



Green. Forever.

Oji Paper Group  
**Environmental and  
Sustainability Report**  
**2007**



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## Editorial policy

In July 2007, as this report was being finalized it was discovered that eight mills of the Oji Paper Group had exceeded smoke emissions standards (see next page for details on this and other compliance issues). We understand that this event caused great inconvenience to residents who live near the mills and society at large. The Oji Paper Group, taking this incident very seriously, recognized the need to apologize and provide an explanation of the circumstances in this report. Accordingly, when these incidents came to light, we revised the report even though it was nearly on its way to the printer. On the next page, we disclose the results of our inquest into the situation as of the end of July, as well as the steps we will take to prevent any recurrence. The president of the company also devotes most of his message to an apology and his thoughts on how we plan to restore full confidence in the Oji Paper Group.

In addition, the main body of the report describes our corporate social responsibilities in relation to the production of paper—the core business of the Oji Paper Group.

In light of the valuable feedback we received during our second stakeholder dialogue, held this year, we were convinced again that the mission of the Oji Paper Group is to provide a stable supply of paper using a recycling-based business model that gives careful consideration to both the natural environment and human society. In the highlights section, we provide site reports from tree plantations outside Japan and sites that purchase wood chips, report on our progress toward achieving reduction targets for the emission of carbon dioxide, and describe our forest recycling and paper recycling programs and our initiatives to prevent global warming.

The Oji Paper Group is committed to doing its best to recover people's complete trust through holding ongoing dialogues with various stakeholders and by producing paper with even greater consideration for the global environment, as we strive to ensure that paper will always be available to a world that needs it.

### Period of coverage

April 1, 2006 – March 31, 2007

Except for numerical data, some sections may contain information from April 2007 and later.

### Reference guidelines

*Environmental Reporting Guidelines* (fiscal 2003 version), Ministry of the Environment, Japan. *Sustainability Reporting Guidelines 2006*, Global Reporting Initiative (GRI)

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This report was prepared by a working group of 25 people from 20 different departments of the Oji Paper Group.

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# Details of the Smoke Incident at Eight Mills of Oji Paper and Oji Paperboard

## Introduction

In July 2007, emission of smoke in excess of emissions standards and the improper handling of data were discovered to have occurred at eight mills belonging to two companies of the Oji Paper Group: at Oji Paper, the Kushiro Mill, Tomakomai Mill, Fuji Mill, Kasugai Mill, and Yonago Mill; and at Oji Paperboard, the Nikko Mill, Edogawa Mill, and Saga Mill. These acts were in violation of Japan's Air Pollution Control Law, Electricity Business Act, and other laws. These incidents caused great inconvenience in every quarter, including the local communities, relevant local authorities, and government ministries and agencies, and damaged many people's trust in the Oji Paper Group (Japanese-language news releases dated July 13 and 18, available on our website, provide details on the situation at each mill).

Below is a brief report on the causes of the incident that were identified in an internal investigation regarding this series of problems, as well as the future measures we will take.

## Causes

The primary factors behind the violations that occurred at the eight mills of the two companies are: (1) a lack of awareness at work sites regarding legal regulation values (matters that should have been tracked on an hourly basis were tracked on a daily basis, etc.); (2) poor checking of environmental management data; and (3) poor maintenance and management of facilities, etc. These shortcomings created an environment that led to the deviation from emission standards, despite our corporate philosophy emphasizing contribution to the environment and culture. We believe that the inadequacy of our system of controls when it came to preventing such neglect led to the compliance violations. We take this situation very seriously and will continue to investigate the causes, including conducting a thorough reexamination of our management systems.

## Measures to prevent a recurrence

### (1) Organizational and management measures

- We will thoroughly implement policies prioritizing environmental compliance and will continually implement thorough education to ensure that work is carried out in conformity with those policies.
- We will post appropriate personnel within environmental management departments and rebuild the entire management system.
- We will rigorously reexamine our approach thus far to environmental auditing and will thoroughly implement legal and regulatory compliance audits.

### (2) Technological and equipment measures

- We will implement thorough maintenance and management of anti-smoke and other equipment.

### (3) Recovering the trust of local communities

- Going forward, we will continue to release information on the implementation of measures to prevent a recurrence as well as the status of our environmental management to local authorities, government ministries and agencies, and to community residents. We will make every effort to recover full trust while following the guidance of relevant institutions.

## Future initiatives

We deeply regret this recent incident and are determined to continue making every effort to investigate the causes and to work on measures to prevent a recurrence. In the future, we will release information about environmental management, the improvement of environmental equipment, and other matters.

July 2007  
Oji Paper Co., Ltd.

## Message from the President

"At Oji Paper, we recognize that society expects us to meet the demand for paper with a stable supply while ensuring that all of our business activities are conducted with careful concern for the environment. Our commitment to this mission, despite our recent discovery that some of our mills were emitting smoke in excess of regulatory standards, only strengthens our resolve to work to prevent any recurrence of such violations and to recover the full trust of society as quickly as possible."

### "I apologize for the recent misconduct at Oji Paper."

Working to realize our corporate philosophy—"Contribution to the environment and culture"—the Oji Paper Group built an environmental management system based on observance of the Oji Paper Group Environmental Charter and has continued to strengthen and implement that system over the years. Unfortunately, however, in July 2007 we discovered compliance issues with smoke-emitting facilities at eight mills belonging to Oji Paper and Oji Paperboard. We immediately made public the news that seven of the mills had emitted nitrogen and sulfur oxides in excess of emissions standards under Japan's Air Pollution Control Law or the levels agreed upon with local authorities. One of these seven mills had even falsified data submitted to authorities. The eighth mill had altered data, although it had not, in fact, exceeded emissions standards or agreed-upon emissions levels.

I extend my deepest apologies for the great trouble and inconvenience these incidents have caused all those concerned—to community residents, the relevant authorities, the users of the Oji Paper Group's products, and society as a whole. I am filled with a sense of regret over our complacency with the environmental management system we had. Accordingly, I am now leading the effort

to rebuild our environmental management system with the guidance of the relevant authorities, so that we may regain the complete trust of society, which had taken so many years to earn.

### "I will ensure that our environmental systems are sound and that every employee is fully committed to compliance."

The Oji Paper Group's environmental management system was operated by the Environmental Management Department at Oji Paper and included regularly held group-wide environmental committee meetings and environmental audits. These activities revealed violations of Japan's Water Pollution Control Law in the environmental management of Oji Cornstarch Co., Ltd., in July 2005 and violations of the River Law at hydroelectric power plants owned by the Oji Paper Group in February 2007. With the aim of preventing a recurrence of these incidents, the Environmental Management Department had stepped up the sharing of information, including data on problem cases and countermeasures taken. We had also re-emphasized environmental audits at mills—members of the Environment Audit Committee had conducted audits at least once every two years at more than 200 sites, including our four main papermaking

companies. Additionally, we had greatly expanded the number of items on our auditing checklists in an attempt to make sure that audits could not fail to uncover any inappropriate management situation.

Immediately after the incident at Oji Cornstarch mentioned above, we conducted voluntary investigations of all mills operated by Oji Paper and our main group companies to check for other violations. Despite this, the excessive smoke emissions and related issues were not discovered, and even our environmental auditing did not uncover these violations. The effort to identify the root causes of these incidents, including the question of why they did not come to light earlier, continues as I write this. I am determined to identify every fault in our environmental management system and to implement measures to prevent any recurrence.

My basic view is that these incidents can be traced to insufficient employee awareness of the importance of environmental preservation and compliance. I and the rest of the management team take full responsibility for allowing this.

Going forward, I will stop at nothing to uncover the reason that an awareness of the importance of compliance had not penetrated our entire workforce, and I will make certain that all employees are thoroughly reeducated regarding environmental conservation and compliance.

In my view, a great part of the responsibility for inadequate implementation of environmental conservation and

compliance at any production site, the heart of the manufacturing industry, lies with the lead manager who oversees all on-site activities. I believe that we must build a more open culture, with the mill manager at the center, that ensures that even the smallest problems at the production site are brought to light. This openness will guarantee that management's wishes reach every corner of the production site, and will help to foster a culture of commitment to environmental conservation and compliance.

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**"I am determined to prevent any recurrence and to win back society's full trust in Oji Paper."**

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For over 130 years, Oji Paper has been a leader in the paper industry. Once more, I offer my apologies that Oji Paper was involved in this sort of misconduct at a time when respect for the paper industry as a recycling-based industry had been increasing, thanks in part to efforts to create large tree plantations outside Japan with the aim of achieving sustainable procurement of wood resources.

Going forward, it is essential for us to conduct our business in full awareness of the roles we must fulfill if Oji Paper is to earn society's full acceptance and continue to thrive. To that end, we must return to our origins: the philosophy espoused by the founder of Oji Paper, Eiichi Shibusawa, who frequently used

two words—*rongo* (Analects of Confucius) and *soroban* (abacus)—to emphasize the need to pair good ethics with profitable business practices.

We recognize that society expects us to meet the demand for paper with a stable supply while ensuring that all of our business activities are conducted with careful concern for the environment. Today I stand determined, more than ever, to listen closely to the opinions of all stakeholders and to take the lead in making sure that the way we do business is fully informed by society's expectations.

I will see to it that all employees recognize the social responsibilities we have

as a company and that the entire group makes a united effort, based on the firm awareness and personal values of each individual, to prevent any further misconduct, so that we may recover the full trust of society as soon as possible.

  
*K. Shinoda*

**Kazuhisa Shinoda**  
President and Chief Executive Officer  
Oji Paper Co., Ltd.

July 2007

# Business Profile of the Oji Paper Group

## Business overview

The Oji Paper Group is engaged in businesses in four main fields: pulp and paper products, converted paper products, wood and tree-planting, and other businesses.

### Pulp and paper products:

The Oji Paper Group's core business, this entails the production and marketing of all types of paper, from newsprint and other printing and communications papers to paperboard and tissue paper.

### Converted paper products:

This business encompasses the production and marketing of corrugated containerboard, paper containers, thermal paper, disposable diapers, and other specialty paper products.

### Wood and tree-planting:

This consists of the maintenance of our company-owned forests in Japan, operating tree plantations outside Japan, exporting, importing and processing wood, and greenery businesses such as landscaping and gardening.

### Other businesses:

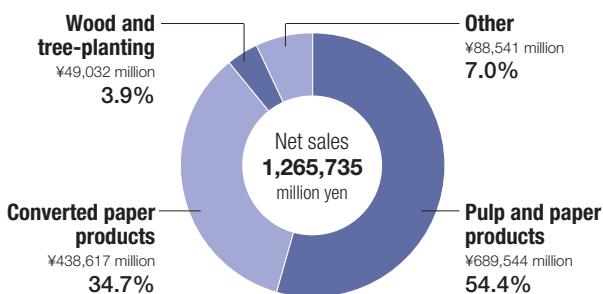
This field includes logistics, real estate, machinery, food-related businesses, as well as the management of hotels and concert halls.

## Company data

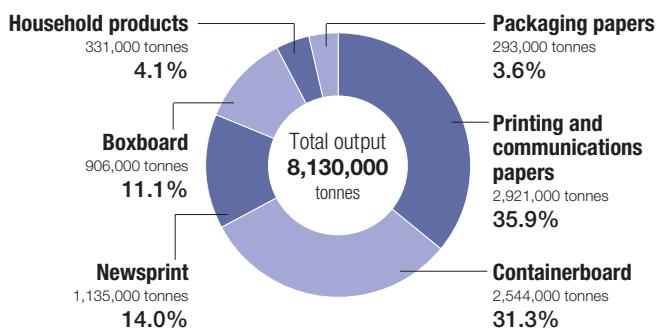
<b>Company Name:</b>	Oji Paper Co., Ltd.
<b>Headquarters:</b>	4-7-5 Ginza, Chuo-ku, Tokyo, Japan 104-0061
<b>Established:</b>	August 1, 1949
<b>Representative Director:</b>	Kazuhisa Shinoda, President and Chief Executive Officer
<b>Paid-in Capital:</b>	¥103,880 million

<b>Main Business:</b>	Manufacturing and marketing of pulp, paper and converted paper products
<b>Net Sales:</b> <small>(fiscal year ended March 31, 2007)</small>	Non-consolidated: ¥568,389 million Consolidated: ¥1,265,735 million
<b>Number of Employees:</b> <small>(as of March 31, 2007)</small>	Non-consolidated: 4,619 Consolidated: 19,560

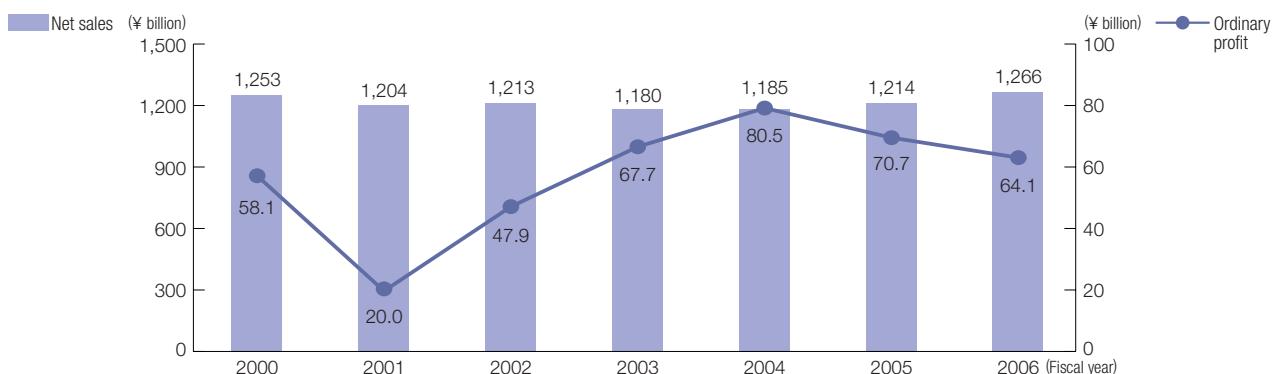
## Net sales by business (consolidated) (fiscal 2006)



## Production by product type (consolidated) (2006)



## Net sales and ordinary profit (consolidated)



## Scope of this report: Oji Paper Co., Ltd., and its main group companies (listed below)

- Paper Manufacturing:** •Oji Paperboard Co., Ltd. •Oji Nepia Co., Ltd. •Oji Specialty Paper Co., Ltd. •Oji Paper Co., Ltd.
- Paper Processing:**
- Oji Chiyoda Container Co., Ltd. •Oji Cornstarch Co., Ltd. •Yupo Corporation
  - Oji Kinocloth Co., Ltd. •Oji Packaging Co., Ltd. •Oji Tac Co., Ltd. •Oji Seitai Kaisha, Ltd.
  - Shinomura Chemical Industry Co., Ltd. •Shizuoka Oji Container Co., Ltd. •Kyodo Shiko Co., Ltd.
  - Chuetsu Co., Ltd. •Musashi Oji Container Co., Ltd. •Oji Forest & Products Co., Ltd.
  - TAKASAKI KASEI Co., Ltd. •NIHON SEIKAHOSO Co., Ltd. •Mori Shigyo Co., Ltd.
  - Hokkaido Mori Shigyo Co., Ltd. •Sendai Mori Shigyo Co., Ltd. •Hitachi Mori Shigyo Co., Ltd.
  - Gunma Mori Shigyo Co., Ltd. •Niigata Mori Shigyo Co., Ltd. •Hokuriku Mori Shigyo Co., Ltd.
  - Nagano Mori Shigyo Co., Ltd. •Tokai Mori Shigyo Co., Ltd. •Shizuoka Mori Shigyo Co., Ltd.
  - Shikoku Mori Shigyo Co., Ltd. •Kyushu Mori Shigyo Co., Ltd. •Mori Kamihanbai, Co., Ltd.
  - Torika Hoso Shizai 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.
- Distribution/Warehousing:**
- Oji-Pier Terminal Co., Ltd. •Oji Kaiun Co., Ltd. •Oji Logistics Co., Ltd. •Kikkou Tsuun Co., Ltd.
  - Oji Rikuun Co., Ltd. •Hirata Warehouse Co., Ltd.
- Other:**
- OJISAITOU SHIGYO PAPER RECYCLE CORPORATION

### Definitions of terms in this report

Oji Paper Co., Ltd.: Refers to the non-consolidated company.

Main subsidiaries: Oji Paperboard Co., Ltd., Oji Specialty Paper Co., Ltd., Oji Nepia Co., Ltd., and Oji Chiyoda Container Co., Ltd.

Oji Paper Group: Refers to Oji Paper Co., Ltd., and the main group companies listed above.

Group companies: Refers to all the companies of the Oji Paper Group, excluding Oji Paper Co., Ltd.

## Major mills

### Oji Paper Mills

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

### Oji Paperboard Mills

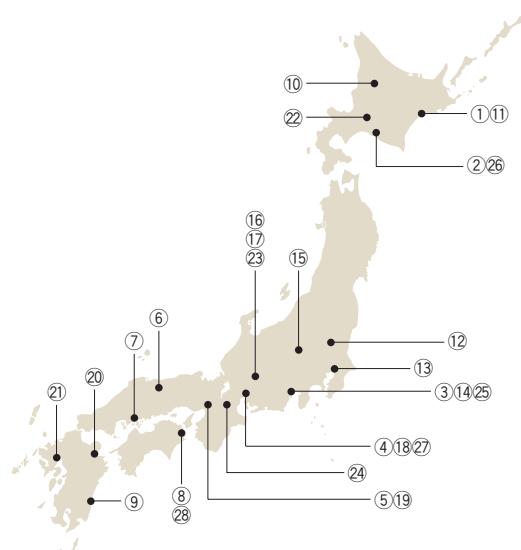
10. Nayoro Mill
11. Kushiro Mill
12. Nikko Mill
13. Edogawa Mill
14. Fuji Mill
15. Matsumoto Mill
16. Ena Mill
17. Nakatsugawa Mill
18. Sobue Mill
19. Osaka Mill
20. Oita Mil
21. Saga Mill

### Oji Specialty Paper Mills

22. Ebetsu Mill
23. Nakatsu Mill
24. Shiga Mill,
25. Tokai Mill (Iwabuchi Facility, Fuji Facility, Shizuoka Facility, Daiichi Facility, Fujinomiya Facility, Shibakawa Facility)

### Oji Nepia Mills

26. Tomakomai Mill
27. Nagoya Mill
28. Tokushima Mill



## Profiles of major group companies

### Oji Paperboard Co., Ltd.

#### Business:

Manufacture and marketing of containerboard and paperboard

### Oji Nepia Co., Ltd.

#### Business:

Manufacture, processing, and marketing of tissue, pulp and paper products, and disposable paper diapers

### Oji Specialty Paper Co., Ltd.

#### Business:

Manufacture, processing, and marketing of pulps, papers, and their co-products as well as processed synthetic resins, packaging materials, chemical agents, and bonded-fiber fabric

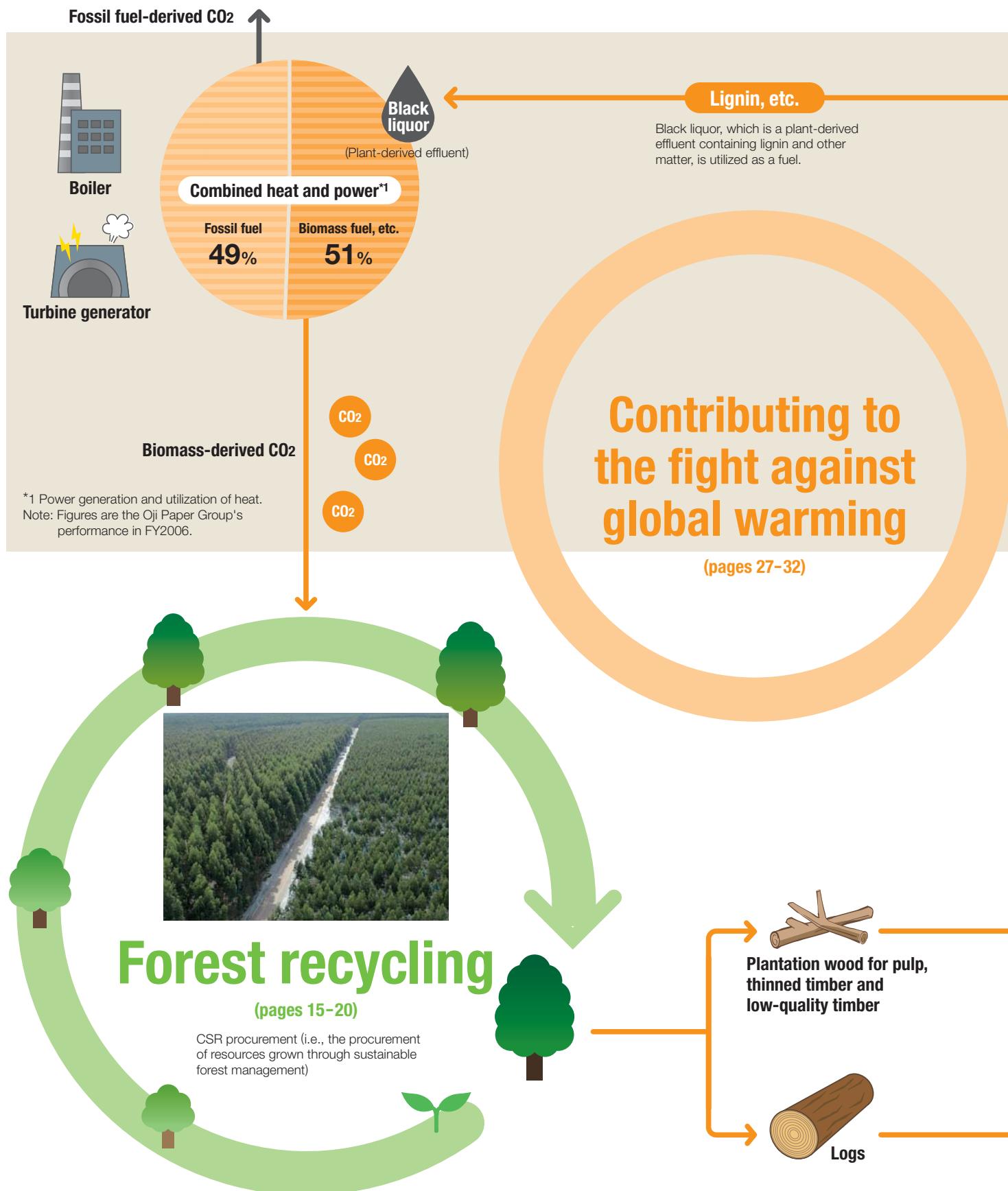
### Oji Chiyoda Container Co., Ltd., Mori Shigyo Group

