas emissions (CO2, CH4, N2O, HFCs, PFCs, SF6). Refers to emissions that are a consequence of the activities of the reporting entity, but occur from sources owned or controlled by another entity. Report in tonnes of gas and tonnes of CO2 equivalent.	26, 38, 48
uppliers	EN33*	Performance of suppliers relative to environmental components of programmes and procedures described in response to Governance Structure and Management Systems section (Section 3.16).	43-44
ransport	EN34*	Significant environmental impacts of transportation used for logistical purposes.	38
lverall	EN35*	Total environmental expenditures by type.	47
ocial Performan	ce Indicato	rs	
Labour Practices	and Dece	nt Work)	
mployment			
pioymone	LA1	Breakdown of workforce, where possible, by region/country, status (employee/non-employee), employment type (full time/part time), and by employment contract (indefinite or permanent/fixed term or temporary). Also identify workforce retained in conjunction with other employers (temporary agency workers or workers in co-employment relationships), segmented by region/country.	1
lealth and Safety	LA1	employment contract (indefinite or permanent/fixed term or temporary). Also identify workforce retained in conjunction with other employers	51
lealth and Safety		employment contract (indefinite or permanent/fixed term or temporary). Also identify workforce retained in conjunction with other employers (temporary agency workers or workers in co-employment relationships), segmented by region/country.	· 
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lealth and Safety	LA7 LA9	employment contract (indefinite or permanent/fixed term or temporary). Also identify workforce retained in conjunction with other employers (temporary agency workers or workers in co-employment relationships), segmented by region/country.  Standard injury, lost day, and absentee rates and number of work-related fatalities (including subcontracted workers).  Average hours of training per year per employee by category of employee.	51 49
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#### FAX to:

#### Environmental Management Department Oji Paper Co., Ltd. +81-3-3563-1139

er Co., Ltd. +81-3-3563-113

### Questionnaire

Thank you for reading the *Oji Paper Group Environmental and Sustainability Report 2005*. We welcome and value your comments and opinions. Please let us know what you think of the report by filling out the questionnaire below. We will use the feedback we receive to improve our business practices as well as next year's report.

		ental and Sustainabilit ion at Oji Paper website	<i>y Report</i> did you read <sup>r</sup>	?
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Too muc	h Com	nplete A	Adequate	Not enough
		eresting? (multiple ans		
☐ A Recy Recycling Securing ☐ Corpor Environm Planting V Consump ☐ Air, Wa of Raw M Accountin Working T	rcling-based Business In-based Business Model Raw Materials from Surate Governance	Model for a Sustainable el  Transforming the P stainable Forests Tha mpliance Environme  Dji Paper Environmental Recycling: Raising the roblem of Global Warmin mental Impact Minimizesearch Institute: Suppo al Mills Employee Re	Way of Life for All The apermaking Industry—( It the World Would Alwantal Management and A Charter and Environme Recovered Paper Utilizang Distribution Police in Waste Sent to Land rting Tree Plantations are plations Community of Accidents and Awards as and This Report	osophy and Corporate Code of Conduct the Oji Paper Group's Unique Growing Trees, Nurturing the Woods, and ys Have Enough Paper to Use Auditing Material Flow from an ental Action Plan 21 Forest Recycling: tion Rate Reducing Energy y: Global Environmental Preservation fills Product Safety: Green Procurement round the World Environmental Relations Corporate Citizenship:  Third-party Opinion of This Report
Exceller		Adequate	Lacks effort	
Q5. Please pro	vide any other comm	nents or suggestions fo	or improvement.	
O6. Which of t	he following best des	scribes vou?		
Custon CSR issu NGP/NPC his/her fa	mer of the Group's pes at a company or company or company or company or company or company member of the pamily member of the y much for your feed	roducts Business porganization Enviror press Student Gener	nmental or CSR special sovernment employee ciate it if you would file	Person in charge of environmental or alist  Educator or academic expert  Employee of a group company or
information w	ill be strictly managed	d and used only to rep		ion related to Q5.
Name			Company / Organization	
Contact				



#### Results from the 2004 Questionnaire

Below, we report the tabulated results of the questionnaires returned to us by readers of the *Oji Paper Group Environmental and Sustainability Report 2004*.

#### About the overall tabulation (Excellent: 1 ←→ Lacks effort: 5)

In terms of how accessible the report was overall, respondents rated it with a 2 on average, which is a relatively high appraisal. While we were concerned that readers might feel that the 2004 report, which was 79 pages long, contained too much information, on average they felt it was "complete," rather than having "too much" or "not enough." Respondents also rated the Group's environmental initiatives positively, with a 1.73 average.

#### Sections people read with interest

Ranked in order, from the most interesting.

① Forest recycling	4 Environment-friendly R&D
② Paper recycling	Social contribution activities
③ Energy countermeasures and global warming countermeasures	6 Oji Paper as a recycling-based company

Reflecting contemporary issues, it seems readers were most interested in how we are addressing the issue of global warming, especially our forest recycling and paper recycling initiatives.

Category	Opinions and suggestions received
Initiatives	• The founder's spirit lives on. • How about introducing the Eco Stage assessment system into the supply chain? • I was able to see that you are putting efforts into environmental activities and not just pursuing profits. • I felt your commitment to business ethics. • I hope you will uphold the Global Compact. • You have a high standard for dealing with hazardous substances. • Your efforts to help create a recycling-based society are outstanding. • I hope you will provide a follow up report on your new initiative of traceability of wood raw materials in the next report.
CSR	• You need to disclose numerical indicators concerning management sustainability. • How about providing information on work environments? • I would like to see further improvements in your crisis management. • There was not enough information on the theme of employee satisfaction. • You ought to mention human rights and labor issues and hold dialogues with NGOs. • With little objective social data, the report was unsatisfactory as a CSR report.
Data	• I would like to see a year-on-year comparison of material flow. • It would be even better if you could make comparisons with other companies in the same industry and with other industries. • I would like to see specific solutions for addressing problems such as wastewater. • You would do well to make progress against numerical targets easy to understand.
Social contributions	• I wish you would undertake volunteer clean-ups over a wider region. • Can you come up with way of collecting disposable chopsticks from distant locations?
Overall impression	• It was difficult to understand. • The report was complete. • I was able to understand it well. • It was a highly honest report. • The vocabulary was technical and difficult to understand. • I would have liked to see you introduce the activities of group companies. • The picture on the cover was nice. • You should include pages that children can understand. • I found it very informative. • I would like to see more comments on your compliance efforts.
Other	• It is a mistake to say recycled paper is "made of 100% recovered paper" since it contains coatings. • The Q&A section was good. • I agree with your view of tree planting. • Your efforts on global warming, carbon fixation, and biomass are excellent. How about making a supplementary reader for schools modeled after Oji's management policy? • I really understood the sections on preservation activities, Q&A, and forests in Japan.

#### About the opinions and suggestions we received

We received a variety of opinions, suggestions, and praise from readers in the free comments and suggestions box. The Environmental Management Department has already sent direct replies and thank-you notes via postcard, but we would like to express our appreciation once again here, while reporting on the results of the questionnaire.

We reflected some opinions in this year's report and had to pass over others due to insufficient information to report. In the future, we will do our best to improve our reporting by applying as much reader feedback as we can. As we had many comments that the report was difficult to understand, we made a real effort this time to communicate clearly about the unique characteristics of the pulp and paper industry, and to make the report as accessible as possible to all of our stakeholders. We are looking forward to receiving your opinions and suggestions this year.