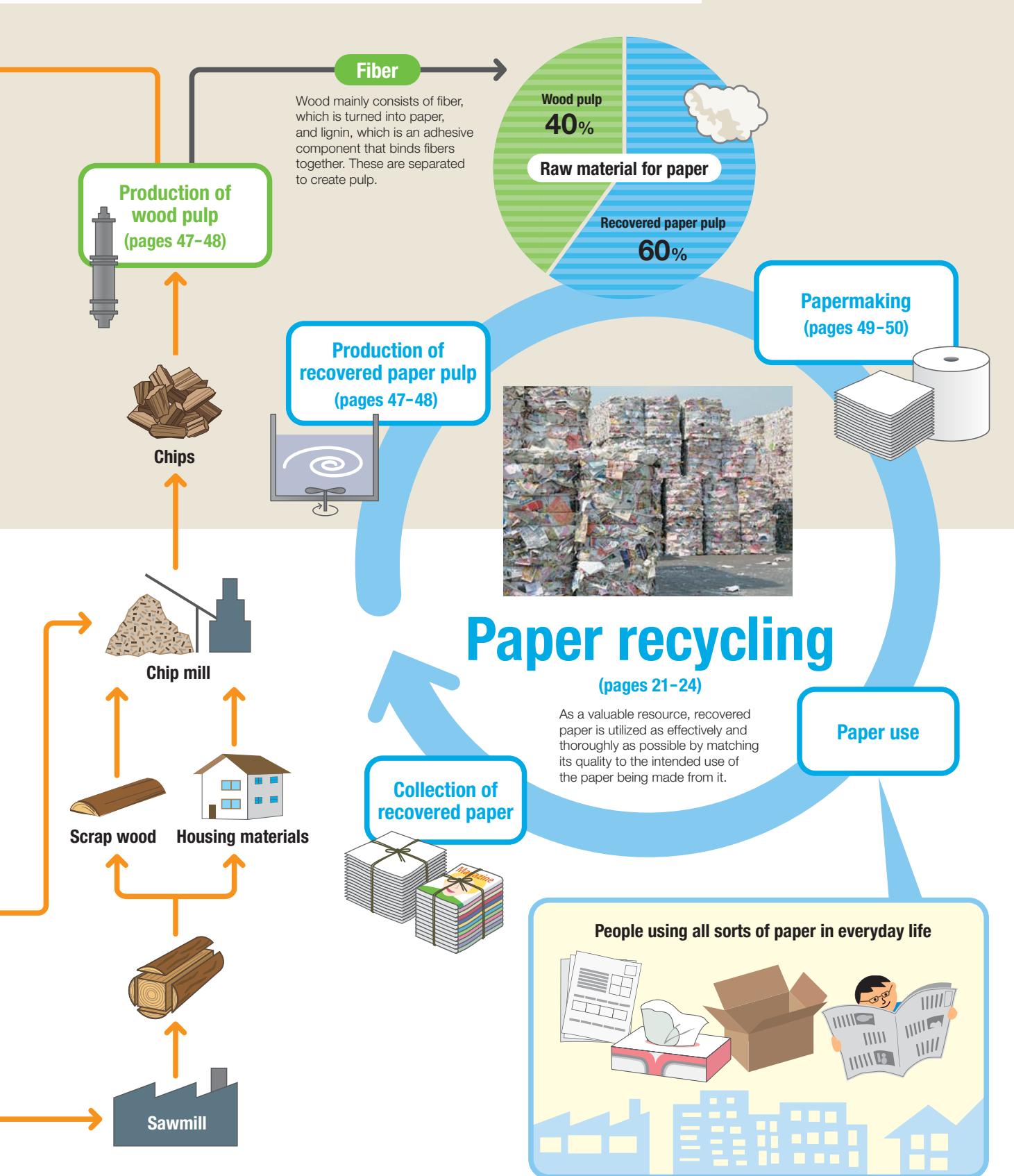
#### Business:

Manufacture, processing, and marketing of containerboard sheets and cases, paperboard containers, and packaging paper, as well as the development and marketing of packaging machinery

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

The Oji Paper Group is committed both to meeting the social demand for paper and working to protect the global environment. With Oji Paper's innovative business model, these two goals are not mutually exclusive. Oji Paper is in the business of forest recycling and paper recycling, and determined to contribute to the fight against global warming.





## Stakeholder Dialogue

# How Should We Procure Wood Raw Material for Papermaking?

Since 2006, the Oji Paper Group has been holding stakeholder dialogues each year to solicit the views of outside experts.

The topic for last year's dialogue was: "What should the Oji Paper Group do to help create a sustainable society?" The participants provided valuable feedback on issues as wide ranging as the price of paper and social costs, the need for excellent communication with stakeholders, and ways to make the most of company-owned forests in Japan. On March 13, 2007, we held another stakeholder dialogue with five outside experts on the procurement of wood raw material.



### How should the Oji Paper Group respond to the ever-increasing demand for paper in light of legitimate concerns over the potential exhaustion of forest resources?

**Ohsawa (Oji Paper):** Oji Paper is working very hard to increase the area of its overseas tree plantations to 300,000 ha by 2010, after which time we estimate being able to self-supply 40% of our imported wood chips. There is no doubt, however, that the productivity of forests needs to be increased worldwide in order to meet the world's growing demand for paper. The paper industry is also now being impacted by poor timber growth in Australia due to drought and the loss of many forests around the world in forest fires. At Oji Paper, we are deeply concerned about how we can ensure that the ever-increasing demand for paper is met in coming years.

**Kumazaki:** Traditionally, paper companies logged natural stands. Today's mainstream practice, however, is sourcing raw material efficiently from eucalyptus and other tree plantations while leaving as many natural stands as possible untouched. I think the key to protecting the environment while also meeting demand will be the rate of productivity growth that can be achieved on timber-producing land. One idea, of course, is to plant trees that grow rapidly, using a relatively short rotation, on abandoned farmland.

**Kanda (Oji Paper):** In locating our plantations, we have selected grasslands not used for pastureland in Australia, and slash-and-burn sites and other denuded land in Vietnam and Laos. There is less and less suitable land for planting trees, which limits the number of trees that can be planted. There is a widespread tendency today to consider only plantation timber and wood from certified forests<sup>\*1</sup> as acceptable; and, while it is of course imperative to leave untouched all forests that should be protected, I think that we need to take a second look at the use of natural stands. The world's demand for timber and biomass will not likely be met unless all reasonable methods are used.

**Hibi:** As the global population increases, the demand for land, or rather, for land-use, also increases, including uses for agriculture,

## Participants

### Outside experts



**Masahiko Ohsawa**  
Professor,  
The University of Tokyo



**Toshio Ogata**  
Professor,  
Chuo University



**Minoru Kumazaki**  
President,  
Gifu Academy of Forest  
Science and Culture



**Yasufumi Hibi**  
Representative,  
Conservation International  
Japan Program



**Toshihiko Fujii**  
Director,  
Trade and Economic  
Cooperation Bureau,  
METI



**Kenji Kanda**  
Director, Executive Officer,  
Oji Paper Co., Ltd.



**Junji Ohsawa**  
Corporate Officer, General  
Manager, Environmental  
Management Department,  
Oji Paper Co., Ltd.

countermeasures for climate change, and environmental conservation, besides timber production. These reasons alone are already making it difficult to secure land for any use, including for companies like Oji Paper, and this will be even more true in the future. I think Oji Paper needs to prepare a new business model for a coming age when we can no longer rely only on wood raw material for paper products.

**Ohsawa:** The question is how best to allocate land usage in order to sustainably use natural resources. I think it is only natural, as demand grows, to farm timber resources on plantations. At the same time, forests that should be protected must be protected. In order to demonstrate such a stance, perhaps you could ensure that protected natural stands make up a certain percentage of company holdings outside Japan, just as you have natural stands among your company-owned forests in Japan. And I also want to say that sustainable forest usage is possible with natural stands. There are also logging methods that do not damage forest soil during harvesting. While only a few companies flatten slopes with bulldozers and practice clear cutting on tree plantations, I feel that all must return to the origin of forestry—that is, using the ecosystem while protecting its water retention capacity and its ability to accumulate organic matter. Is Oji Paper looking into methods of sustainable forest use like these?

**Kanda:** We are conducting research at a center in Mie Prefecture and at plantations outside Japan. People tend to think that corporations choose only economically efficient methods, but efficiency for us actually means sustainability, since tree planting cannot be sustained if something goes wrong with the natural ecosystem. For instance, if an overseas tree plantation faces opposition from local residents, the business cannot continue, and I am very proud of our track record in this area.

**Ogata:** The exhaustion of forest resources is also a major problem in terms of the prevention of global warming. One measure to prevent global warming is the Clean Development Mechanism (CDM),<sup>\*2</sup> which facilitates the implementation of global warming countermeasures in developing countries with the cooperation of developed countries. Among the CDM schemes, CDM ARforestation, or the development of forests to absorb CO<sub>2</sub>, is

not generally regarded as very promising. In my view, though, even in the form of a tree plantation, CDM ARforestation is a viable way to produce environmental and economic effects and bring a variety of benefits to residents of the surrounding area.

**Kanda:** We are also making an attempt at CDM ARforestation, but it is not going quite as expected.

**Kumazaki:** There is no international consensus regarding its efficacy.

**Hibi:** The issue is wider than whether certain CDM projects are valid or not. We need to remember that no matter what one tries even with good intentions, it always has some negative effect on the environment. There are various opinions regarding CDM, but I think we should move forward with a firm conviction about the positive aspects while carefully managing the negative.

\*1 A system whereby an independent, third party organization evaluates and certifies that a forest is being well managed according to sustainable forest management standards. Internationally known standards include FSC, PEFC, and SFI. In Japan, the SGEC sets standards for forest certification.

\*2 A mechanism by which measures to reduce or absorb greenhouse gases are implemented in developing countries through investment by developed countries. The results become emissions credits shared by the two countries.

### Can guidelines for tree planting be drawn up? Cooperation needed with domestic forest products industry

**Hibi:** Many things need to be considered when planting trees, including choice of species, planting location, and the relationship with local communities. Would Oji Paper consider developing guidelines that cover these aspects so that reforestation projects, especially in developing countries, minimize the negative environmental and social impacts?

**Kanda:** A best practices compendium has been prepared by the paper industry. While I do not mean to gainsay guidelines, the various issues involved cannot be solved merely by having standards in place. Nature is diverse. The only truly responsible approach is to address each issue individually. One good method is to have people discuss the issues, just as we are doing here today, or even invite them on site visits.

**Kumazaki:** I have followed the forest industry in Japan for 50 years, and the most unfortunate thing is that forests and the forest industry have gone down the tube. One reason for this is that Japan's forest industry has been abandoned by the paper companies. Of course, the forest industry is also to blame for the fact that it did not build a pulpwood supply chain. The paper industry originally grew on the base of Japan's forest resources. I am very interested in the direction the industry will take from here on. Scandinavian countries do not waste timber at all; their pulp mills are closely linked to their saw mills, and they go down the line in making use of each tree, from housing material to pulp to energy source. I wish paper companies would cooperate with the forest products industry in Japan and move aggressively to build such a cascade use<sup>\*3</sup> system here.

**Kanda:** Cascade use, which promotes the highest added value at each level, is important to the effective utilization of Japan's forest resources, just as you said. Oji Paper recognizes this and is devoted to pursuing an integrated forest products industry.

\*3 Making use of resources and energy in a cascaded system of gradations, from higher level uses to lower level uses.

### There are unavoidable costs associated with sustainable forest use. How can we get consumers to understand this?

**Hibi:** I feel that Oji Paper sees forests only as raw materials for its products. Forests not only have economic value as timber or paper, but also offer many other benefits to human society which we call "ecosystem services." I would like to request Oji Paper to take a long-term view of the entire forest ecosystem and take into account the other benefits provided by forests.

**Ogata:** The paper industry has a very peculiar side. Different from other manufacturing industries, it must include quite a large area of space within its management view. In addition, it must also consider the temporal aspect of its business, since it takes time to realize a profit after planting trees. It then has to solve the challenge of balancing these concerns with ecology, not just with market profitability.

**Kanda:** Certainly, every forest is valuable in many ways other than as a source of raw materials. We desire to preserve forests because of these other values. The question, of course, is where to strike the balance. As long as humans live, they will have an impact on nature. Paper is no exception. While our commitment to providing paper sustainably is unwavering, the public must realize that there are costs associated with this.

**Fujii:** Is it really true that consumers tolerate social costs, that they choose the products of companies that demonstrate social responsibility? You may recall the symbolic fact that, in the past, sales in Japan of a certain sporting goods maker that had issues with child labor outside Japan rose, despite a consumer boycott. I think that even when consumers have a lot of information, they cannot always digest it. Looking even at the

current LOHAS<sup>\*4</sup> boom, it is clear that consumers' interests—such as wanting to eat organic food and wear organic cotton—are limited to the scope of their own personal benefit. For that reason, I think that companies should make the attempt to pass on the costs after taking a realistic look at what consumers are willing to respond to. Having said this, I do think it is worth making an effort to change this reality.

**Kanda:** I truly want to hope that consumers will pay more for paper if we can get the message across to everyone who uses paper that it is made with great effort, by giving them specific examples of the challenges we face. We reuse resources and are doing our best to plant trees. Unfortunately, just because we work hard for sustainability does not mean our future is secure. Many demands, including housing, paper, and energy, are placed on forests, and I think that the future increase in demand is going to be enormous. Other issues include protecting biodiversity<sup>\*5</sup> and sustainable use. I think a time will come when Oji Paper alone doing what needs to be done will not be enough. Where is the common ground between economic activity and ecology? I think a time will also come when we need to cut underproductive forests and replace them with highly productive forests, but we need to think about just how far we will be allowed to go. I would really appreciate it if people chose products after understanding that every sheet of paper we make comes with all these concerns for the future.

**Fujii:** Making that type of self-questioning process visible to the public is the most important thing.



**Ogata:** Campaigns on forest culture conducted through the mass media and a traceability<sup>\*6</sup> system may be good ideas. The students from China that I teach are very concerned about Japan's importation of large quantities of cheap Chinese-made chopsticks leading to deforestation in China. I think that certification and traceability systems should be adopted so that general consumers understand them, and to enable them to check where the products they are using actually came from.

**Ohsawa:** It would be nice if the name of the paper company was shown on paper products such as books and information provided so that people could know how the raw materials were procured. This might encourage people to pay better attention to the benefits of paper.

**Hibi:** Thus far, sales approaches in Japan have always held to the line that "the customer knows best." Looking at the current state of the environment, however, the situation is such that it is no longer tenable to wait for customers to become aware of and choose to consume truly good items. I dare say that companies nowadays need to strive to make good products sellable by proactively communicating to customers the issues the global community is facing, how environmentally friendly products can contribute to solving those problems, and why it really is worth paying more for those products.

**Ohsawa:** Thank you all for the very engaging discussion today. Going forward, we will incorporate as much of your feedback as possible into our business practices.

## Response to Stakeholder Dialogue

### Junji Ohsawa

Corporate Officer  
General Manager, Environmental Management Department  
Oji Paper Co., Ltd.

Our second stakeholder dialogue was on the topic of wood raw material procurement. Our guests all provided useful opinions from their unique perspectives on the difficult issue of how best to secure raw material for paper making from resources grown using sustainable forest management amid the ever-increasing worldwide demand for timber.

We will make the most of today's feedback on raising the productivity of tree plantations, stepping up biodiversity initiatives, and sending out a clearer message about the efforts we make as a company, including traceability, in our management in coming months and years. Also, as we begin to see signs of the regeneration of Japan's forest industry, I would like to express Oji Paper's commitment to fulfill its role toward the total effective utilization of Japan's forests.

\*4 Lifestyles of Health and Sustainability. The lifestyle of people who are highly concerned about health and environmental issues.

\*5 Biodiversity was defined at the Earth Summit, an international conference on the environment and development held in Rio de Janeiro in 1992, as "the variability among living organisms from all sources, including inter alia, terrestrial, marine, and other aquatic ecosystems, and the ecological complexes of which they are part; this includes diversity within species, between species, and of ecosystems." Biodiversity is increasingly understood as a broader concept which includes ecosystem services that benefit human beings globally.

\*6 A system for confirming the production history of products, from raw material procurement through production, distribution, and marketing. It enables verification that wood raw material has been produced from a properly managed forest by tracing it back to the source of the material.



# The Unique Role of the Oji Paper Group

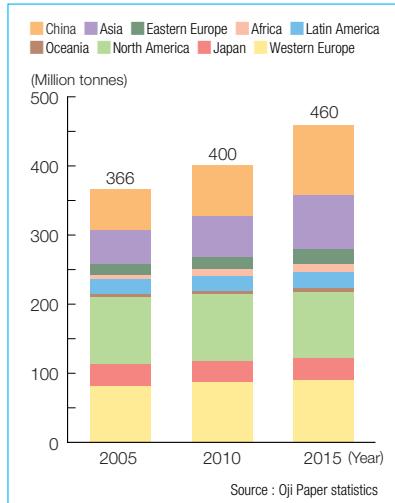
The Oji Paper Group recognizes that it has many responsibilities to the global environment and local communities as an enterprise that manufactures paper. These pages take a fresh look at how the Oji Paper Group is fulfilling those responsibilities, and examine its role in the world in light of today's social circumstances.

## The world's growing demand for paper and the Oji Paper Group's business strategy

Paper has long been considered a measure of culture. As an economy develops and lifestyles become more affluent, per capita consumption of paper increases. While paper consumption in Japan peaked in 2000 and has been nearly flat since, worldwide consumption is increasing dramatically. It is forecast to be about 30% higher than the 2005 level by 2015. Especially in developing countries, paper consumption will likely continue increasing as populations and standards of living rise (graph 1).

The Oji Paper Group is aggressively developing its business in East Asia in order to meet the world's demand for

**Graph 1** World Paper Demand Forecast



paper and to achieve sustainable business growth. The group is currently working to put an integrated pulp and paper mill into operation in Nantong, China. The mill will produce 1.2 million tonnes of printing paper annually.

## Securing a stable supply of raw materials is vital to Oji Paper's business

Since 1889, when wood pulp was first produced in Japan, the history of paper companies in Japan has been the story of a tireless effort to secure stable supplies of wood raw material.

In recent years, demand for raw material is rising as worldwide paper consumption increases. The sustainable procurement of raw material, which takes into consideration both environmental and social issues, is a prerequisite for the Oji Paper Group's business success. Oji Paper recognizes this as its role.

### Specific initiatives

#### ● Maximizing the use of recovered paper

Recovered paper is a valuable resource. The world's forest resources are limited. Stable paper production only becomes possible with the utilization of recovered paper. Oji Paper will continue using recovered paper with a view to reducing urban waste and conserving forest resources.

#### ● Recovered paper alone is not enough: Timber is also needed

On the other hand, it is not possible to continue making all the paper that the

world consumes from recovered paper alone. Oji Paper makes up the difference with environmentally friendly virgin pulp<sup>\*1</sup> made from timber taken from certified forests,<sup>\*2</sup> plantation timber, and reused and unused wood. There are also natural forests that can be used as commercial forests if sustainable forest management<sup>\*3</sup> practices are used.

#### ● Pursuing CSR procurement

With economic globalization and the increasing demand for resources, it has become vital to implement corporate social responsibility (CSR) within global supply chains. To fulfill this responsibility, the Oji Paper Group Partnership Procurement Policy was established in April 2007 to serve as the group's guide to the practice of CSR procurement.

#### ● Expanding overseas tree plantations

With the increasing world population and the continuing rapid economic growth of developing countries, demand for lumber, plywood, and other timber products besides paper is also increasing.

Industrial afforestation and reforestation, the purpose of which is to enable the supply of timber from land without forests, also contribute to the sequestration of excessive CO<sub>2</sub>, which is the underlying cause of global warming. Increasing the timber productivity of tree plantations also makes it possible to protect more natural forests, which harbor rich biodiversity. The Oji Paper Group is expanding the area of its tree plantations with the goal of securing timber resources for its own use.

#### ● Contributing to the development of local communities through overseas tree plantations

At present, the Oji Paper Group has tree plantations in six countries: New Zealand, Australia, Vietnam, China, Laos, and Brazil. The success of a plantation

Building a sustainable business model to meet the world's demand for paper

# Pursuing a business model that is compatible with global warming countermeasures and the protection of biodiversity

**The Oji Paper Group's mission is to provide a stable supply of paper.**

**Oji Paper's recycling-based business model is friendly to the environment and society.**

## The Oji Paper Group fulfills its social responsibility by conducting its business according to three core concepts.

### Forest recycling

- CSR procurement  
(70% of wood raw materials is imported)
- Expansion of overseas tree plantations
- Sustainable forest management and acquisition of forest certification
- Advancement into the total forest products industry  
(Largest private forest owner in Japan)

### Paper recycling

- Expansion of recovered paper use

### Global warming countermeasures

- Expansion of new energy use

**Contributing to local communities by working on various global environmental issues**

### Prevention of global warming Conservation of biodiversity

- Encouragement of CSR at business partners
- Eradication of illegal logging
- Conservation of forests
- Sequestration of CO<sub>2</sub> by forests
- Reduction of waste
- Reduction of fossil fuel use

depends on winning the trust of the local community, since tree plantation operations require the long-term use of expansive lands outside Japan as well as the labor of local people.

Tree plantations contribute to the development of local communities. Through its plantation operations, the Oji Paper Group is an active corporate citizen, providing seedlings free of charge, supporting health checkups at local elementary schools, and making other social contributions, not to mention developing infrastructure and licensing technology.

#### ● Working to regenerate Japan's forest products industry

Recently, the price of timber imported to Japan has been rising. Turning this into a golden opportunity to regenerate Japan's forest products industry will require lowering timber production costs by consolidating the volume of timber handled, developing a timber distribution system that enables a large-volume

and stable supply, and developing a processing system based on cascade use to increase the added value of domestic timber.

As the largest private forest owner in Japan, the Oji Paper Group is working to regenerate Japan's forest products industry by cooperating with related industries and communities.

#### ● Reducing fossil fuels and facilitating forest sequestration of CO<sub>2</sub>

The paper industry is characterized by consumption of large amounts of energy. However, the Oji Paper Group employs combined heat and power at its mills and uses a biomass<sup>\*4</sup> energy source called black liquor, which is separated from timber during the kraft pulping (cooking) process.

In addition to further reducing Oji Paper's group-wide use of fossil fuels, the company is increasing the amount of CO<sub>2</sub> sequestered through sustainable forest management practices at

company-owned forests in Japan and through the expansion of overseas tree plantations.

\*1 The bulk cellulose fiber that was separated from timber and other plants through mechanical or chemical processing.

\*2 See note 1 on page 10.

\*3 Refers to forest management that is environmentally, socially, and economically sound. The environmental component means maintaining biodiversity and protecting ecological processes and the ecosystem itself. The social component means maintaining a healthy human society, which is dependent on forests in many ways. The economic component means ensuring the viability of ongoing timber production and use.

\*4 A source of organic energy, excluding fossil resources, derived from renewable biological matter (e.g., timber).



Preparing plantation seedlings for shipment at a nursery in Vietnam.

# Forest Recycling

Oji Paper produces timber using sustainable forest management practices while giving due consideration to biodiversity issues and the well-being of local communities.



## Confirming that wood chips and pulp are not made from illegally logged wood

The Oji Paper Group has established Wood Raw Material Procurement Guidelines. In line with these guidelines and with a view to CSR procurement, we verify the status of suppliers' CSR implementation, make sure that illegally logged timber is not included in wood raw material, and confirm that resources are supplied from sustainably managed forests.

We require all suppliers to submit traceability reports for wood raw material. Reports are submitted for each shipload of imported wood chips. For small-batch domestic wood, they are submitted once a year, and each truckload is confirmed to be free of illegally logged timber. Moreover, traceability reports are audited by a third party and the summaries are made public. This initiative is in agreement with Japan's Law on Promoting Green Purchasing, which was revised in April 2006.

When using forest resources and other natural material, Oji Paper strives to minimize environmental impact, demonstrate social consideration, and contribute to the community where those resources exist. The Oji Paper Group practices CSR procurement on its own tree plantations, and encourages all of its suppliers to do the same.

## Planting what we use: Sustainable forest management at plantations

The Oji Paper Group started tree plantations outside Japan in the 1970s. Since the 1990s, these plantations have been expanding steadily. With the aim of securing resources for the future, our goal today is to increase the area of our tree plantations outside Japan to 300,000 hectares by 2010. As of the end of fiscal 2006, the group had plantation operations with a total area of 170,000 ha at 11 locations in six countries ([table 1](#)).

The trees in some areas of these plantations have already reached harvestable

size, and the volume of chips produced from them is increasing. In fiscal 2006, these chips accounted for 11% of our total import of chips ([graph 2](#)). This percentage will reach 16% by 2011, and is expected to reach 40% when the trees on our future 300,000 ha of plantations attain harvestable size.

We are developing overseas tree plantations with careful attention to the balance among environmental, community, and economic needs. In terms of the environment, we make sure that biodiversity is preserved. On the social front, in Laos, for example, we select plantation sites after forming committees made up of company staff, government officers, and village residents, who help to select sites. We ensure that our plantations will be sustainable, in order to guarantee a stable supply of raw material. We are also working enthusiastically to obtain forest certification\*1 ([graph 3](#)), which we plan to acquire for all plantations in the future.

In addition to tree plantations for industrial purposes, the Oji 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 and trees that protect China's Loess Plateau under projects funded by Official Development Assistance (ODA) grants from the Japanese government. We have also been an active partner since the start of a Nippon Keidanren (Japan Business Federation) afforestation project in Chongqing, China. This project aims to prevent flood damage and protect the ecology near the Yangtze River. In all these endeavors we are responsible for the tree planting operations.

### Wood Raw Material Procurement Guidelines

#### Basic Approach

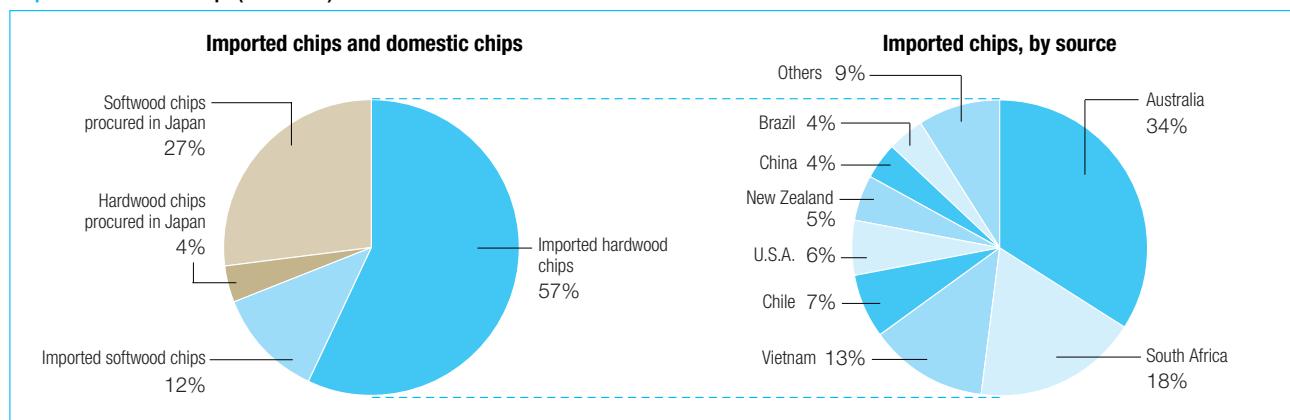
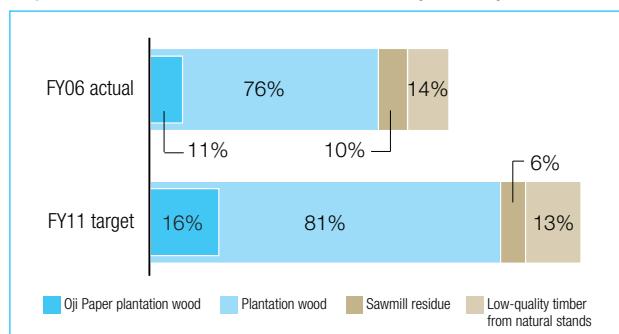
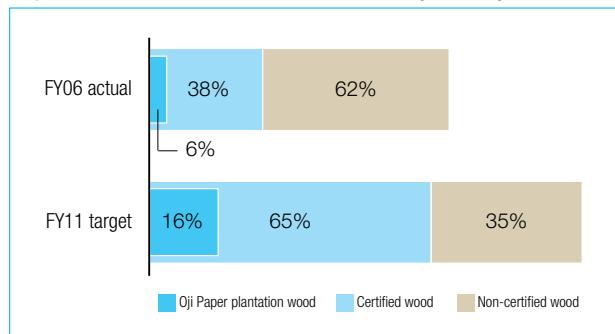
Wood used in making paper is a resource of excellent reproducibility. Through appropriate management and use, forest resources contribute to the prevention of global warming by absorbing and sequestering carbon dioxide (CO<sub>2</sub>) and to the preservation of biodiversity. Oji Paper will pursue CSR procurement when procuring wood raw materials, by acquiring resources grown through sustainable forest management, in accordance with the Oji Paper Group Partnership Procurement Policy.

#### Procurement Guidelines

- (1) Expand procurement of wood from certified forests
- (2) Increase use of plantation trees
- (3) Utilize unused wood effectively
- (4) Verify that procurement is in compliance with laws and is environmentally friendly and socially responsible
  1. Implement monitoring of suppliers
  2. Ensure raw material traceability
- (5) Disclose information

\* Oji Paper will pursue CSR procurement when procuring pulp, in accordance with these guidelines and based on the Oji Paper Group Partnership Procurement Policy (page 41).

\*1 See note 1 on page 10.

**Graph 1 Procured Wood Chips (Fiscal 2006)****Graph 2 Share of Wood from Plantation Trees, of All Imported Chips****Graph 3 Share of Wood from Certified Forests, of All Imported Chips****Table 1 Oji Paper Group Tree Plantations Outside Japan**

	Country	Region	Company	Est.	Cooperating companies	Tree species	Target plantation area (ha)	Plantation area at end of FY06 (ha)	Harvest cycle (years)	FSC certification year
Chip export	New Zealand	South Island	SPFL	92	Oji Paper, ITOCHU, Fuji Xerox, Fuji Xerox Office Supply	Eucalyptus	10,000	9,861	12	2004
	Australia	Western Australia	APFL	93	Oji Paper, ITOCHU, Senshukai, Tohoku Electric Power, Nippon Yusen	Eucalyptus	26,000	23,714	10	2004
	Vietnam	Binh Dinh Province	QPFL	95	Oji Paper, Sojitz, Dai Nippon Printing	Acacia, Eucalyptus	9,100	9,691	7	2006
	Australia	Victoria	GPFL	97	Oji Paper, Sojitz, Toppan Printing, HEPCO Hokkaido Electric Power	Eucalyptus	10,000	6,565	10	
	Australia	Queensland	BPFL	98	Oji Paper, ITOCHU, Kodansha, Seihoku, Electric Power Development, J-POWER RESOURCES	Eucalyptus	10,000	4,376	10	
	Australia	Victoria	EPFL	99	Oji Paper, Sojitz, Shogakukan, Japan Pulp and Paper	Eucalyptus	10,000	3,099	10	
	China	Guangxi Zhuang Autonomous Region	CPFL	01	Oji Paper, Marubeni	Eucalyptus	6,000	6,299	6	
	Laos	Central Laos	LPFL	05	Oji Paper, Kokusai Pulp & Paper, Shueisha, Mitsui O.S.K. Lines, Seishukai, Recruit, Daiichi Paper, Sato, C's Create, U-CAN, Maruman, Honda Trading, A-One, Nishizaki Paper Sales, Fellissimo, Belluna, Government of Laos	Eucalyptus	50,000	5,362	7	
Pulp production	China	Huizhou, Guangdong	KPFL	05	Oji Paper, Guangdong Petro-trade Development, Guangdong Petro-trade Development Zhanjiang, Marubeni	Eucalyptus	60,000	18,283	5	
	Brazil	State of Minas Gerais	*CENIBRA	73	Japan Brazil Paper and Pulp Development (Oji Paper, Japan Bank for International Cooperation, others)	Eucalyptus	43,450	50,107	7	2005
<b>Total</b>							260,560	165,671		
<b>Target</b>							300,000	300,000		

Tree plantation areas are as of the end of December 2006 for CPFL, KPFL, and CENIBRA and as of the end of March 2007 for the others. The area for QPFL includes 1,142 ha of plantations loaned to another companies.

\* 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: 39.84%)  
(Total area—PAN PAC: target area 30,000 ha, planted area 32,657 ha; CNB: target area 110,000 ha, planted area 125,771 ha)

SPFL Southland Plantation Forest Company of New Zealand Ltd.

QPFL Quy Nhon Plantation Forest Company of Vietnam Ltd.

BPFL Brisbane Plantation Forest Company of Australia Pty. Ltd.

CPFL Guangxi Oji Plantation Forest Company Ltd.

PAN PAC Pan Pac Forest Products Ltd.

KPFL Huizhou Nanyou Forest Development Company Ltd.

EPFL East Victoria Plantation Forest Company of Australia Pty. Ltd.

LPFL Oji Lao Plantation Forest Company Ltd.

CENIBRA Celulose Nipo-Brasileira S.A.

GPFL Green Triangle Plantation Forest Company of Australia Pty. Ltd.

## Making the most of forest value: A report from the field on forest recycling

**Jun Yamakawa** Resident Director, Pan Pac Forest Products Ltd.



Years since planting: (1) 29 years, (3) 4 years, (4) 5 years, 41 years (Douglas fir) (5) 16 years, (7) 6 years, (8) 5 years. (2) Logging underway. (6) A natural stand left along a stream.



Photo 1 Pan Pac tree plantation.

### The planting, harvesting and re-planting cycle

Pan Pac integrates the production of pulp and lumber from timber taken from a plantation belonging to the Oji Paper Group located near Napier in the Hawke's Bay region of New Zealand's north island. Oji Nepia, which supplies household paper, got its name from Napier which is now a familiar city for the Oji Paper Group.

It has been 34 years since we started operations here, where we now manage

32,500 hectares of forest. Throughout the entire forest we move through a cycle of planting, harvesting and re-planting (photo 1). The forest is being utilized effectively to ensure good environmental, social and economic performance.

Pan Pac produces and markets pulp, lumber, chips and logs. The forest division obtained Forest Management (FM) Certification<sup>\*2</sup> in 2001, and the lumber division obtained Chain of Custody (CoC) Certification<sup>\*3</sup> in 2002 from the Forest Stewardship Council (FSC). Virtually all of the nearly 200,000 tonnes of pulp produced annually and some of the chips are shipped to the Oji Paper Group's

mills in Japan and turned into paper. Pan Pac fiber accounts for about 4% of the raw material for paper produced by Oji Paper.

<sup>\*2</sup> Certification for forests, confirming that the forest is being properly managed.

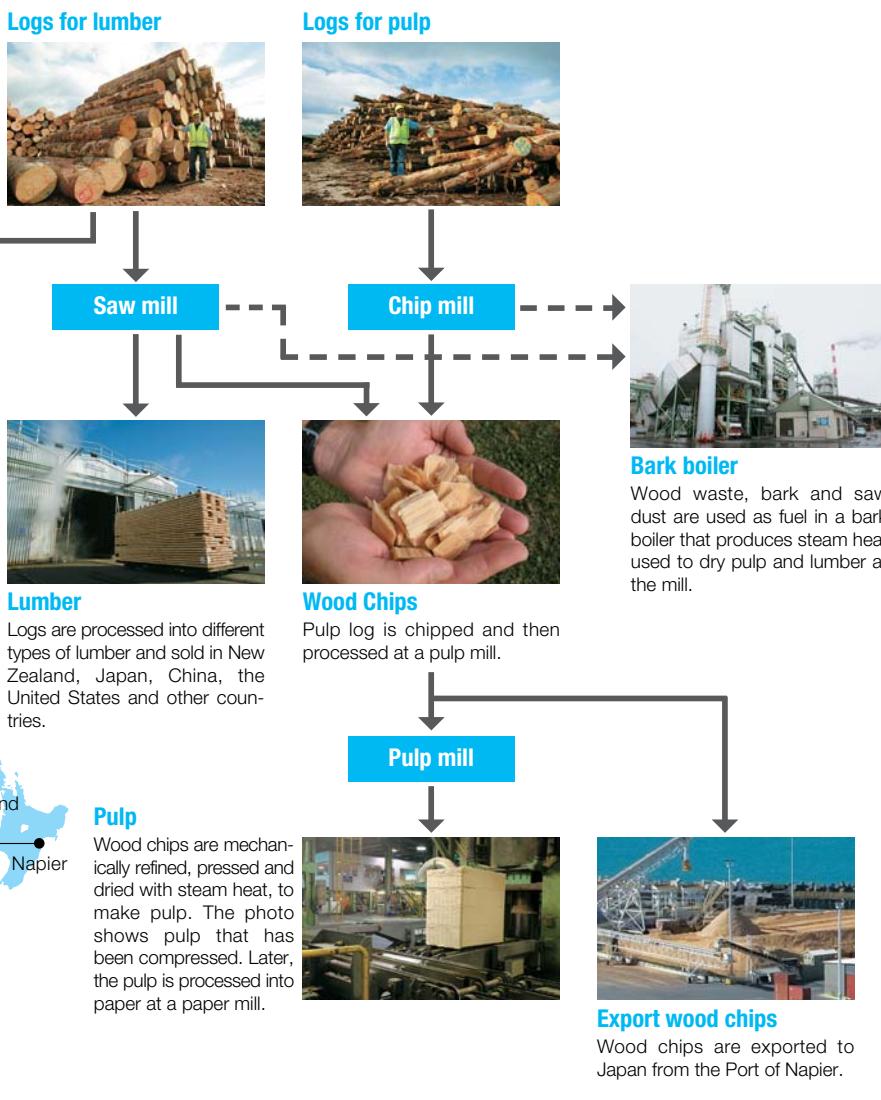
<sup>\*3</sup> Certification that wood from certified forests has been handled properly at all stages of production, processing, and distribution. Each stage is examined to verify that it is being properly managed to prevent mixing with non-certified wood.

### Sustainable business model: Making the best use of the whole tree

Most trees grown in the Oji Paper Group's tree plantations outside Japan

## Pan Pac's Timber Flow

— Product flow  
- - - Effective utilization of waste wood



are harvested 5 to 15 years after planting, since they are grown as a raw material for papermaking. Eucalyptus and acacia are the usual species. In contrast, Pan Pac grows radiata pine. This tree grows fast for a coniferous species and we have it on a cycle of about 30 years from planting to harvest.

The felled logs are first divided into saw logs (large and straight logs), which can be used at saw mills and pulp logs (small and bent logs), which cannot be used at saw mills. Lumber that will be used as a building material, for furniture or for the interior and exterior of houses is cut after the bark is stripped from saw

logs. The remains are then processed into chips. Pulp logs are processed directly into chips after the bark is stripped off. Pulp is made from the chips, with surplus exported to Japan. The bark and sawdust are used as fuel for a boiler at the mill.

Each tree is processed for lumber, pulp or wood chips, and the remainder is used as an energy source so nothing is wasted. Here, we have realized a sustainable business model based on the commitment to using the "Whole of Forest," or in other words, making the most of the value of every tree.



"Forest management that makes the most of forest value is a reality here." —Jun Yamakawa, Resident Director

## Capitalizing on forest functions for effective management of company-owned forests

The Oji Paper Group currently manages about 190,000 ha of company-owned forests in Japan. These forests were originally used to secure raw material for papermaking, but are now primarily used to produce wood for lumber.

Plantations account for about 40% of our company-owned forests in Japan. Plantations in Hokkaido are planted with spruce, fir, larch, and other species. Plantations in other regions are planted

with cedar, cypress, and other species. The trees in these forests were planted mainly following World War II. To ensure the health of the forests, we must thin out younger trees and do other maintenance work. We invest more than ¥500 million each year to do so. In addition to timber production, forests have other very important public benefits, including absorption of CO<sub>2</sub>, replenishment of water resources, soil retention, and preservation of biodiversity. Oji Paper's company-owned forests in Japan have been estimated to absorb 1.15 million tonnes of CO<sub>2</sub> per year, and to provide public benefits worth ¥570 billion per year.

The Oji Paper Group practices forest recycling. Recognizing that forests need to be properly managed in order to maintain forest recycling, we have been pursuing acquisition of forest certification under the Sustainable Green Ecosystem Council (SGEC<sup>\*4</sup>) at all company-owned forests in Japan. To date, we have acquired SGEC certification for 149,000 ha, or about 80% of company-owned forests ([table 2](#), [photo 2](#)). We plan to acquire certification for the remaining forests in fiscal 2007.

<sup>\*4</sup> See note 1 on page 10.

**Table 2 Current Certification of Company-owned Forests in Japan**

Forest	Location	Certification year	Area (ha)
Kamiinako	Shizuoka	2003	211
Fuso	Wakayama	2004	645
All of Hokkaido	Hokkaido	2005	124,998
Nikko, Miho, others	Tohoku, Kanto, Chubu	2006	23,165
<b>Total</b>			<b>149,019</b>



**Photo 2** Inazuma Forest in Mie Prefecture, which acquired SGEC certification in 2006.

## Research at overseas tree plantations on securing raw material for pulp

### Forestry Research Institute

The Forestry Research Institute's mission is to develop new technology for expanding overseas tree plantations and increasing their productivity to secure low-cost, good-quality raw material. Specifically, the institute assesses potential sites for new



Selecting outstanding clones (acacia hybrid) in Vietnam.

plantations and selects species suited to the local soil; manages the soil of the group's existing overseas plantations to improve productivity (silviculture); selects plantation trees with superior growth and shape and excellent quality as a raw material for pulp, and breeds the next generation of outstanding trees; and develops technologies such as clonal plantations,<sup>\*5</sup> which are an effective means of increasing the number of outstanding trees.

QPFL in Vietnam is already improving productivity with a clonal plantation that uses an excellent acacia hybrid individual. In Australia last year, we developed a technique for extensively multiplying cuttings<sup>\*6</sup> of *Eucalyptus globulus*, a species that has been difficult to clone until now, and planted a test clonal plantation of 100 ha.

On the other hand, new tree varieties that can withstand arid conditions and acidic soil and grow in denuded land that does not easily accommodate afforestation

are needed to dramatically expand the area of tree plantations. Using the new technology of genetic recombination, we have succeeded in developing new eucalyptus varieties that have these qualities. At present, we are moving forward gradually toward commercial viability by conducting environmental impact assessments, including on soil microbes, and assessing growth potential in limited areas that are similar to the environment of the actual plantation. We are also mapping the genomes of eucalyptus trees and striving to develop completely novel plantation trees that enable us to control the fiber morphology so that the trees can be made into superior quality pulp, the raw material for papermaking.

<sup>\*5</sup> Plantations planted with trees cloned using cuttings.

<sup>\*6</sup> A method of regenerating roots from a shoot that has been removed and set in a supporting material in controlled conditions, including humidity, to create a copy of a certain individual tree or other plant.

**Site Report**

# Sustainably utilizing natural resources while leaving Tasmania's rich natural environment intact

**Tomonobu Okuda** Manager, Melbourne Office, Strategic Resource Management Division, Oji Paper Co., Ltd.

## Confirming where all our wood raw material was logged

I imagine the first thing that comes to most people's minds when they hear the phrase "sustainable forest management" is a plantation. However, plantations alone do not create sustainable forest resources. Proper forest management enables environmental protection and timber production to coexist compatibly, even in natural stands.

With rich eucalyptus natural stand resources, the Australian island of Tasmania has been a focus of debate on the balance between the environment and the economy. The 1997 Tasmanian Regional Forest Agreement made 2.7 million ha, or nearly half of the island's entire land area, protected land. Further, the 2005 Tasmanian Community Forest Agreement expanded

the area of protected old-growth forests to nearly 970,000 ha (corresponding to 79% of old-growth forests) by additionally protecting almost 170,000 ha of old-growth forests.

Gunns Limited, a major supplier of wood chips, practices sustainable forest management at both plantations and natural stands designated as production forests in Tasmania. The company has obtained forest certification under the Australian Forestry Standard (AFS<sup>\*7</sup>). With mutual recognition from the Programme for the Endorsement of Forest Certification Schemes (PEFC), the world's largest forest certification scheme, AFS is recognized as valid certification in European countries, as well.

Gunns' operations in natural stands are conducted after performing assessments of flora, fauna, cultural heritage, topography, soil, water, and landscape under the strict criteria of the AFS. Oji Paper employees make site inspections



"As a chip buyer, I support Tasmania's efforts to make majestic natural settings and a prosperous lifestyle compatible." —Tomonobu Okuda, Manager, Melbourne Office

and verify the state of forestry operations together with on-site staff ([photo 3](#)).

While Gunns produces timber and exports chips in line with the two forest agreements and the forest certification scheme mentioned above, it is also working to expand afforestation. Oji Paper has confirmed, through exchanges of information with both the Australian government and Gunns, that Tasmanian chips are a resource produced through legal and sustainable forest management. Going forward, we will continue to listen to the voices of all stakeholders including NGOs and contribute to the local community through careful use of Tasmania's resources while leaving its rich natural heritage intact.

<sup>\*7</sup> AFS has received mutual recognition from PEFC. As such, Gunns is not only certified as legally compliant at the state level in Tasmania regarding planning and practice of forest management, but also as a practitioner of sustainable forest management at the national level in Australia and the global level, as well.



[Photo 3](#) Checking a plantation together with a supplier in Tasmania.

# Paper Recycling

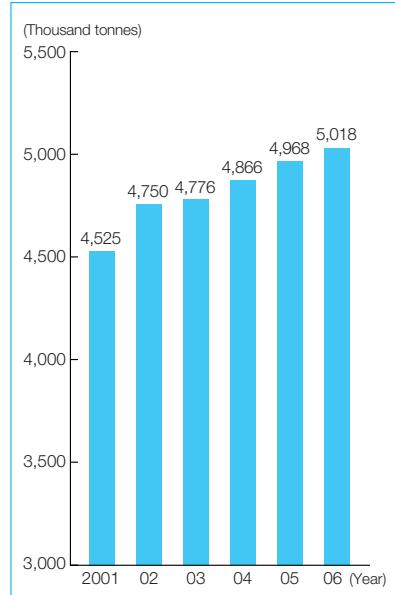
Recovered paper is an important raw material for papermaking. We are committed to making the maximum use of recovered paper by matching the quality of recovered paper used as a raw material to the grade of paper to be produced. In this way, we are also helping reduce waste and save forest resources.

## More than 60% of our raw material for papermaking is recovered paper

The Oji Paper Group is committed to the maximum possible recovery and use of recovered paper. In 2006 we used about 5.02 million tonnes of recovered paper, or 26.7% (on a calendar year basis) of all the recovered paper used in Japan. Our average recovered paper utilization rate across all products was 60.2% in fiscal 2006. The Oji Paper Group is the largest user of recovered paper in Japan ([graph 1](#)).

Utilizing recovered paper as a raw material for papermaking reduces waste and saves forest resources. Notably, even though paper made with recovered paper produces more fossil fuel-derived CO<sub>2</sub> emissions, the Oji Paper Group has reduced its total fossil fuel-derived CO<sub>2</sub> emissions on a group-wide basis.

**Graph 1**  
Oji Paper Group's Recovered Paper Utilization



## Using more recovered paper by matching recovered materials to end quality

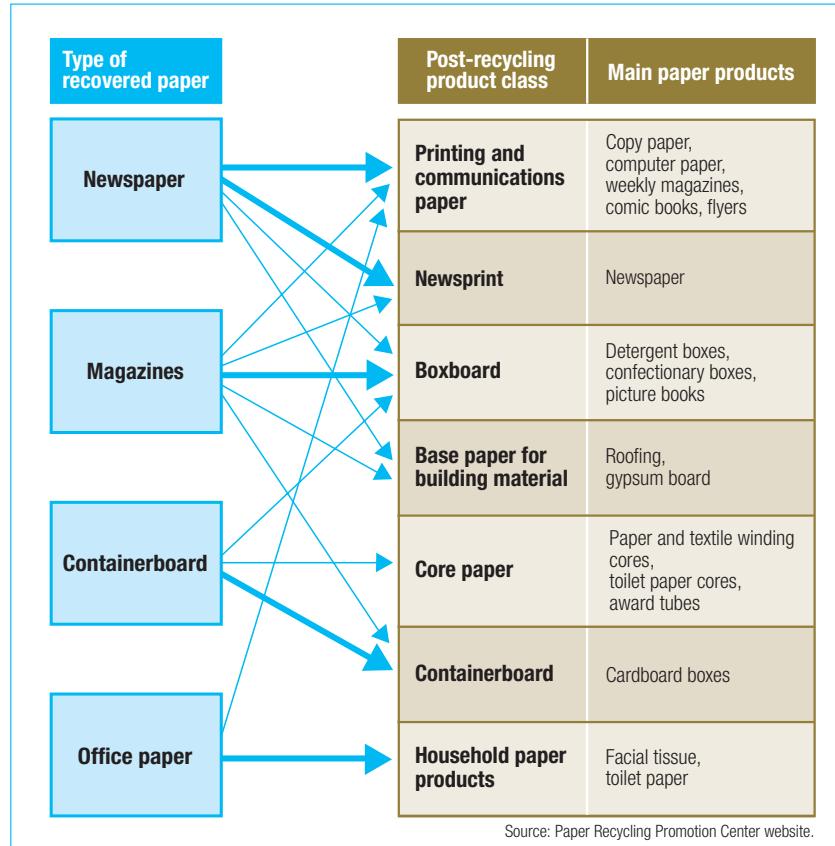
The Oji Paper Group emphasizes increasing the group's overall utilization of recovered paper, rather than focusing on the content ratio of recovered paper in every single one of its products. The environmentally responsible thing to do is to recover as much paper as possible and to match the quality of the recovered paper used for raw material to the grade of paper to be produced. In other words, we use high quality recovered paper to

make printing papers and copy papers and use other recovered paper to make paperboard and other papers ([figure 1](#)).

## Pursuing maximum use with the least environmental impact

A number of negative effects would result if, when producing pulp from recovered paper, we insisted on making the recycled pulp as white and as free from dirt and extraneous material as virgin pulp<sup>\*1</sup> is—the manufacturing process would be slowed, the pulp yield would drop, and

**Figure 1** Types and Uses of Recovered Paper



excessive amounts of energy would be consumed. For this reason, it is important, when using recovered paper, to blend in the right quality of recovered paper for the grade and eventual use of the paper being produced. This helps to limit the environmental impact of the production process.

For example, a higher ratio of recovered paper can be used when making coated paper, the surface of which is coated with pigments—which cover dirt and extraneous material derived from the recovered paper and increase the brightness—than when making non-coated papers.

Further, it is possible, overall, to raise the yield when producing recovered paper pulp and to achieve a high ratio of recovered paper pulp to virgin pulp. This can be achieved by separating recovered paper pulp into higher quality pulp and lower quality pulp during the debris removal, bleaching, and deinking processes, and then blending in the appropriate quality pulp for the use of the paper being produced.

\* See note 1 on page 14.

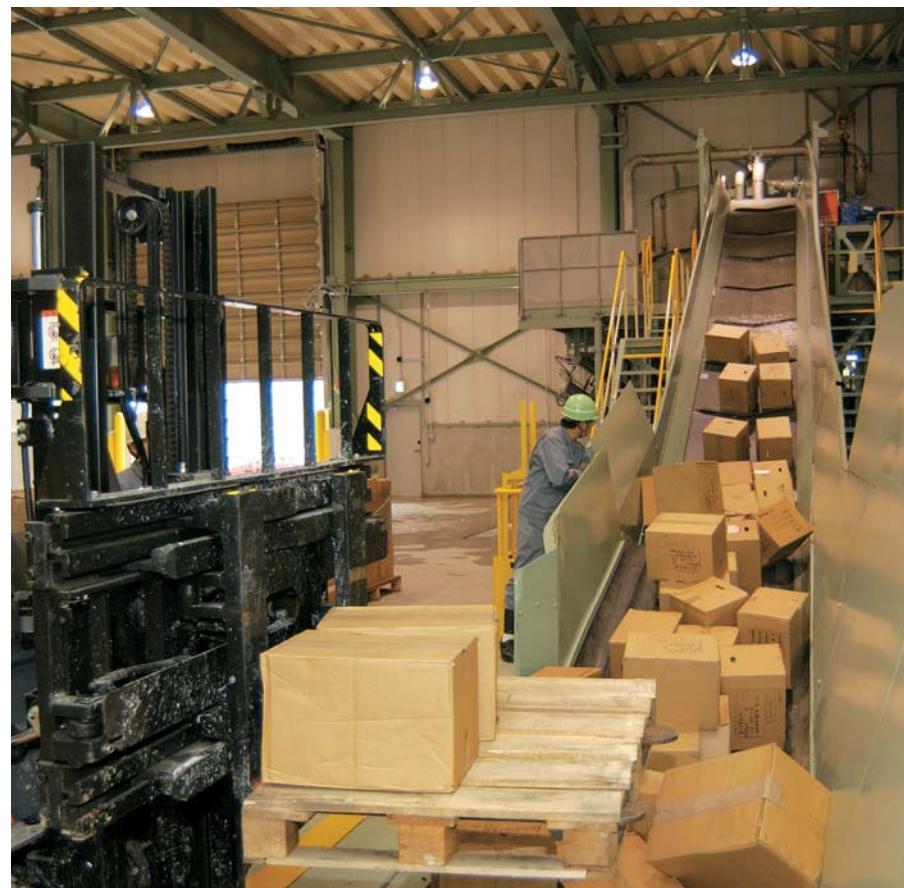
## Technological initiatives for making full use of recovered paper

### ● Increasing the use of unused recovered paper by recycling confidential documents

In October 2006, the Edogawa Mill of Oji Paperboard Co., Ltd., started the Oji Confidential Document Recycling System (Oji CoDoReS) for recovering and recycling confidential documents that companies and government offices wish to dispose of securely. Until recently, it had been difficult to recycle such documents because they often include items other than paper. Today, new technology has made it possible to recycle documents without separation by processing the unopened cardboard document boxes (photo 1). The documents remain unseen by third parties. Clients can even observe the recycling process if they wish.

### ● Expanding the use of low-grade recovered paper

In order to increase the use of recovered paper, the use of low-grade recovered paper must be encouraged even more



**Photo 1** Edogawa Mill's confidential recovered paper processing facility. Cardboard boxes full of documents are processed unopened.

than before, while maintaining the same quality standards for our paper.

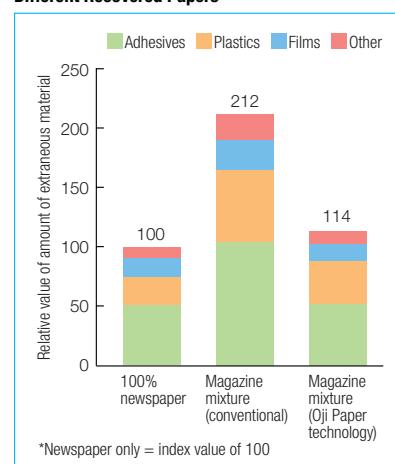
Compared to recovered newspaper, recovered magazines contain more extraneous material, including adhesives such as stickers and tape, plastics, and films. Consequentially, until recently, it was difficult to use recovered magazines in printing paper and copy paper, and they were limited to use in paperboard.

The Oji Paper Group had been working to develop technology for expanding the uses of recovered magazines. While extraneous material increases when recovered magazines are used, we have developed technology that reduces that amount of extraneous material (graph 2). As a result, we are able to maintain a high yield, which is good for the environment, while efficiently separating pulp fiber and extraneous material. Using this technology, we can obtain pulp of equal quality when recovered magazines are mixed in with recovered newspaper as when we manufactured pulp from

newspaper only. This has allowed us to include this pulp into various printing papers and information papers.

The Oji Paper Group is determined to continue its quest to make the best possible use of recovered paper.

**Graph 2**  
Amount of Extraneous Material in Pulp Made from Different Recovered Papers



# The Forefront of Paper Recycling: A Report from Oji Paper's Fuji Mill

At present, recovered paper accounts for nearly 60% of our raw material for papermaking in Japan. The Oji Paper Group engages in paper recycling out of its commitment to maximum possible recovery and use of recovered paper. We invited Ms. Aiko Kino, who has been working on environmental conservation issues for many years as a consumer advocate in Chuo City, Tokyo, to visit the Fuji Mill and give us her impressions.

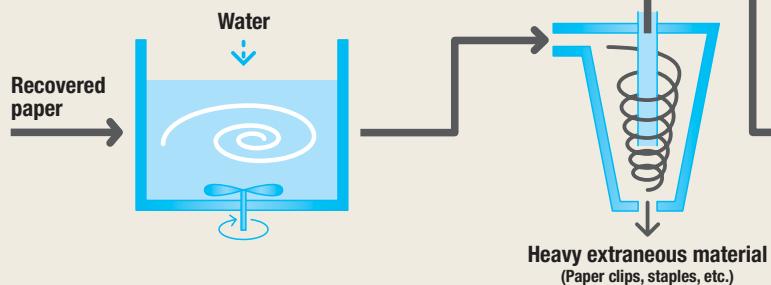


## Pulping process (defibration)

When recovered paper is agitated in a pulper to separate fibers, the mixture becomes a dense liquid. At this time, the printing ink turns into fine particles and is separated from the pulp.

## Removing extraneous material (debris removal)

Extraneous material is removed through a narrow opening due to differences in specific gravity.



## The rebirth of recovered paper: Even the heat and ash produced during incineration are used effectively in the process

The Fuji Mill produces 35,000 tonnes of paper and paperboard per month. It uses virtually 100% recovered paper pulp as its raw material, a practice which is considered uncommon around the world. It is the only paper mill in Japan that manufactures both boxboard and printing paper from recovered paper pulp. The process for manufacturing recovered paper pulp can be divided into four stages: defibration, in which the recovered paper is dissolved in water and broken up to separate the fibers; debris removal, in which rubbish and extraneous material are removed; deinking, in which ink is removed; and bleaching, in which the brightness is increased using bleaching agents (see flow chart above).

With more used paper being recovered, printing technologies diversifying,

and more composite materials like plastics being used, the amount of non-recyclable recovered paper has also risen. In fact, it is impossible to convert 100% of the recovered paper into a usable raw material for papermaking. At best, around 80 tonnes of white pulp can be extracted from 100 tonnes of recovered paper. The remainder becomes sludge, which is mixed with waste plastic and used as fuel to generate heat for the paper drying process. The ash left over is then used as a soil supplement or cement ingredient. This process demonstrates our dedication to use every resource as effectively as possible.

## Advanced recycling technology to maximize use of recovered paper

The recovered paper used as a raw material by the Fuji Mill consists of a variety of papers, including newspaper and magazines. With the worldwide demand

for paper continuing to climb, we face a scarcity of recovered paper. We plan to further expand the use of low-quality recovered paper, which includes relatively more material that cannot be used as pulp (resin-finished or laminated covers, adhesives for book binding, extra book inserts, etc.)

## Making optimal use of recovered paper as a raw material while reducing environmental impact

Recovered paper pulp is reborn as paper via paper machines. The Fuji Mill currently has three paper machines. "Paper Machine 8" and "Paper Machine N-1" manufacture printing paper, and state-of-the-art "Paper Machine N-2" manufactures boxboard that is used in confectionary boxes and other such products.

Although not apparent at first glance, boxboard has a multilayered structure (figure 1). Only the surface layer uses

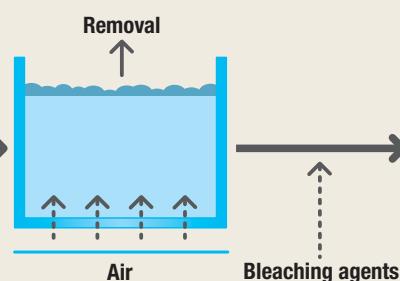


## Overview of the Fuji Mill

The Fuji Mill, located in Fuji, Shizuoka Prefecture, began operations in 1908. In 1963, the mill stopped manufacturing virgin pulp and switched to using virtually 100% recovered paper pulp as a raw material. In 1970, "Paper Machine 8" was brought into operation, followed by another two paper machines: "Paper Machine N-1" in 1990 and "Paper Machine N-2" in 2001. The mill produces about 35,000 tonnes of paper and paperboard per month and ships it to the Kansai and Kanto regions.

### Removal of ink (deinking)

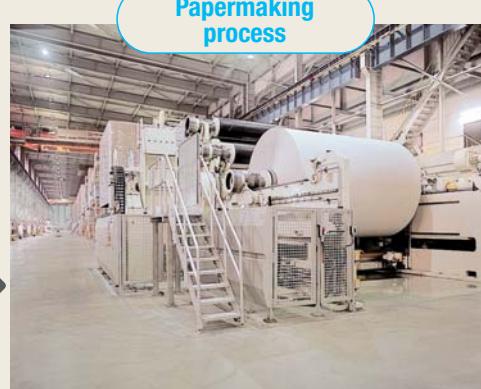
Air is blown into the pulp solution. The fine particles of ink float to the top with the air bubbles. The ink is then removed from the surface.



### Bleaching process (bleaching)

The pulp is bleached with hydrogen peroxide or other bleaching agents.

### Stock preparation process



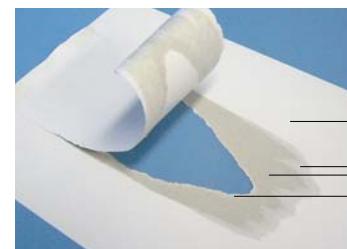
### Papermaking process

white pulp. This is done to avoid excessive bleaching to raise the overall brightness more than needed. All of the remaining layers are also made of recovered paper, and the middle layers are made of recovered paper pulp with a low brightness.

The Oji Paper Group has created more sophisticated technologies for removing ink and other extraneous material in order to maximize use of recovered paper. On the other hand, however, with more processes for removing extraneous material, more energy is consumed. For that reason, making pulp that matches the quality of the recovered paper and using it in the most suitable paper product is the best method for minimizing environmental impact.

We take pride that boxboard manufactured by the Fuji Mill is a model product that meets customers' quality expectations while using the most suitable recovered paper pulp for the most appropriate products.

**Figure 1 Multilayered Structure of Boxboard**



- Layer 1 ..... Ultra-bright deinked recovered paper pulp
- Layer 2 ..... Deinked recovered paper pulp
- Layer 3 & 4 .... Recovered paper pulp that has not been deinked
- Layer 5 ..... Deinked recovered paper pulp

### A link in the chain of paper recycling

#### Aiko Kino

Vice President, Chuo City Environmental Protection Network  
Vice President, Chuo City Consumers Association

I have been separating paper for recycling collection for about 20 years now. Being able to see the place where recovered paper is recycled gave me a real sense that I am an important link in the grand chain of paper recycling.

Worldwide demand for paper is continuing to increase. In order to secure recovered paper as a resource, under-

standing of and cooperation regarding the separation of paper for recycling collection is needed. If producers can deepen their communication with consumers, they will have an easier time joining the recycling chain.



## Making forest recycling tangible

# EcoForest series

Oji Paper's EcoForest series paper products are made from environmentally friendly virgin pulp. All the Oji Paper Group's virgin pulp made from wood raw material is procured in an environmentally responsible manner.

Paper used for the first half of this report (pages 2-25):

## OK TopKote Mat N EF (EcoForest)

\*Outside Japan, the product name is White A Mat EcoForest.

This paper is FSC certified. A forest certification scheme<sup>\*1</sup> is one effective means of promoting forest recycling. The raw material for this paper is wood from certified forests that are properly managed.

<sup>\*1</sup> A forest certification scheme is a system in which independent third-party institutions evaluate and certify that forests are being properly managed.

Forest recycling

# EcoForest series

Paper recycling  
**EcoGreen series**

Environmentally friendly printing paper products

# EcoAge brand

## Making paper recycling tangible

# EcoGreen series

True to our commitment to paper recycling—to recover as much used paper as possible and make maximum use of it—paper in the EcoGreen series is made with a high ratio of recycled paper, 70% or more.

Utilizing recovered paper as a raw material for papermaking reduces urban waste and saves forest resources. It also helps preserve forests, which absorb CO<sub>2</sub> and contribute to the prevention of global warming.

Paper used for the cover of this report

## OK MatKote Green 100

\*Outside Japan, the product name is MatKote Green 100.

The Green 100 series is a 100% recycled printing paper developed by Oji Paper ahead of the rest of the world. It is a product that speaks of our history promoting the popularization of recycled paper.

# Making the Oji Paper Group's Environmental Commitment Tangible

This report is printed on three different kinds of paper. The cover uses 100% recycled paper.

The first half of the report uses paper made from certified forest resources.

The second half features a new paper made from a blend of recycled paper with paper made from certified forest resources.

All of the papers represent forest recycling and paper recycling, made tangible.

We hope that this publication itself gives you a feel for how hard the Oji Paper Group is working to ensure a continued supply of paper while operating with great respect for the global environment.

## Forest and paper recycling **EcoHarmony series**

## Forest recycling and paper recycling become one **EcoHarmony series**

Paper in the EcoHarmony series combines the two concepts of forest recycling and paper recycling.

Paper used in the second half of this report (pages 26-65):  
**NewAge EH (EcoHarmony)**

We blend appropriate ratios of virgin pulp made from wood taken from certified forests with recovered paper pulp for the quality of paper being produced.

### Recovered paper pulp and environmentally friendly virgin pulp are both gentle on the environment.

It is important to make maximum use of recovered paper and to then use an appropriate balance of environmentally friendly virgin pulp<sup>\*2</sup> as the raw material for what cannot be covered by recovered paper alone. In an effort to popularize environmentally friendly products, Japan's Green Purchasing Network (GPN)<sup>\*3</sup> has established guidelines on specific points to consider when purchasing products. In October 2005, however, a discussion among Oji Paper Co., Ltd., other paper companies, paper distribution companies, consumers, and NGOs resulted in the GPN revising its thinking on use of recovered paper to match the understanding of Oji Paper, as shown at right.

#### GPN Guideline Change for Printing and Communication Papers

**Before revision:** High content ratio of recovered paper [considered "green"]

**After revision:** Recovered paper pulp and environmentally friendly virgin pulp blended [considered "green"]

\*2 See note 1 on page 14.

\*3 A loose network of businesses, government agencies, and consumers established in 1996 to encourage green purchasing efforts.

# Initiatives to Combat Global Warming

Oji Paper is moving forward with energy conservation efforts in its production processes with a view to reducing both total primary energy consumption and consumption of fossil fuels.

## Promotion of global warming countermeasures: Targets achieved

### ● Boilers using new energy sources

In its Environmental Action Plan 21, the Oji Paper Group set as targets for the "promotion of global warming countermeasures" a 20% reduction of fossil fuel-based energy consumption per unit of production and a 20% reduction of fossil fuel-derived CO<sub>2</sub> emissions per unit of production by 2010, compared to fiscal 1990 levels. In fiscal 2006, we achieved these targets four years ahead of schedule with a 23.3% reduction in fossil fuel-based energy consumption (graph 1) and a 23.8% reduction in CO<sub>2</sub> emissions per unit of production (graph 2). A major contributor to this achievement was the conversion to non-fossil fuels enabled by

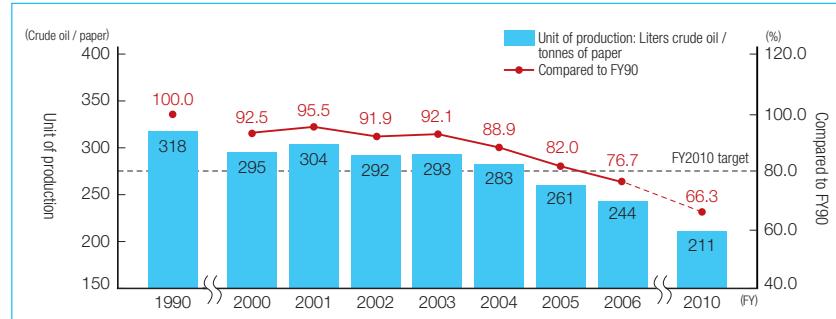
installing boilers that use new energy sources, which we have been gradually putting into operation since 2004.

The Oji Paper Group is making investments to convert from fossil fuels, which are said to be the greatest cause of global warming, to waste-derived fuels (RPF<sup>\*1</sup>, scrap tires, etc.) and biomass<sup>\*2</sup> fuels (scrap wood from buildings, etc.),

neither of which have been often used in the past. Energy from waste products and energy from renewable sources are considered new energies. Boilers that use these energies are called new energy boilers.

Five boilers were up and running by fiscal 2006, and we have plans to put three more boilers into operation in the

Graph 1 Fossil Energy Consumption per Unit of Production<sup>\*3</sup>



Graph 2 Fossil Fuel-Derived CO<sub>2</sub> Emissions per Unit of Production<sup>\*4</sup>

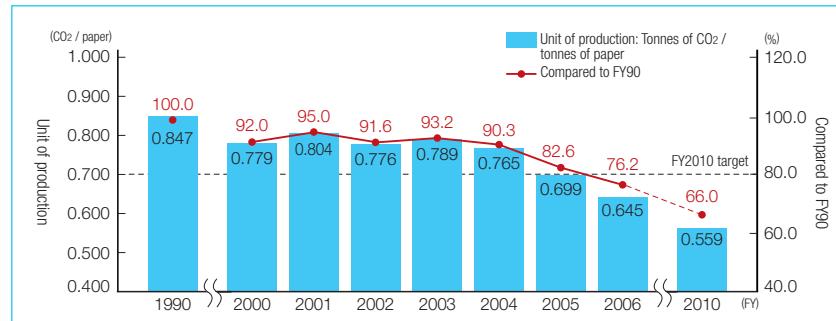


Table 1 Adoption of New Energy Boilers

Mill (location)	Start of operation	Main fuel	Amount of evaporation
Tomakomai Mill, Oji Paper (Hokkaido)	April 2004	RPF	260t/h
Oita Mill, Oji Paperboard (Oita)	May 2004	RPF	200t/h
Yonago Mill, Oji Paper (Tottori)	June 2005	RPF, scrap tires	250t/h
Nichinan Mill, Oji Paper (Miyazaki)	May 2006	Scrap tires, wood	130t/h
Tokai Mill's Shibakawa Facility, Oji Specialty Paper (Shizuoka)	Oct. 2006	Wood	7t/h
Kasugai Mill, Oji Paper (Aichi)	Dec. 2007 (planned)	RPF, scrap tires	140t/h
Tomioka Mill, Oji Paper (Tokushima)	Nov. 2008 (planned)	RPF, scrap plastics	300t/h
Nikko Mill, Oji Paperboard (Tochigi)	End 2008 (planned)	Wood, scrap tires, RPF	70t/h

## VOICE



At first, we had a hard time due to unexpected trouble, since this was the world's first RPF-only boiler. But now it's running fine. We will make an effort to keep it operating steadily so that we can contribute to slowing global warming by reducing use of fossil fuels.

### Yoshinobu Koike

Power Plant, Oita Mill  
Oji Paperboard Co., Ltd.

\* The background image above shows the new energy boiler that was put into operation at the Nichinan Mill in 2006.

future (table 1). We expect these boilers to reduce our fossil fuel consumption by the equivalent of 500,000 kl of heavy oil per year.

### ● Reducing CO<sub>2</sub> emissions from fossil fuels

The Oji Paper Group is determined to continue reducing CO<sub>2</sub> emissions from fossil fuels by switching to non-fossil fuel energy and, when using fossil fuels, using those with a low CO<sub>2</sub> emission factor (such as town gas instead of heavy oil C) (graph 3).

In addition to reducing fossil fuel consumption at production sites, our R&D division is working to find ways to manufacture bioethanol from unused wood. The Oji Paper Group is making a concerted effort to combat global warming.

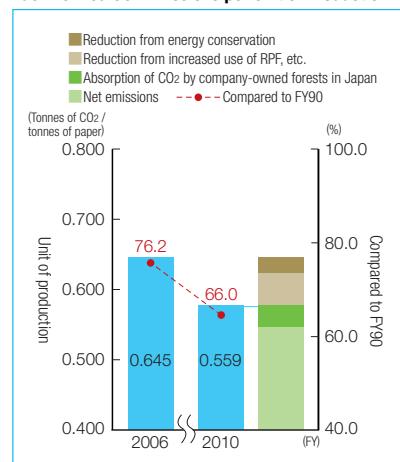
\*1 Japanese-English coinage meaning "Refuse Paper and Plastic Fuel." A solid fuel made by mixing waste plastic with recovered paper that is difficult to recycle.

\*2 See note 4 on page 14.

\*3 Amount of fossil energy consumed per unit of production, calculated by dividing energy consumption by the production amount.

\*4 Amount of fossil energy-derived CO<sub>2</sub> emissions per unit of production, calculated by dividing the emissions by the production amount.

**Graph 3 Forecast for the Reduction of Fossil Fuel-Derived CO<sub>2</sub> Emissions per Unit of Production**



## Characteristics of energy use in the paper industry

### ● The paper industry is one of the largest consumers of energy

Like other basic material manufacturers such as the steel and chemical industries, the paper industry is a major consumer of energy; in fiscal 2005, it accounted for 2% of final energy consumption in Japan and 5% within the industrial sector (graph 4). This high energy consumption is the result of the large amounts of electrical power needed to run manufacturing equipment and the large amounts of heat required to dry the sheets of paper made from pulp that has been dispersed in water. That is why each site supplies the majority of its energy needs through in-house boilers and in-house power generation.

While the paper industry is a major consumer of energy, its energy use is unique in that a large percentage comes from non-fossil fuel sources and in that it has been on the vanguard of the adoption of combined heat and power systems, which produce electricity and utilize the heat produced.

### ● Top grades in biomass fuel use

Looking at the Oji Paper Group's energy composition for fiscal 2006 (graph 5), it is clear that half of its consumed energy came from renewable energy sources and waste products. Among renewable energy sources, our use of black liquor is especially high, accounting for 30% of overall energy sources. We use black liquor, a plant-derived waste liquor

## VOICE



The ultimate target of our work to fight global warming is to become a carbon neutral company—that is, to have zero CO<sub>2</sub> emissions. We are aiming to achieve this goal by using forests to offset the portion of CO<sub>2</sub> emissions derived from fossil fuels that we use to supplement other energy sources for papermaking.

### Harumi Komuro

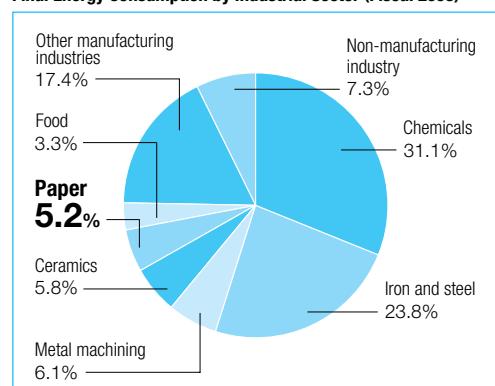
General Manager, Global Warming Affairs Office, Environmental Management Department  
Oji Paper Co., Ltd.

generated when manufacturing pulp from wood chips, as a fuel in special boilers. Black liquor is a biomass fuel peculiar to the paper industry. In fiscal 2003, about 7.7 million kl, on a crude oil conversion basis, of biomass fuels were used in Japan. Of these, as much as 60% was accounted for by the paper industry's black liquor. In view of that, Japan's paper industry is setting an outstanding example in the use of biomass fuel.

### ● A history of using combined heat and power

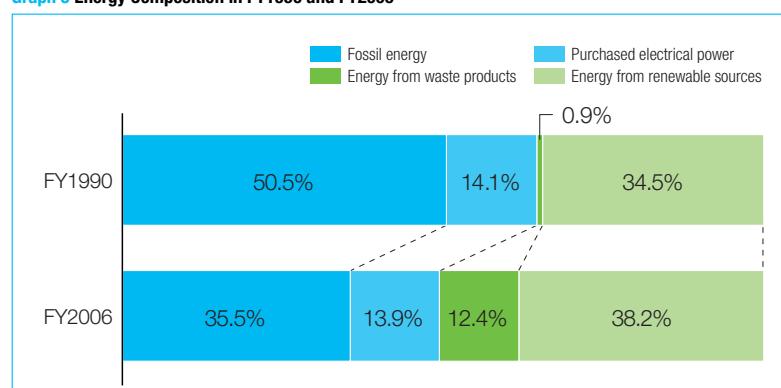
Combined heat and power is a method for utilizing the waste heat (steam)

**Graph 4**  
**Final Energy Consumption by Industrial Sector (Fiscal 2005)**



(Source: Energy Data and Modeling Center [EDMC],  
EDMC Handbook of Energy & Economic Statistics in Japan, 2007)

**Graph 5** Energy Composition in FY1990 and FY2006



generated during energy production as an energy source. It has become recognized as a good means of helping to slow global warming due to the highly efficient use of energy that it enables. The paper industry has been using combined heat and power systems for a long time now in order to use electricity and heat during the papermaking process. Ordinarily, the waste heat remaining after generating electrical power at a thermal power plant is cooled with water and released. This results in an energy efficiency of only about 40%. In contrast, the efficiency of combined heat and power reaches up to nearly 70%, since the waste heat is also used as a heat source during the production process. In this way, although the paper industry is a major consumer of energy, it is an industry that uses a high ratio of non-fossil fuels and uses energy efficiently.

## Promotion of energy conservation: A long-term priority issue

### Efforts to reduce total primary energy consumption

We are making progress in reducing fossil energy consumption through the adoption of new energy boilers and other efforts, but what about total primary energy consumption? The Oji Paper Group has been pursuing energy conservation as a top priority issue for many years.

Comparing primary energy consumption per unit of production for fiscal 1980 and fiscal 1990, we see a substantial reduction of nearly 30% in only 10 years ([graph 6](#)). The primary factor behind this reduction was the adoption of energy conservation equipment in response to

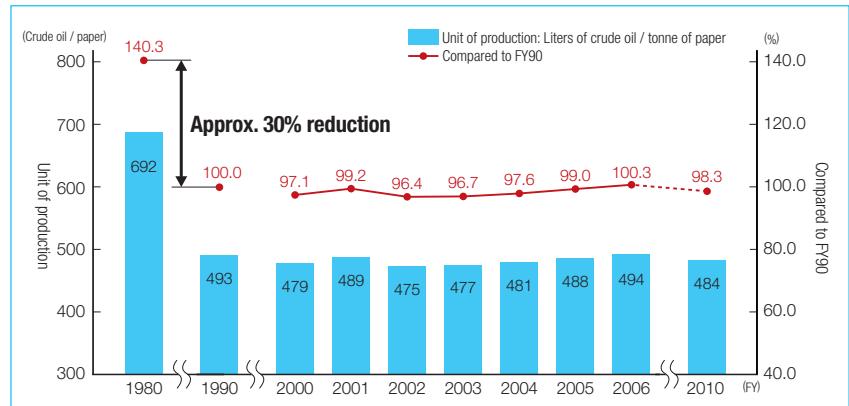
the oil shock of the 1970s. Specific examples include improved efficiency of black liquor recovery boilers, which burn black liquor (a biomass fuel peculiar to the paper industry), and the adoption of highly efficient auxiliaries (motors, fans, etc.).

However, the pace of reduction has slowed since 1990, and our fiscal 2006 performance was nearly equal to that of fiscal 1990. The main cause for this is the fact that the first major stage of investment in potentially effective energy conservation equipment is complete. Additional factors include the enhancement of equipment for improving product quality and for heightening added value, enhancing environmental equipment in response to strengthened environmental regulations, and increased consumption of energy that does not contribute directly to improving production efficiency, such as installing equipment for in-house production of chemicals needed for our manufacturing activities. Every year, we implement energy savings equivalent to 1.0-1.5% of our total primary energy consumption, but the fact is that this effect is usually offset by increases elsewhere.

### Effort to improve production process efficiency

Striving to achieve a breakthrough that will improve our energy conservation results, we share information on new technologies and successful case studies twice a year at an Energy Committee meeting, and have newly strengthened efforts to improve production process efficiency.

**Graph 6 Total Primary Energy Consumption per Unit of Production<sup>5</sup>**



## Renewable Energy and Waste-derived Energy

The Oji Paper Group defines oil, coal, and electrical power purchased from electrical companies as "fossil energy." It considers black liquor, other biomass fuels, and hydroelectric power "renewable energy." RPF (a fuel derived from the waste of products made from fossil resources) and scrap tires are considered "waste-derived energy." The sum of all of these is "primary energy."

As the name implies, renewable energy is a renewable resource. Biomass fuels generate CO<sub>2</sub> when combusted; however,

the CO<sub>2</sub> that is released is the CO<sub>2</sub> that was absorbed during the course of growth. So, from a lifecycle perspective, theoretically this causes no increase in atmospheric CO<sub>2</sub>. This is why biomass fuels are considered carbon neutral.

Using waste-derived energy is also an environmentally responsible practice. In the treatment of waste, Oji Paper prioritizes the 3Rs: reduce, reuse, and recycle. However, when it is technically and economically difficult to do so, combustibles are incinerated rather than buried in

landfills, considering sanitation and waste-reduction issues.

Simply incinerating such waste to dispose of it would result in increased CO<sub>2</sub>. However, using it as an alternative fuel to replace currently used fossil fuels reduces the usage of fossil fuels by a corresponding amount and thus holds down net CO<sub>2</sub>. The government of Japan also recommends using waste-derived energy as a means of reducing consumption of fossil energy.

We are now taking another look at the basics of the production process and setting various benchmarks to allow energy comparisons between sites. By thoroughly managing every detail of production, we are also looking to improve the efficiency of the production process at all sites.

The truth of the matter is that reductions in total primary energy consumption cannot be realized without the gradual accumulation of these modest, site-based efforts. What is more, one cannot expect a sharp reduction in total primary energy consumption without great innovations. Development of innovative technology must be undertaken beyond the confines of the paper industry through long-term cooperation between industry, government, and academia.

<sup>\*5</sup> Amount of energy consumed per unit of production, calculated by dividing total energy consumption by the production amount.

## Contributing to the global environment through overseas tree plantations

### ● Absorption of CO<sub>2</sub> by our tree plantations outside Japan reaches 6.22 million tonnes

Tree plantations contribute to the prevention of global warming, because trees sequester CO<sub>2</sub>. The amount of CO<sub>2</sub> sequestered by the Oji Paper Group's plantations outside Japan in fiscal 2006 is estimated at 6.22 million tonnes of CO<sub>2</sub>. This figure reaches a total of 7.37 million tonnes of CO<sub>2</sub> per year when the group's company-owned forests in Japan are included.<sup>\*6</sup>

The Oji Paper Group has studied afforestation based on the Clean Development Mechanism (CDM)<sup>\*7</sup> under the Kyoto Protocol. Last year, we submitted a required Proposed New Methodology<sup>\*8</sup> to the CDM Executive Board. The proposal was officially approved at the 33rd meeting of the CDM Executive Board on July 27, 2007. This methodology is used to measure carbon dioxide credits created through afforestation activities, the purpose of which is sustainable forest production. It is also the world's first methodology to emerge from the paper industry. In Madagascar, which we studied as a location for a CDM afforestation project (photo 1), desolate grasslands are

## Team Minus 6% Initiatives Employees Submit Reports on Environmental Action at Home

### Sustainable Management Office

As a Team Minus 6%<sup>\*9</sup> initiative during the summer of 2006, we ran an employee contest, asking them to submit reports on the environmental actions they took at home in order to encourage everyone on the Oji Paper team to join in the fight against global warming.

Toshie Shiraishi of Oji Nipia's customer service office, who won the grand prize, visited our APFL tree plantation in Western Australia and said, "I knew that tree plantations involved an ongoing cycle of planting and harvesting trees, but now I know that they also help slow global warming as the trees absorb CO<sub>2</sub>, a greenhouse gas, while they grow."



Shiraishi (center) at APFL.

<sup>\*9</sup> A national campaign to combat global warming. Sixteen companies and one organization from the Oji Paper Group participate as team members.



Photo 1 CDM afforestation project study in Madagascar.

spreading due to excessive logging for fuel wood and slash-and-burn agriculture. By creating sustainably managed forests on otherwise barren lands, the Oji Paper Group's afforestation project is expected to help slow global warming and contribute to society and the environment in Madagascar, while also generating raw material for papermaking.

### \*6 Calculation

CO<sub>2</sub> absorption = area x growth x specific gravity x carbon content in wood x scaling factor x CO<sub>2</sub> equivalent,  
\*where annual growth = 3.9 m<sup>3</sup>/ha in Japan and 25 m<sup>3</sup>/ha outside Japan

\*Specific gravity = 0.5 t/m<sup>3</sup> • Carbon content in wood = 0.5

\*Scaling factor = 1.7 • CO<sub>2</sub> equivalent = 44/12

Scaling factor: Factor used when calculating the absorption for all wood, including unused parts such as branches, leaves, and roots, as opposed to the absorption for just the trunk (growth), which is the part of logged timber that is used industrially.

<sup>\*7</sup> See note 2 on page 10.

<sup>\*8</sup> CDM project applications must use a methodology (method for measuring the absorption or reductions of emissions of greenhouse gases such as carbon dioxide) approved by the CDM Executive Board. A proposed new methodology must be submitted to the CDM Executive Board for approval if there is no appropriate existing methodology.

## Comprehensive evaluation of CO<sub>2</sub> emissions: Expanding CO<sub>2</sub> sequestration by plantations

While the Oji Paper Group emits CO<sub>2</sub> from its facilities, the trees on its company-owned forests in Japan and plantations outside Japan sequester a great deal of CO<sub>2</sub>. We make it our practice, therefore, to comprehensively evaluate our gross CO<sub>2</sub> emissions from the manufacture of pulp and paper and the sequestration of CO<sub>2</sub> by our trees (graph 7).

The evaluation of gross CO<sub>2</sub> emissions includes Oji Paper, Oji Paperboard, Oji Specialty Paper and Oji Nepia, which manufacture paper in Japan, and Pan Pac and CENIBRA, which produce pulp outside Japan and supply it to the companies in Japan. The CO<sub>2</sub> emitted from these companies' facilities is derived from fossil fuels as well as waste and

renewable energy sources. After the paper we produce is utilized as recovered paper, it will eventually no longer be reusable due to quality deterioration. Accordingly, we also include the amount of CO<sub>2</sub> that will be emitted when this paper is incinerated, considering the fact that it will likely be burned as some point.

We estimate our net CO<sub>2</sub> emissions as the difference between gross CO<sub>2</sub> emissions and the amount of CO<sub>2</sub> that is sequestered during the growth of trees at our company-owned forests in Japan and plantations outside Japan. In fiscal 2006, our company-owned forests in Japan and plantations outside Japan sequestered about 40% of the amount of our gross CO<sub>2</sub> emissions. We forecast that this figure will reach about 70% by fiscal 2010 as our overseas plantations expand.

From a global perspective, our net CO<sub>2</sub> emissions represent the actual amount of

CO<sub>2</sub> emitted by the Oji Paper Group. We project that our fiscal 2010 net CO<sub>2</sub> emissions will drop to a third of the 1990 level.

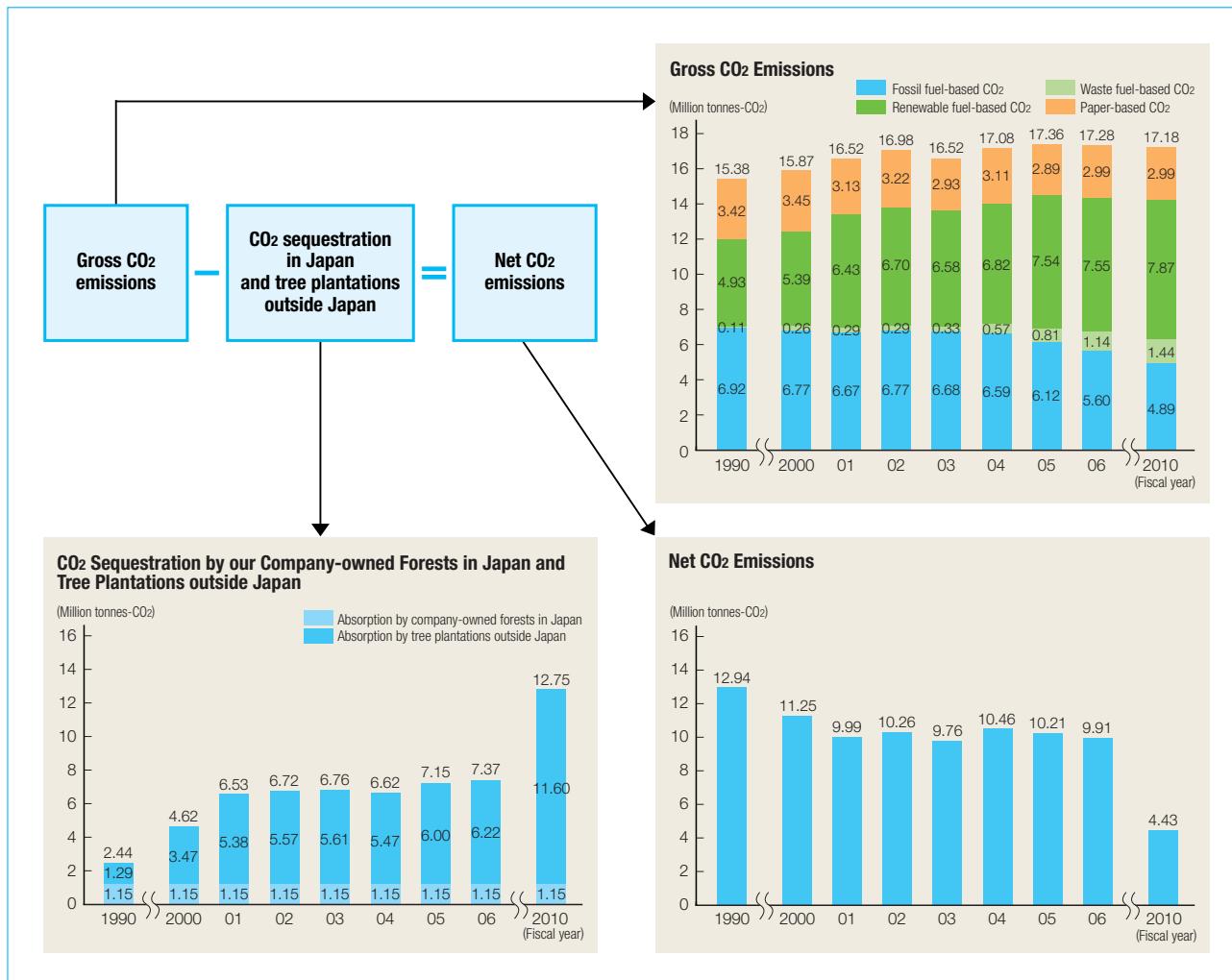
The Oji Paper Group is determined to steadily move forward with global warming countermeasures through sustainable forest management at our company-owned forests in Japan and plantations outside Japan.

## Shifting modes of transport to reduce CO<sub>2</sub> emissions from distribution

### ● Enforcement of Japan's revised Energy Conservation Law (Designation as a specified consigner)

Japan's revised Energy Conservation Law took effect in April 2006. In an effort to encourage further reductions of carbon dioxide (CO<sub>2</sub>) and other greenhouse gases, the revised law expanded the

Graph 7 Evaluation of CO<sub>2</sub> Emissions



coverage of regulations—which until now were addressed to factories and business sites—to include the distribution field. In compliance with the revised law, the Oji Paper Group submitted reports on its fiscal 2006 tonne-kilometer CO<sub>2</sub> emissions to the Kanto Bureau of Economy, Trade and Industry ([table 1](#)). Based on these reports, on June 14 the Oji Paper Group was designated as a specified consigner,<sup>\*10</sup> which has specific obligations under the revised law. We are now required to start submitting energy consumption reports by the end of September 2007 and to draw up an energy conservation plan with the objective of reducing fiscal 2007 energy consumption per unit of production by 1% relative to the previous fiscal year.

The Oji Paper Group is making efforts to reduce its energy consumption per unit of production through energy conservation measures, focusing on modal shift<sup>\*11</sup>, or changing modes of transport to improve efficiency.

#### ● Modal shift and other energy conservation measures

There are several ways to reduce the environmental impact of transportation

and deliveries, including improving distribution efficiency through modal shift, joint distribution, and use of large vehicles; selecting appropriate distribution companies; and improving driving performance, such as through eco-driving.

Modal shift is the most efficient means for the Oji Paper Group, which has a transport network throughout Japan, to work on conserving energy and reducing CO<sub>2</sub> ([graph 8](#)). The Oji Paper Group has already made a considerable modal shift effort, but it will go to the next level in pursuing modal shift in an effort to help reduce CO<sub>2</sub> further.

We are also pursuing Green Management Certification<sup>\*12</sup> as a means of strengthening our efforts in truck transport. Except for newly established business sites, all sites have acquired certification (13 sales offices as of May 11, 2007).

As part of this initiative, we are pursuing specific measures, such as targets we set for fuel economy improvement. In fiscal 2006, we installed a digital tachograph in all company vehicles (260 vehicles as of May 11, 2007; [photo 2](#)). This has enabled us to gather driving data



**Photo 2** A digital tachograph like the ones installed in our entire vehicle fleet to collect driving data.

such as speed and route information, which allows us to ascertain fuel economy improvements and the specific effects of safe driving and economical driving. We will continue working to make further environmental improvements by promoting eco-driving and encouraging heightened awareness among drivers.

<sup>\*10</sup> A freight consigner with 30 million tonne-kilometers or more of annual freight volume, calculated by multiplying the freight (in tonnes) by the distance shipped (in kilometers).

<sup>\*11</sup> The shifting of the means of transport from trucks, which have high CO<sub>2</sub> emissions, to rail and ship, which have a lower environmental impact.

<sup>\*12</sup> A certification and registration system designed to decrease environmental impact in the transportation industry through independent environmental conservation activities pursued by trucking companies. Different from the ISO 14001 certification system, the results of environmental improvement efforts are examined under this scheme

**Table 1** Weight Transported (Fiscal 2006)

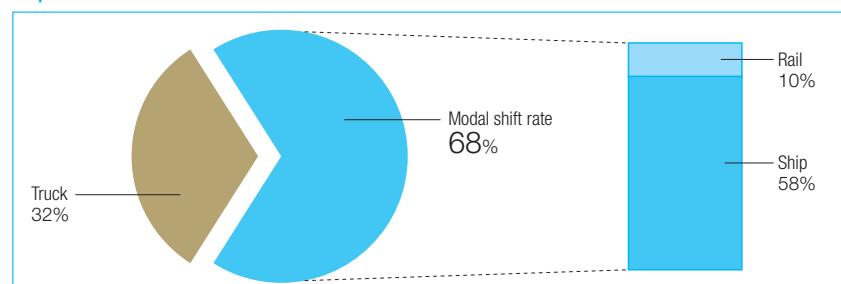
Company	Weight transported (Million tonne-kilometers)
Oji Paper Co., Ltd.	3,222
Oji Paperboard Co., Ltd.	866
Oji Specialty Paper Co., Ltd.	195
<b>Total</b>	<b>4,283</b>

**Table 2** Environmental Impact of Group's Product Transportation

	Weight transported (1,000 tonnes)	Average distance transported (km)	Weight x distance (Million tonne-kilometers)	CO <sub>2</sub> emissions (1,000 tonnes)
<b>Ship</b>	2,556	978	2,500	100
<b>Rail</b>	546	773	422	8
<b>Automobile</b>	8,410	162	1,361	476
<b>Total</b>	<b>11,512</b>	<b>372</b>	<b>4,283</b>	<b>585</b>

\* Data compiled in accordance with revised Energy Conservation Law

**Graph 8** Modal Shift Rate



#### VOICE



We are working to shift modes of transport by establishing a sea-based mass transportation system from the Tomioka Mill. We are helping to reduce environmental impact through efficient cargo handling, unloading freight directly at the company pier and putting it straight into warehousing.

#### Keizo Sato

Branch Manager, Urayasu Office,  
Eastern Japan Business Division  
Oji Logistics Co., Ltd.

# The Oji Paper Group has inherited a corporate philosophy rooted in the ethos of the company's founder, Eiichi Shibusawa.

## The foundation of Oji Paper's business operations

The founder of Oji Paper, Eiichi Shibusawa, frequently used two words—*rongo* (the Analects of Confucius) and *soroban* (abacus)—to emphasize the importance of consistently combining good ethics with profitable business practices. The Oji Paper Group has incorporated this ethos into its Corporate Philosophy and its Corporate Code of Conduct, which is the guideline for action to realize the Corporate Philosophy. We have also established the Behavior Standard as basic standards that each employee should follow. Further, the Corporate Code of Conduct makes respecting the environment a management priority. Accordingly, we established the Oji Paper Group Environmental Charter and the Environmental Action Plan 21, which sets quantitative targets to be achieved by fiscal 2010, to ensure that we strike a responsible balance with the needs of the global environment in all of our corporate activities.

## Corporate Philosophy

### Contribution to the Environment and Culture Innovation and Speed Global Reputation for Dependability

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.

## Oji Paper Group Corporate Code of Conduct

### Oji Paper Group Environmental Charter Environmental Action Plan 21 (page 45-46)

## Oji Paper Group Behavior Standard (Compliance with laws and regulations)

## Global Compact<sup>\*1</sup>

In June 2003, the Oji Paper Group became a member of the United Nations Global Compact. We then wrote the spirit of the Global Compact into the Oji Paper Group Corporate Code of Conduct and Behavior Standard, and we strive to put both into practice in all of our daily operations. The Global Compact requires participating companies and organizations to uphold and practice ten principles in the areas of human rights, labor, the environment, and anti-corruption. Its membership includes about 4,907 companies and organizations from around the world, of which 52 are Japanese (as of June 15, 2007).



## WBCSD

The Oji Paper Group participates in the World Business Council for Sustainable Development (WBCSD; photo 1), where it addresses issues faced by the forestry industry, such as establishing forest certification systems and preventing illegal logging, as well as the role companies

should play in steering the world toward sustainable development and helping to counter global warming. The WBCSD is engaged in issuing guidelines for sustainable development founded on three core concepts: economic growth, environmental preservation, and social justice.



World Business Council for Sustainable Development



Photo 1 WBCSD meeting held in March 2007.

### \*1 Global Compact

An initiative proposed by United Nations Secretary General Kofi Annan in 1999 and officially inaugurated at UN Headquarters in New York in 2000.

## 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.

<b>1</b>	<b>Compliance with the law</b> 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.
<b>2</b>	<b>Harmony with the environment</b> 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.
<b>3</b>	<b>Supply of safe, useful products and services</b> 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.
<b>4</b>	<b>Communication with society</b> We will establish relationships of trust with all stakeholders, including customers, shareholders, and local residents, through an active commitment to good communication with society.
<b>5</b>	<b>Participation in social contribution activities</b> We will contribute to the development and improvement of society through active participation in social contribution activities.
<b>6</b>	<b>Coexistence with the international community</b> We will respect the culture and customs of other countries and contribute to local communities.
<b>7</b>	<b>Contribution through manufacturing</b> 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.
<b>8</b>	<b>Achievement of employee satisfaction</b> 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.

## Oji Paper Group Behavior Standard

- I. Toward the materialization of the spirit of Oji Paper Group Corporate Code of Conduct, the Oji Paper Group Behavior Standard is adopted as a standard to be followed in the daily activities of all management and employees.
- II. All management and employees should recognize to be responsible for following this Behavior Standard and must not act against this standard.

<b>Relationship with society</b>	<b>Relationship with shareholders and investors</b>
1) Compliance with relevant business laws 2) Environmental conservation 3) Ensuring safety 4) Sensible action 5) Wholesome relationship with politics and government 6) Severance of relationships with antisocial groups and organizations 7) Coexistence with the international community	13) Disclosure of management information 14) Prohibition of insider trading
<b>Relationship with customers, business partners, and competitors</b>	<b>Relationship with employees</b>
8) Seeking a relationship of trust with customers 9) Maintenance of an honest, wholesome relationship with business partners 10) Compliance with laws and regulations related to the Anti-monopoly Act and the Act 11) Prohibition of unfair competition 12) Compliance with laws and regulations related to importing and exporting	15) Respect of human rights 16) Ensuring safety and health in the workplace 17) Fulfillment of duties and self-development
<b>Proactive communication</b>	<b>Relationship with the company</b>
	18) Compliance with company rules 19) Management of company secrets 20) Appropriate records and accounting 21) Appropriate use of computer systems 22) Maintenance of company assets 23) Prohibition of conflicts of interest 24) Prohibition of political and religious activities in the workplace
	<b>Open working environment</b>

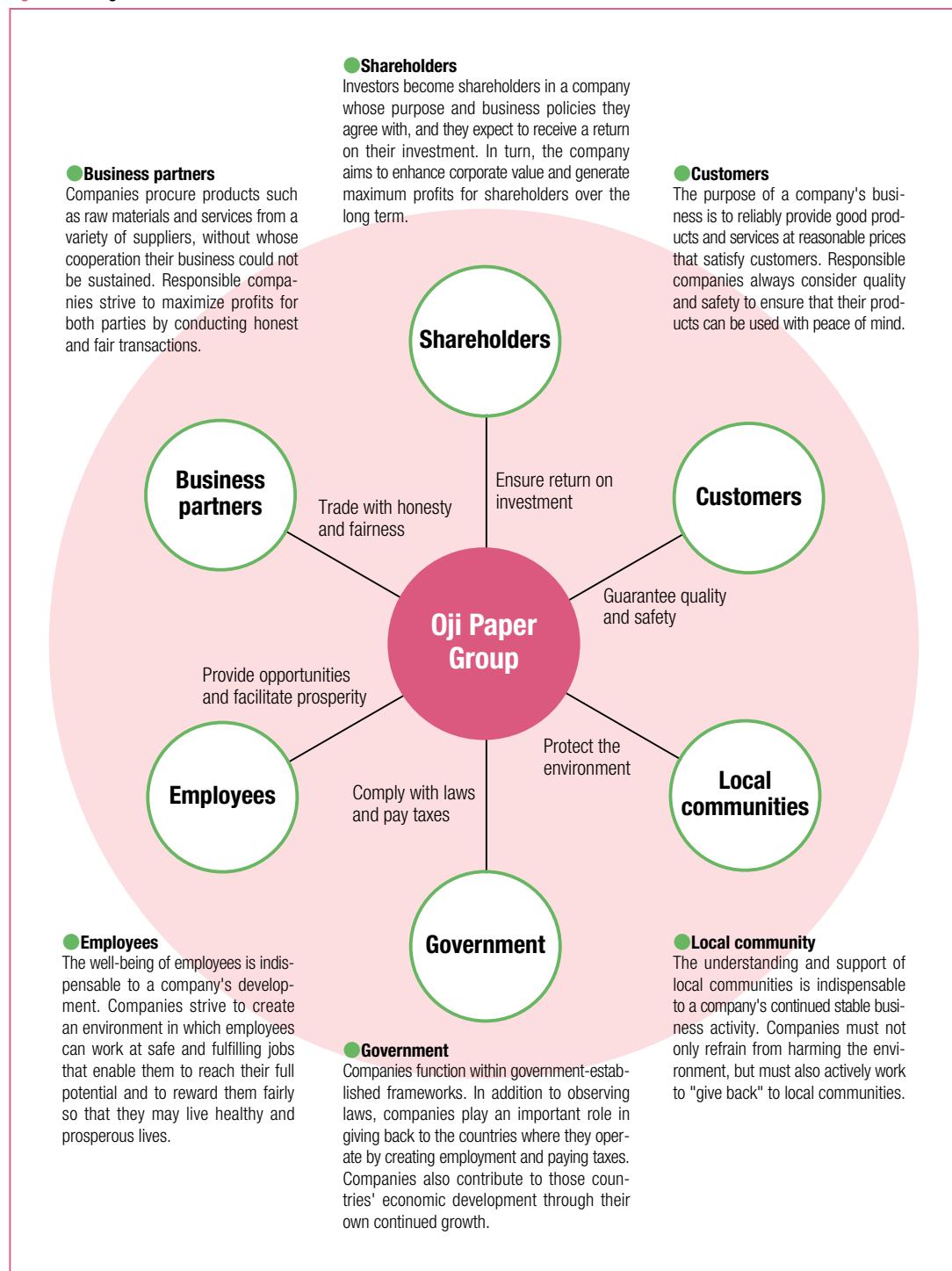
## Relationships with Stakeholders

Trusting relationships (figure 1) with corporate stakeholders are indispensable to every company's continued existence and development.

When Eiichi Shibusawa founded Oji Paper in 1873, he used two words—*rongo* (the Analects of Confucius) and *soroban* (abacus)—to define the

company's ethical commitment to developing the Japanese economy. Oji Paper has never forgotten its mission as a public institution, and has endeavored to build trusting relationships with all stakeholders. We remain dedicated to satisfying the expectations of our diverse stakeholders, and understand the importance of coordinating their sometimes conflicting interests to ensure a fair and mutually acceptable balance. True to the basics of our commitment to society, we are now striving to regain the full trust of all stakeholders.

Figure 1 Earning the Trust of All Stakeholders



The Oji Paper Group is working to earn the full trust of society by strengthening its corporate governance and compliance.

### Corporate governance<sup>\*1</sup>

At Oji Paper, key management issues are deliberated by the Executive Council, which is comprised of directors who also serve as executive officers, and final decisions are taken by the 12-member Board of Directors, which includes two outside directors. Officers with business expertise are responsible for the implementation of decisions made by the Board of Directors. All of these activities are audited by four auditors, two of whom are external (figure 1).

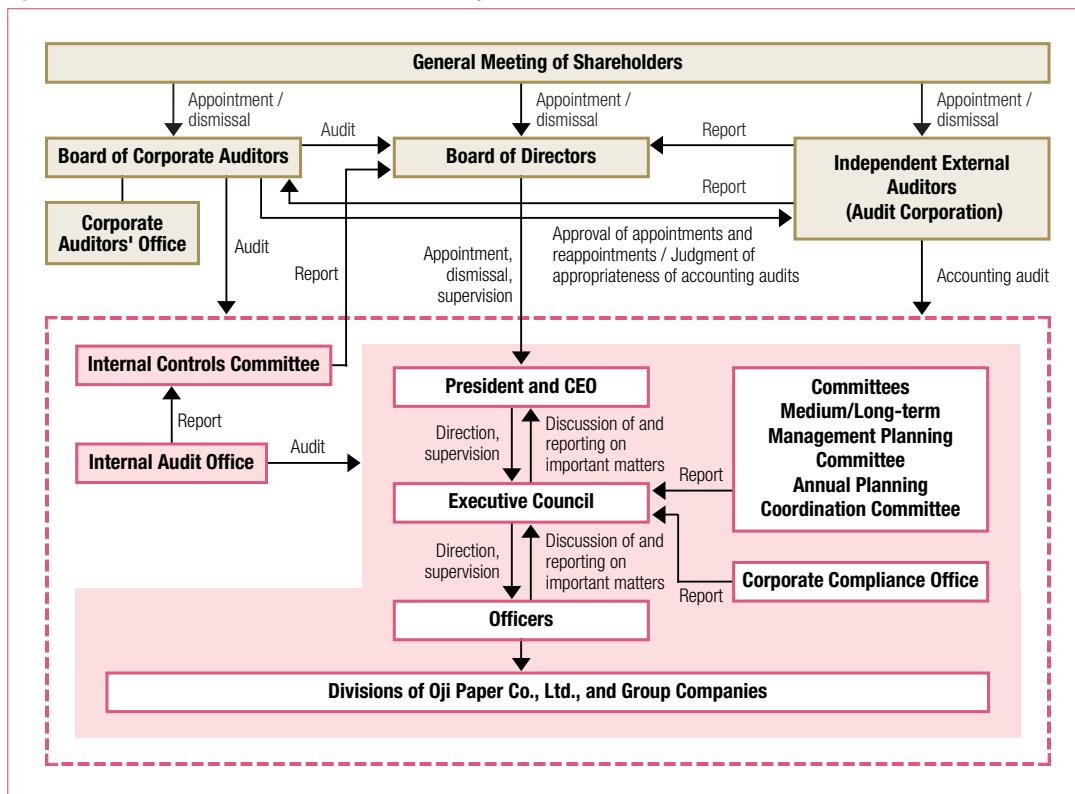
To create incentives for management to improve corporate value, we have adopted stock-option-based compensation for directors, thus linking compensation with company performance.

The Oji Paper Group's Corporate Code of Conduct declares that the president and all group employees shall put into practice the fundamental values of the

founder of Oji Paper, Eiichi Shibusawa, who frequently emphasized the need to combine good ethics with profitable business practices. We have also created an Internal Controls Committee, which established the Basic Guidelines for Building an Internal Controls System. This system ensures that high ethical standards are maintained and that legal compliance and appropriate risk management are integrated into all business activities.

In line with the Basic Guidelines, the Internal Audit Office, which is independent from business-execution organizations, audits their compliance<sup>\*2</sup> and risk management. Audit results are reported to the Internal Controls Committee, which is tasked with verifying and assessing responses to major risks related to internal controls and monitoring the functionality of internal controls systems. We believe this commitment to efficient, sound, and transparent management is vital to earning the trust of society and realizing sustainable growth.

Figure 1 Function of the Internal Controls Committee in the Corporate Governance Framework



#### \*1 Corporate governance

A system for preventing the occurrence of misconduct by ensuring management transparency, soundness, and legal compliance through the clarification of responsibilities for executives and managers at all levels and the disclosure of corporate information.

#### \*2 Compliance

Legal compliance. Ensuring strict, thorough organizational compliance with laws and regulations is vital.

## Compliance framework

In January 2004, the Oji Paper Group built a new compliance framework (figure 2), and has been taking steps to ensure that employees comply with the Corporate Code of Conduct and the Behavior Standard.

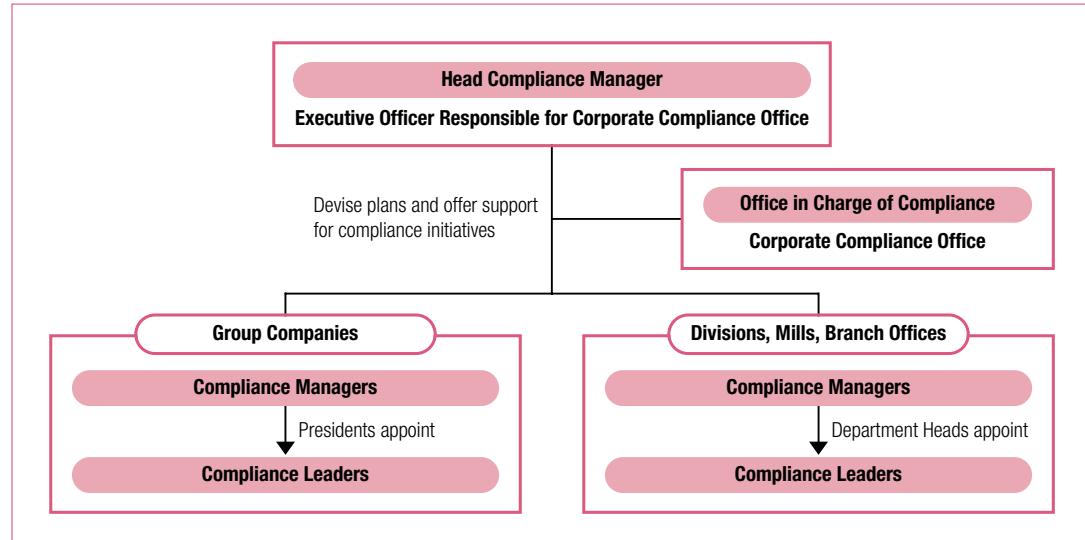
## Compliance education

To further raise awareness of compliance issues, in fiscal 2006 we introduced mandatory compliance meetings for all employees, adding to our ongoing rank-based training programs (photo 1) and e-learning system for legal study. With 87% participation (19,149 employees), we achieved our goal of 80% participation. We believe the experience has heightened employees' awareness, and will continue to hold these meetings next fiscal year.



Photo 1 Shoichiro Suzuki, Chairman of the Board, delivers a lecture at a Compliance Leader Training session held in October 2006.

Figure 2 Compliance Organization



An introduction to new laws and ordinances is provided on our intranet. Other learning materials include a small booklet that provides the latest information with examples, as well as quizzes, case studies, and various teaching aids. These efforts demonstrate Oji Paper's commitment to raising employee awareness and ensuring full legal compliance.

## Business ethics helpline

Oji Paper's business ethics helpline provides all group employees and executives with contacts for consulting about or reporting violations of laws and misconduct (including work-related and sexual harassment issues). The goal of the helpline is to prevent such incidents or correct them through early detection. In September 2003, the Oji Paper Group set up two contact points: internally, the Corporate Compliance Office, and externally, an attorney at law. In fiscal 2006, 28 incidents were reported or consulted about, and appropriate measures were taken in all cases.

### VOICE

Under the leadership of the division managers, we address compliance at regular company training sessions and at meetings. Our goal is to instill a heightened awareness and sense of responsibility for compliance in every employee.



**Masaki Tomatsu**

Director and Compliance Leader  
Oji Engineering Co., Ltd.

## Building a disaster prevention system to ensure an effective response to any disaster

The Oji Paper Group's disaster prevention system features a clear chain of command, with the lead disaster prevention manager for the Oji Paper Group positioned at Oji Paper Co., Ltd., and disaster prevention managers appointed at each facility of every group company. To support these managers, there is also a Disaster Prevention Committee at Oji Paper Co., Ltd. The committee deliberates on basic policies for group-wide disaster prevention management. In addition, disaster prevention leaders meetings are held at each group company, and disaster prevention inspections conducted at each site (figure 3).

Protecting the lives of employees is our highest priority in the event of a disaster. Meeting clients' expectations while mitigating damage is another of our corporate social responsibilities. Accordingly, we have established the Oji Paper Group Comprehensive Disaster Prevention Regulations, which specify the basics of our disaster prevention system.

In accordance with these regulations, each group site has prepared business- and community-appropriate Comprehensive Disaster Prevention Rules and implemented disaster prevention education and drills (photo 2).

**Figure 3** Oji Paper Group's Disaster Prevention Organization



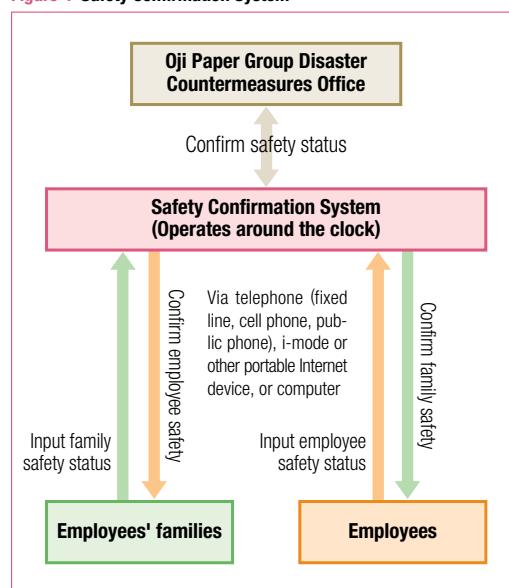
**Photo 2** The Oji Paper Kanzaki Mill Team came in first place in the fire extinguisher operation category at the Amagasaki City Fire Fighting Competition (October 2006).

## Earthquake disaster prevention: Expanding the Safety Confirmation System

With many facilities located in earthquake-prone Japan, Oji Paper has an advanced earthquake disaster prevention system. Examples include the company's Emergency Code of Behavior for use in the event of an earthquake, the implementation of safety confirmation drills using a Safety Confirmation System (figure 4), and an information management system built in accordance with anticipated risks. The Safety Confirmation System was launched in March 2005, and has now been adopted by 35 group companies, with nearly 16,000 persons registered. Plans call for the system to be adopted throughout the group.

Going forward, we will continue to enhance our disaster risk management system while working to reduce risk and prepare for potential disasters at all group companies.

**Figure 4** Safety Confirmation System



### VOICE

Our mill is located in the fault plane where the next major Tokai earthquake is expected to take place. Accordingly, we are constantly pursuing disaster prevention measures, implementing early-phase firefighting drills and conducting fire extinguishing training. We participate every year in a competition for small pump operation\*1 sponsored by the local fire protection association. In fiscal 2006, we placed third.



### Hiroshi Tsukiji

Power Plant, Fuji Mill  
Oji Paperboard Co., Ltd.

\*1 **Small pump operation**  
Firefighting procedures including water supply from a firefighting tank, hosing of a target called the ignition point, and safe disengagement.

## These pages present the status of Oji Paper's efforts to meet society's expectations in the area of corporate social responsibility.

In February 2007, the team that prepared this *Oji Paper Group Environmental and Sustainability Report* conducted a formal review to determine to what extent the Oji Paper Group's activities are meeting society's expectations in various areas of CSR (table 1). Here, we report on the main CSR activities of Oji Paper Co., Ltd. A separate progress report on the Oji Paper Environmental Action Plan 21 appears on pages 45-46.

**Table 1 Status of Oji Paper's Efforts on CSR Issues**

Item	CSR issue	Status
Management	Oji Paper Group's CSR management	<ul style="list-style-type: none"> <li>● Policies have been made explicit in the Corporate Code of Conduct<sup>*1</sup> and Behavior Standard<sup>*2</sup>.</li> <li>● CSR activities that suit the nature of the company's business are implemented, such as pursuing the compatible goals of securing raw materials and absorbing CO<sub>2</sub> through tree plantations, and the marketing of environmentally friendly products.</li> </ul>
	CSR management of the supply chain	<ul style="list-style-type: none"> <li>● In April 2007, the company started CSR procurement based on its Partnership Procurement Policy.</li> </ul>
	Legal compliance	<ul style="list-style-type: none"> <li>● The Corporate Compliance Office conducts compliance awareness surveys of all executives and employees. Further, all employees are required to participate in a compliance meeting every six months to raise compliance awareness and to identify possible compliance risks.</li> </ul>
	Prevention of acts of unfair competition	<ul style="list-style-type: none"> <li>● Ongoing education is conducted for officers and executive officers by corporate attorneys.</li> </ul>
	Establishment and observance of a corporate code of ethics	<ul style="list-style-type: none"> <li>● The company has established the Corporate Code of Conduct, which makes explicit its basic values and corporate philosophy, as well as the Behavior Standard, which serves as a practical guideline for putting the Code of Conduct into practice.</li> </ul>
Response to disasters	Disaster prevention measures	<ul style="list-style-type: none"> <li>● The Oji Paper Group Comprehensive Disaster Prevention Regulations have been established, and information on disaster prevention measures is shared through a Disaster Prevention Committee and disaster prevention leaders meetings.</li> </ul>
Economic efficiency	Development of strategies that capitalize on the company's unique characteristics	<ul style="list-style-type: none"> <li>● The company supplies environmentally friendly paper by pursuing a recycling-based business model.</li> </ul>
	Development and provision of products and services with universal design specifications	<ul style="list-style-type: none"> <li>● The company develops papers with a quality of whiteness and gloss designed to give a peaceful impression to human sensibilities while possessing a supple resilience that makes turning pages easy.</li> </ul>
	Customer satisfaction	<ul style="list-style-type: none"> <li>● For each complaint channel, a system has been developed for receiving and investigating complaints, issuing reports in and outside the company, and making improvements.</li> </ul>
	Ensuring product/service safety	<ul style="list-style-type: none"> <li>● To ensure product safety, a pre-examination system for raw materials (New Raw Material Safety Sheets) has been established and the information is continually updated following the examination.</li> </ul>
	Response when product/service accidents or trouble occur	<ul style="list-style-type: none"> <li>● A system that can respond to quality and other trouble has been put in place through the parallel establishment of a sales department and technical services department in each business division.</li> </ul>
	Customer information management	<ul style="list-style-type: none"> <li>● An information security policy has been established, and a system for protecting and managing information assets has been developed.</li> </ul>
	IR activities	<ul style="list-style-type: none"> <li>● Financial information is appropriately disclosed at results briefings, and business briefings, investor forums, and individual meetings with institutional investors are held.</li> </ul>
Social performance	Intellectual property rights	<ul style="list-style-type: none"> <li>● The company strives to realize inventions, respond to patent offices, and register and exercise rights by placing people in charge of patent applications, registration of rights, and utilization of rights in each technology field, and through OJT and patent review sessions together with patent managers from the invention department.</li> </ul>
	Respect and protection of human rights	<ul style="list-style-type: none"> <li>● The company participates in the United Nations Global Compact.</li> </ul>
	Stance and efforts on the protection of human rights	<ul style="list-style-type: none"> <li>● The company educates employees, and expects them to carry booklets containing the Corporate Code of Conduct and Behavior Standard and to put them into practice.</li> </ul>
	Prohibition against compelling local residents in areas where the company invests to move	<ul style="list-style-type: none"> <li>● The Behavior Standard makes clear that the company shall protect human rights, operate in accord with international norms, and treat local communities with sincerity.</li> </ul>

<sup>\*1</sup> **Corporate Code of Conduct**

See pages 33-34 for details on the Oji Paper Group Corporate Code of Conduct.

<sup>\*2</sup> **Behavior Standard**

See pages 33-34 for details on the Oji Paper Group Behavior Standard.

Item	CSR issue	Status
Social performance	Respect and protection of human rights	● The company conducts its activities in line with the spirit of human rights protection, participates in the United Nations Global Compact, and has enshrined its commitment to human rights in its Behavior Standard.
	Labor relations	● The company guarantees the three rights of labor and makes use of dialogues with labor unions in business management in line with the five principles of its labor agreement: (1) respect for independence, (2) communication, (3) peaceful solutions, (4) proper impartiality in personnel affairs, and (5) improvement and optimization of labor conditions.
	Prohibition of discrimination in and outside the company	● In line with the labor agreement, the company has established a Complaint Response Committee, and deployed persons in charge of human rights issues to serve as contact points for complaints consultation at each facility. It has also set up a helpline through which acts of discrimination can be reported.
		● In addition to having a policy of prohibition against these acts of discrimination and participation in discrimination, the company conducts its operations based on the five principles (described above) of the labor agreement.
	Respect of diversity	● The Behavior Standard stipulates that the company shall comply with each country's laws and ordinances, respect social norms, culture, and customs, and contribute to the development of local communities.
	Consideration for gender equality	● The company has established regulations for childcare/nursing leave, and reinstates employees to their existing post after completion of the term of leave. ● In the case of leave for non-occupational injury or illness, the company decides whether to reinstate the employee, assuming full recovery and in light of the opinion of an industrial physician.
		● The company conducts its operations based on the five principles (described above) of the labor agreement.
		● The helpline and human rights staff are prepared to respond to any sexual harassment issue.
	Occupational safety and health / employee benefits and welfare	● The company has adopted a system that enables employees to change occupational categories. It also covers expenses for home leave for employees posted away from their families.
		● The company has adopted a reemployment system for employees who have reached retirement age, and has also started labor-management consultations on raising the standard retirement age to 65.
		● The company has adopted an occupational safety and health management system, takes work environment measurements, conducts special health examinations, and provides mental health consultations.
	Protection of employee privacy	● The company has established regulations for the protection of personal information and manages employment information under the direction of a manager in charge of personnel affairs at each facility. ● When there are outside inquiries about the personal information of employees, the Human Resources Headquarters acts as the liaison, checks the intended use of the information, and ensures the matter is handled appropriately.
	Human resources development and personnel evaluation system	● The company has adopted a system that enables employees to change occupational categories with a view to realizing their full potential. It also conducts various rank-based educational programs and provides education and training for the next generation of executives. ● To ensure the impartiality of evaluations, the company has established a system of secondary evaluations by operations managers and work managers, and provides training and education on how to conduct these evaluations.
	Employee satisfaction	● The company holds discussions with young employees through its Junior Board program. ● It also conducts questionnaire surveys on its environmental and sustainability report and the Behavior Standard.
	Appropriate relationships with lawmakers and public servants	● The company holds regular training sessions on compliance-related laws and ordinances to ensure that employees observe them.
		● Oji Paper makes contributions to political parties and political fund-raisers in accordance with the standards of Nippon Keidanren (Japan Business Federation) and the Japan Paper Association, of which it is a member.
	Social contributions	● The company welcomes visitors for mill tours (about 800 times per year), conducts groundwork activities, holds the Oji Forest Nature School at a company-owned forest in cooperation with the Japan Environmental Education Forum, and conducts other activities that make use of the nature of its business. ● It also provides financial assistance to the Fujihara Foundation of Science, which supports the development of science and technology in Japan.
		● Employees can take time off as a bone marrow fluid donor for bone marrow transplants when going to register at the bone marrow bank, when going for the necessary screening tests, and when checking into the hospital.
Dialogues with the local community and NGOs/NPOs	Dialogues and cooperation with local residents and Japanese and foreign NGOs/NPOs	● In 2004, Oji Paper established the NPO Mori no Uta ("Song of the Forest"), which conducts social contribution activities. ● The company invites residents who live near its mills to become environmental monitors, and holds environmental monitor meetings.
Contributions to the international community	Active effort to solve global problems (loss of tropical rainforests, HIV/AIDS, poverty, refugees, etc.)	● The company participates in the United Nations Global Compact, the World Business Council for Sustainable Development, and international conferences, is involved in environmental afforestation in China, and makes an economic contribution to developing countries through industrial afforestation.

In April 2007, we established the Oji Paper Group Partnership Procurement Policy. This policy commits Oji Paper to verifying the environmental and social impact of our supply chain in all procurement of raw materials.

### Oji Paper and suppliers team up to ensure CSR procurement

The Oji Paper Group uses forest and other natural resources as raw materials. We source some of these resources from developing countries such as Vietnam, China, and Thailand. We regard it as part of our social responsibility to verify the environmental and social impact generated by the procurement of raw material all the way through the supply chain and we expect our suppliers to work with us in responding to these issues. With economic globalization and the increasing demand for resources driven by economic growth in developing countries, the importance of socially responsible procurement, or "CSR procurement,"<sup>\*1</sup> is only going to increase.

To fulfill this responsibility, we established the Oji Paper Group Partnership Procurement Policy in April 2007. This policy calls for cooperation with suppliers to ensure that socially responsible practices are followed when procuring raw materials.

Until recently, we had pursued green procurement—which uses resources grown through sustainable forest management as raw material—in line with the Wood Raw Material Procurement Policy that we had established in April 2005. We have now

### Oji Paper Group Partnership Procurement Policy

#### Basic Approach

The Oji Paper Group, in order to fulfill its social responsibilities in business when procuring raw materials, pursues CSR (Corporate Social Responsibility) procurement that takes environmental and social factors into consideration in cooperation with business partners throughout its supply chain.

Our CSR procurement activities are based on principles such as the United Nations Global Compact, the Oji Paper Group Corporate Code of Conduct, and the Oji Paper Group Environmental Charter. By implementing CSR procurement, we seek to contribute to a truly enriched and sustainable society.

We continually seek to improve our CSR procurement activities by communicating closely with business partners.

#### Our Requests to Business Partners

The Oji Paper Group requests business partners in its supply chain to take the actions enumerated below, and works together with them to help them to do so. We also expect our business partners to encourage their suppliers to take these actions.

\* This procurement policy applies to all raw materials procured by the Oji Paper Group. The procurement of wood raw materials is covered by the Wood Raw Material Procurement Guidelines which are subordinate to this procurement policy.

\* Monitoring will be conducted as needed in order to effectively pursue CSR procurement that considers environmental and social factors.

#### VOICE

We have explained the Partnership Procurement Policy to the suppliers in Thailand and Vietnam that are under my charge. This opportunity has sparked more dialogue with suppliers and communities than we have had in the past.



#### Koji Kajikawa

General Manager, Corporate Planning Division  
Oji Paper (Thailand) Ltd.  
(Currently Manager, Wood Material Department,  
Oji Paper Co., Ltd.)

positioned the Wood Raw Material Procurement Guidelines, which are an enhanced version of the Wood Raw Material Procurement Policy, under the broader Partnership Procurement Policy, and have upgraded our focus from green procurement to what we call "CSR procurement." Consistent with this new commitment, we will consider the environmental and social impact of all raw materials procured—not only wood raw materials—in accordance with the Partnership Procurement Policy.

#### (1) Ensure stable supply

- Offer competitive prices
- Ensure quality and delivery

#### (2) Comply with laws and social standards, and engage in fair trade

- Comply with relevant laws and international conventions
- Maintain sincere and healthy relations with business partners

#### (3) Consider the environment

- Reinforce environmental management systems
- Reduce waste and effectively use resources
- Pursue global warming countermeasures
- Protect biodiversity
- Reduce environmental impact
- Manage chemical substances

#### (4) Demonstrate social concern

- Protect human rights (prohibit child labor, forced labor, discrimination, and harassment)
- Protect labor rights (maintain good labor relations, avoid long working hours, and ensure minimum wage standards are met)
- Ensure workplace safety and health
- Contribute to society and the local community

#### (5) Communicate with society

- Build relationships of trust with stakeholders through communication
- Respect the cultures and customs of other countries
- Appropriately disclose and protect information

#### \*1 CSR procurement

The practice of expecting suppliers to join one's own commitment to considering environmental and social impact when procuring the raw materials needed for production.

# Oji Paper conducts environmental audits in an effort to practice systematically effective environmental management

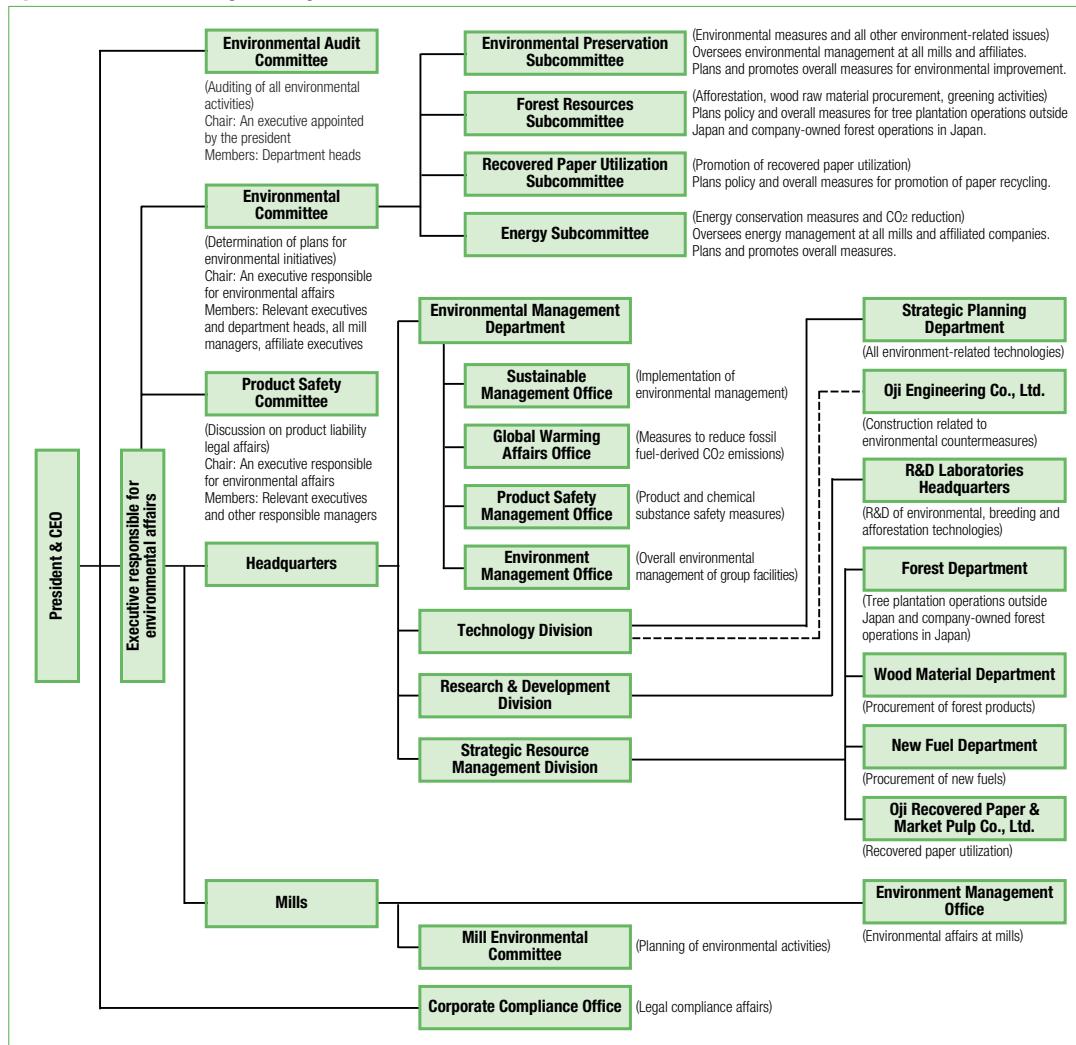
## Oji Paper Group's environmental management system

The Oji Paper Group's environmental management system is shown in figure 1. The Environmental Committee and the Environmental Audit Committee at Oji Paper Co., Ltd., which is the center of the Group's environmental management system, are the most important committees. The Environmental Committee determines environmental management policies, while the Environmental Audit Committee audits and provides guidance on the status of environmental

performance group-wide. Recently, the importance of the Product Safety Committee, which assures product safety, has been growing steadily. The Mill Environmental Committees at each mill also play an important role on the front lines of environmental conservation at our mills.

We have finished acquiring ISO 14001<sup>\*1</sup> certification at large mills. We are now working to make the system complete by ensuring that the committees effectively operate the system. Moreover, we are striving to make the system effectual by using in-house environmental audits to make sure there are no problems in the operation and status of implementation of the system.

Figure 1 Environmental Management Organization



<sup>\*1</sup> **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.

# Reconsidering and Strengthening our Environmental Auditing System

**Tomoki Tada** General Manager, Environment Management Office, Environmental Management Department, Oji Paper Co., Ltd.

The Oji Paper Group started environmental audits at its mills 13 years ago. Recently we have expanded these audits. In July 2007, as described on page 2 of this report, environmental issues were discovered with boilers at eight mills. Below is an interview with Tomoki Tada, General Manager of the Environment Management Office at Oji Paper headquarters, about how Oji Paper will address these issues going forward.

**Q. I understand that Oji Paper conducts extensive environmental audits...**

**Tada:** We have been gradually expanding the range of facilities subject to audits. Our audit coverage is now quite extensive, including group companies involved in paper and paperboard manufacturing and processing, research facilities, printing mills, our building materials business, hospitals, hotels, and food processing. All combined, our consolidated audits cover 207 sites in Japan, or 216 sites including facilities outside Japan. On-site audits of these facilities are made every two years ([table 1](#)). The scale of the facilities varies from 1,000 employees to only a few. I think we must be one of only a few companies in the world that have such broad consolidated audit coverage. I feel that our environmental management system is certainly improving thanks to these environmental audits.



"In the future, I am determined to perform high quality audits that totally get to the bottom of what is happening on site."

— Tomoki Tada

**Q. Environmental issues involving boilers at eight mills of the Oji Paper Group were discovered not long ago. What do you think of this, as a person in charge of the auditing process.**

**Tada:** It was quite a shock. My mind went completely blank when I heard the initial report. In 2005, misconduct involving wastewater data was discovered at many enterprises in Chiba Prefecture. Twice I instructed all group companies to conduct thorough investigations to make sure there was no data falsification in our group. The results turned up misconduct at the Chiba Mill of Oji Cornstarch, which we voluntarily reported. This fact was mentioned in our *Environmental and Sustainability Report 2006*. However, when the recent problems surfaced, honestly, my head was reeling with questions: What, exactly, was the point of all those environmental audits that we had conducted until now? Why did we not uncover this misconduct? Why did these goings-on not get identified as problems? I really feel the weight of responsibility for this recent misconduct, because my department is in the position of directing environmental protection group-wide. The big question now is what kind of management system to roll out from here on.

**Q. Will you continue conducting audits as in the past?**

**Tada:** Of course. Two years ago, we created a 170-point audit checklist, developed an auditing system, and expanded the facilities subject to audits. But, from here on I think we need to improve the quality of audits. The recent incident was only just discovered, and so we are busy responding to this pressing issue now and have only just started to prepare to improve auditing methods. However, as a basic policy I think we need to alter our existing audit methods, which have tended to assume that people always have the best intentions, and adopt audits that make the safer

**Table1 Fiscal 2006 On-site Environmental Audit Results for Oji Paper Group in Japan (Conducted at 107 of 207 Sites)**

Indicated items	Item that should be improved promptly	114	Advisable items	Items that should be systematically improved or that it is advisable to improve	583
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assumption that people are corruptible. Of course, we will continue as usual with audits that assume good intentions, depending on the size of the facility being audited, and will continue to implement audits that serve as educational projects. We will mainly conduct the usual audits at small facilities, which do not have enough human resources or funds to support the legal or technical necessities of more intense audits. At these mills, we will emphasize educational audits that primarily focus on raising the mill's performance.

At large facilities, however, we have already finished the educational phase, and, taking the recent incident as a lesson, I think our audits need to assume people are corruptible. We have already started reviewing systems to determine the methods, amount of time and personnel to devote to audits. For instance, I would like to get to the bottom of what's really happening by, for example, verifying operational notes and interviewing workers about how they handle trouble and problem areas. Steps like this have already brought our checklist, which used to have 170 points, up to 470 points. Looking ahead, we intend to continue improving the checklist.

We are also broadening the laws covered by our audits. In an environment characterized by a "silo" mentality—in which people think that the subject of an audit is not within the scope of the environmental department or that a certain statute is managed by the safety department and so need not be looked at in an environmental audit—we will not be able to fulfill the compliance requirements of the future. We must conduct proper audits, even if they cross departmental lines. I imagine that if one looks, there must be

a huge void—legal issues that are not actually being checked by any department.

**Q. Please tell us about your future environmental management system.**

**Tada:** We had already acquired ISO 14001 certification at the eight mills where the recent misconduct occurred. Many of the plants of enterprises that have been involved in environmental misconduct throughout Japan in recent years had ISO certification. That is not to say that the ISO is meaningless, but there is no doubt that the system has sometimes failed to prevent inappropriate behavior. As a countermeasure, I think that we need to adopt a procedure that will act like a brake in the system.

We must also not neglect small and medium-size facilities. Unfortunately, it is very difficult for these facilities to acquire ISO 14001 certification due to cost and personnel issues. But, this poses a problem as things stand now. So, to address this situation, we will shift our efforts at medium-size facilities to acquiring a simplified version of EMS certification that covers all the requirements of ISO. At facilities that are too small even for this approach, we are thinking about creating an Oji Paper original EMS certification so that all facilities operate an EMS.

Oji Cornstarch, which caused a problem the year before last, now operates an excellent environmental management system. I feel an acute sense of responsibility for the impact on society of the recent misconduct, and I think it is the duty of the Environmental Management Department to turn this incident into an opportunity to get back on the right track.

## Progress Report on the Oji Paper Group Environmental Charter and Environmental Action Plan 21

The Oji Paper Group established its Environmental Charter to make it clear that the addressing of environmental issues is a top management priority. We have also established Action Guidelines to ensure that the basic policy of the Environmental Charter is applied in a practical way in business activities. Going a step further, we set specific numerical targets, in the Environmental Action Plan 21, to make certain that the Action Guidelines are put into practice. Below, we report our performance and the progress made in fiscal 2006 toward achieving our targets for fiscal 2010.

Environmental Charter Action Guidelines	Environmental Action Plan 21 (fiscal 2010 targets) *(Revised April 27, 2006)
1. Promotion of forest recycling	→ Establish 300,000 ha of overseas plantations.
2. Promotion of paper recycling	→ Achieve a recovered paper utilization rate of 62%.
3. Promotion of global warming countermeasures	→ Reduce fossil fuel-based energy consumption per unit of production by 20% relative to fiscal 1990 levels. → Reduce fossil fuel-based carbon dioxide emissions per unit of production by 20% relative to fiscal 1990 levels.
4. Reinforcement of environmental improvement measures and environmental management systems	→ Targets (1) Pursue certification under environmental management systems, including ISO 14001 or other EMS, selecting the system best suited to each facility. Group companies involved in distribution aim to achieve certification under the Ministry of Land, Infrastructure and Transport's Green Management System at all business sites by March 2007.  (2) Pursue acquisition of forest certification at all overseas forest plantations and, under the Sustainable Green Ecosystem Council (SGEC) program at company-owned forests in Japan.
5. Development of production technologies and products that minimize environmental impact	
6. Reduction and effective utilization of waste	→ • Ultimately reduce the volume of landfill disposal to zero through further efforts to reduce or reuse waste. • Achieve a final disposal ratio of 0.5% by March 2011.
7. Transfer of environmental protection technology to other countries	
8. Building relationships of trust with stakeholders	

## Oji Paper Group Environmental Charter Basic Policy

The Oji Paper Group Environmental Charter requires the Oji Paper Group to help create a truly enriched and sustainable society by developing business activities that harmonize with the environment from a global perspective. The Charter calls for the Oji Paper Group to make autonomous efforts to achieve further environmental improvement, and aggressively drive its forest recycling, paper recycling, and global warming countermeasures forward.

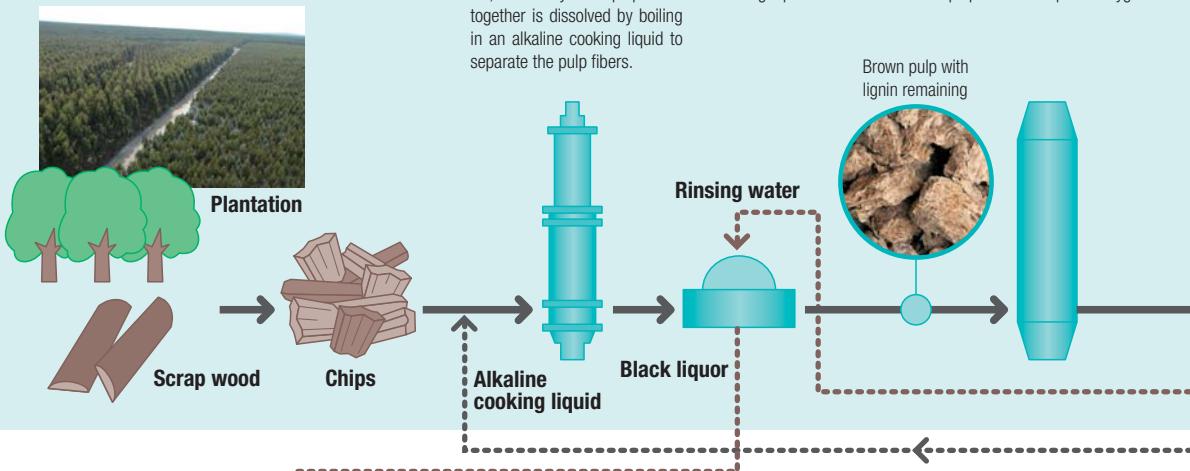
Fiscal 2006 Activities and Progress	Pages(s)	
Tree plantations outside Japan Total area as of end of FY2006 (Excluding harvested areas that have not yet been fully replanted) Reference value: Amount of wood chips from group plantation wood	165,671 ha Up 13,327 ha from FY05 366,000 BD tonnes Down 6,000 BD tonnes from FY05	15-20
Recovered paper utilization rate Reference value: Recovered paper consumption (calendar year) Reference value: Share of recovered paper consumption in Japan	60.2% 5,018,000 tonnes 26.7% Down 0.3 points from FY05 Up 50,000 tonnes from FY05 No change	21-24
Fossil fuel-based energy consumption per unit of production Fossil fuel-based CO <sub>2</sub> emissions per unit of production Reference values Fossil fuel-based energy consumption Fossil fuel-based CO <sub>2</sub> emissions	244 liters (crude oil conversion basis) / tonne of products 0.645 tonnes-CO <sub>2</sub> / tonnes of products Achieved 23.3% reduction from FY90 Achieved 23.8% reduction from FY90 Achieved reduction of 156,000 kiloliters from FY05 Achieved reduction of 493,000 tonnes-CO <sub>2</sub> from FY05	27-32
● Facilities that newly acquired ISO 14001 certification in fiscal 2006  ● Facilities that acquired Green Management Certification by fiscal 2006	• Four mills of Oji Chiyoda Container • Nishiko Containerboard  Thirteen of 14 offices of Oji Rikuun acquired certification, and the remaining office, which opened in 2004, is in the process of acquiring certification. We are working to acquire this certification together with a safe facility certification that requires an office to have at least a three-year history after opening.	16, 42-44
● Forests that acquired forest certification by fiscal 2006  ● Environmental preservation guidance based on environmental audits provided to facilities	• Outside Japan, PAN PAC and SPFL in New Zealand, APFL in Australia, and QPFL in Vietnam acquired FSC certification. • In Japan, four mills of Oji Paper and one mill of Oji Specialty Paper acquired CoC, another FSC certification. • In addition to Kamiinako Forest in Shizuoka Prefecture, Fuso Forest in Wakayama Prefecture, and all company-owned forests in Hokkaido, forests in 99 locations (covering 23,000 ha) in Tohoku, Kanto and Chubu acquired SGEC certification in fiscal 2006.  Audits conducted and guidance provided at 107 of 207 sites in Japan and 2 of 9 sites outside Japan.	25-26, 56
● Conversion of kraft pulp (KP) bleaching process to elemental chlorine free (ECF) bleaching	Work for ECF conversion completed at mills in Tomioka, Kushiro, and Kure between April and June, which completes the conversion at all Oji Paper Group mills.	53
● Environmentally friendly research and new product development	• Developed environmentally friendly printing paper and carbonless paper—the EH (EcoHarmony) series—made from a blend of recovered paper pulp and environmentally friendly virgin pulp, which meets the Eco Mark and FSC certification standards. • Developed fancy lightweight coated paper that uses 100% of recovered paper, even the paper sludge (by recovering pigments from paper sludge). • Developed filmless sublimation transfer recording paper. • Contributed to the improvement of food recycling by developing "Chaba Board," a containerboard that effectively utilizes used tea leaves, which are a food waste, to provide a deodorizing effect.	19, 30
Amount of final disposal in landfills Final disposal rate Effective utilization rate	61,000 BD tonnes 0.73% 90.7% Improved by 6,000 BD tonnes from FY05. Improved by 0.07 point from FY05. Improved by 1.6 points from FY05.	61-64
● Conducted a 100 ha pilot tree plantation project in Madagascar and applied for new methodology for a CDM afforestation project. ● Expanded operations of our Forestry Research Institute in Australia. ● Conducted technical survey in preparation for the construction of a paper mill in China featuring leading-edge technologies.		
● Held company-sponsored environmental talks in Nov. 2006 and participated in Eco-Products 2006 with exhibition booth (Dec. 2006) ● Held various environmental talks on request from outside the company. ● "Groundwork" programs: Recovered disposable chopsticks for use in making pulp: 460,680 kg; Held community monitors meetings: 129 times; Conducted environment-related mill tours: 6,365 people attended; Recovered domestic waste cooking oil for use as fuel: 60,448 liters; Held community clean-up, beautification, and tree-planting activities: 1,585 times with the participation of 23,652 people; Held classroom sessions for Oji Forest Nature Schools in FY06: 41 children participated in Nishi Tanzawa and 28 in Hiroshima		

\* Companies covered by aggregate figures: Oji Paper Co., Ltd., Oji Paperboard Co., Ltd., Oji Specialty Paper Co., Ltd., and Oji Nepia Co., Ltd.

## Environmental Impact of the Paper Industry

Inspections of the environmental impact generated by Oji Paper's mills demonstrate effective use of raw materials, waste, energy, and water.

### Virgin pulp production process



### Digester

The adhesive component (lignin) that firmly binds pulp fibers together is dissolved by boiling in an alkaline cooking liquid to separate the pulp fibers.

### Rinsing process

The lignin dissolved in alkaline cooking liquid is rinsed out.

### Oxygen bleaching

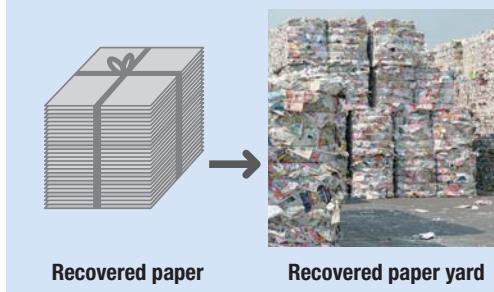
The lignin remaining in the pulp is broken up with oxygen.

### Energy and alkali recovery process

Black liquor, which contains dissolved lignin, remains after extracting pulp from wood. Black liquor is concentrated and used as a fuel.



### Recovered paper pulping process

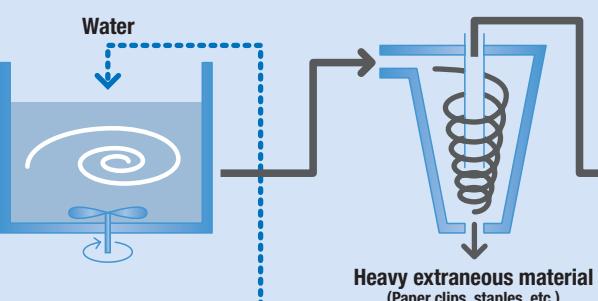


### Pulping process

When recovered paper is agitated in a pulper to separate fibers, the mixture becomes a dense liquid. At this time, the printing ink turns into fine particles and is separated from the pulp.

### Removing extraneous material

Extraneous material is removed through a narrow opening due to differences in specific gravity.



## Pulp production process and recovery process

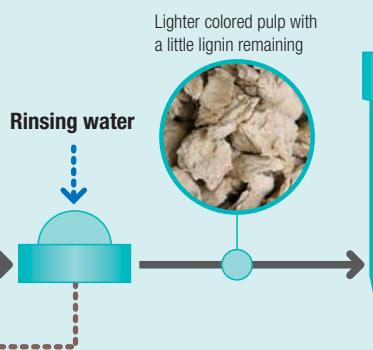
The most distinguishing characteristics of Oji Paper's virgin pulp production process are use of a biomass fuel called black liquor that is generated during the pulp production process itself and the efficient recovery of pulping chemicals. Black liquor is used as a fuel to produce electrical power and steam. All of the alkaline chemicals used for pulping remain in the ash after

combustion. Recovery of these chemicals is an example of an outstanding resource recycling technology.

The deinking technology used to remove printing ink during the recovered paper pulping process is particularly outstanding. This technology makes use of a behavior of the ink: when tiny air bubbles are blown into the liquid containing the ink that has been separated from the recovered paper, fine granules of ink collect around the surface of the bubbles and float to the surface of the water. This technology applies the flotation process used to sort out minerals from ore powder.

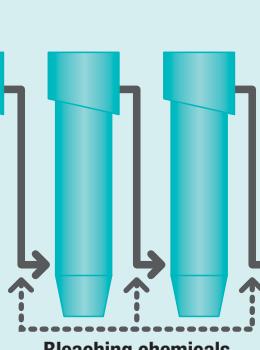
### Rinsing process

The lignin broken up during oxygen bleaching is rinsed out. Afterwards, the water is used as rinsing water in the previous rinsing process, which is a dirtier process.



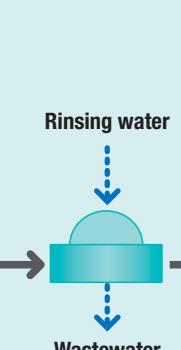
### Bleaching process

The slight amount of remaining lignin is decomposed to make white pulp.



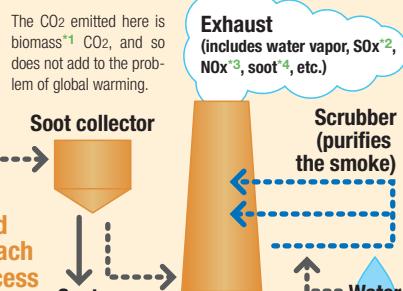
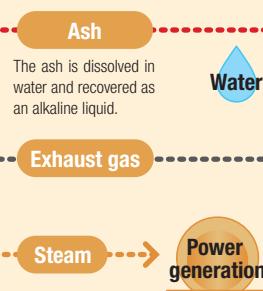
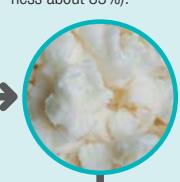
### Rinsing process

The bleaching is complete when the remaining bleaching chemicals are rinsed out.



### Finished pulp

The pulp used to make the white paper commonly seen in notebooks and books is finished (brightness about 85%).

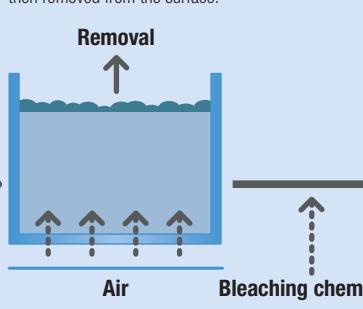


Blended according to the intended paper use

To papermaking process  
(continues on next page)

### Removal of ink

Air is blown into the pulp solution. The fine particles of ink float to the top with the air bubbles. The ink is then removed from the surface.

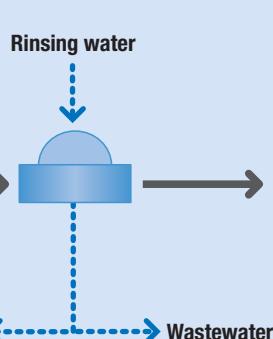


### Bleaching process

The pulp is bleached with hydrogen peroxide or other bleaching agents.

### Rinsing process

The remaining bleaching chemicals are rinsed out.



### Finished pulp

Somewhat gray with a brightness of about 70%

## Papermaking process

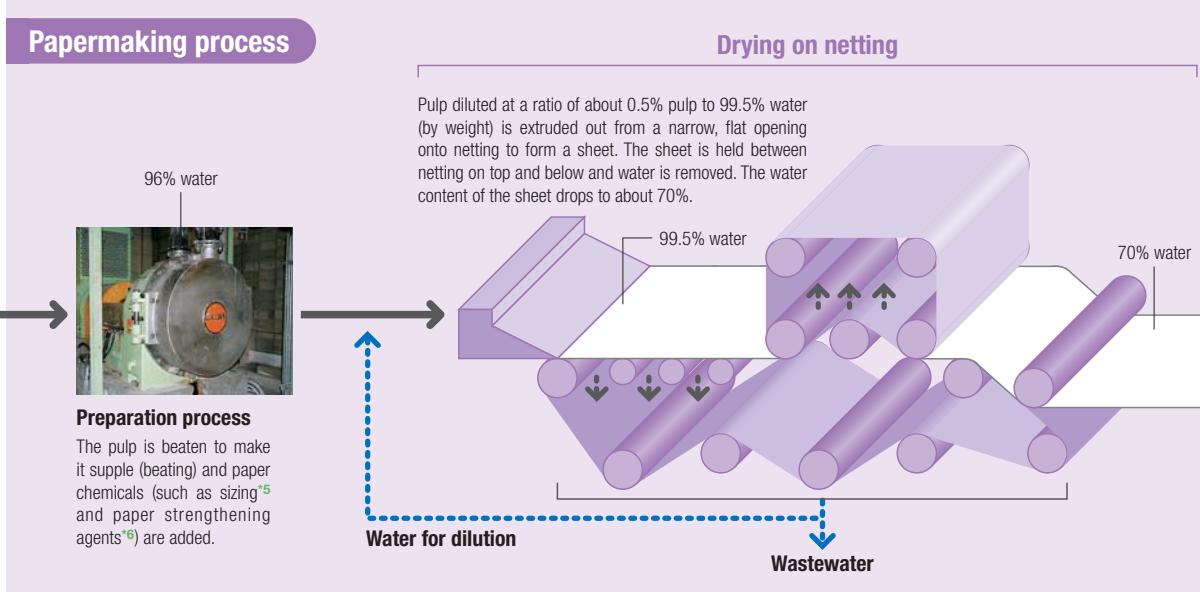
In the papermaking process, pulp is changed into thin, uniform sheets with strong bonds between fibers to make good quality paper. First, the pulp is beaten during the preparation process to make the fibers supple. Next, the pulp is diluted with water at a ratio of about 0.5% pulp to 99.5% water (by weight). The pulp needs to be diluted in water to prevent the fibers,

which become entangled easily, from piling. A damp sheet forms when this water is spread on a net and dried. The bonds between the fibers become stronger when the dried sheet is then pressed between rollers. The water removed from the sheet during the drying process is reused to dilute pulp.

The latest papermaking machines can turn out paper at a speed of 100 km per hour, creating rolls of paper about 10 meters wide and roughly 3 meters in diameter.

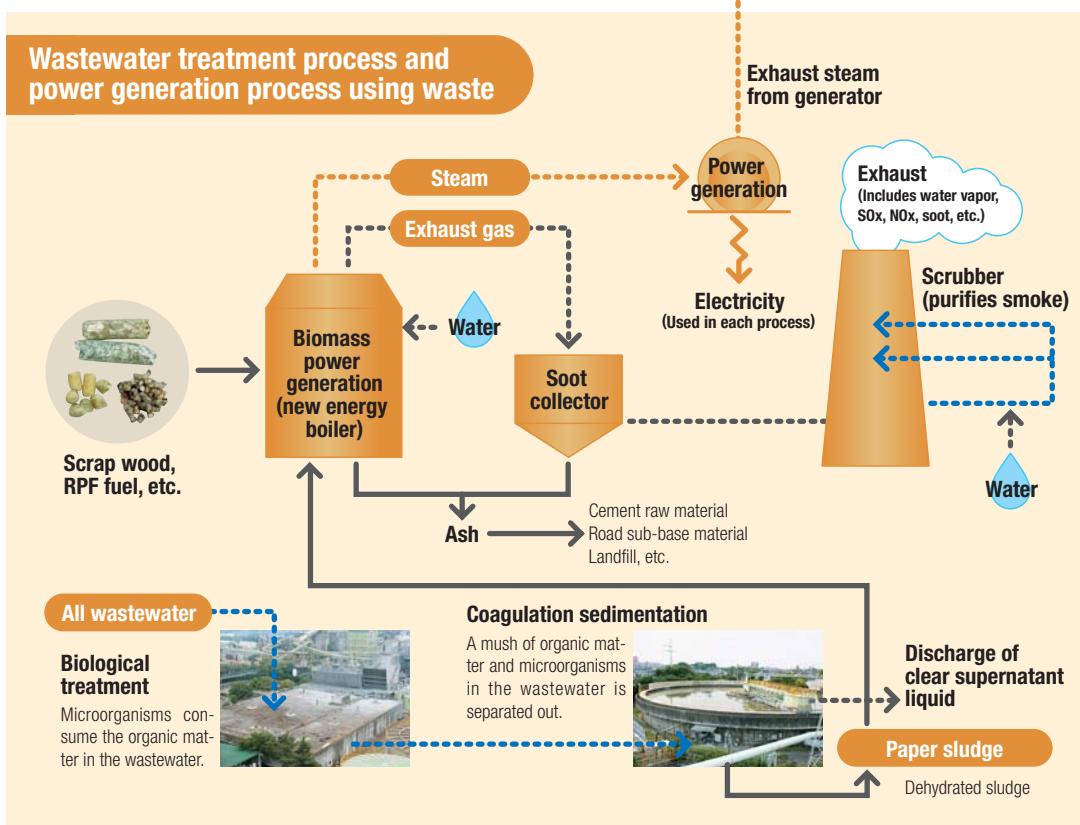
### From the pulp production process

(continued from previous page)



<sup>\*5</sup> **Sizing**  
Chemicals added just before the papermaking process to prevent ink bleeding and to add water resistance.

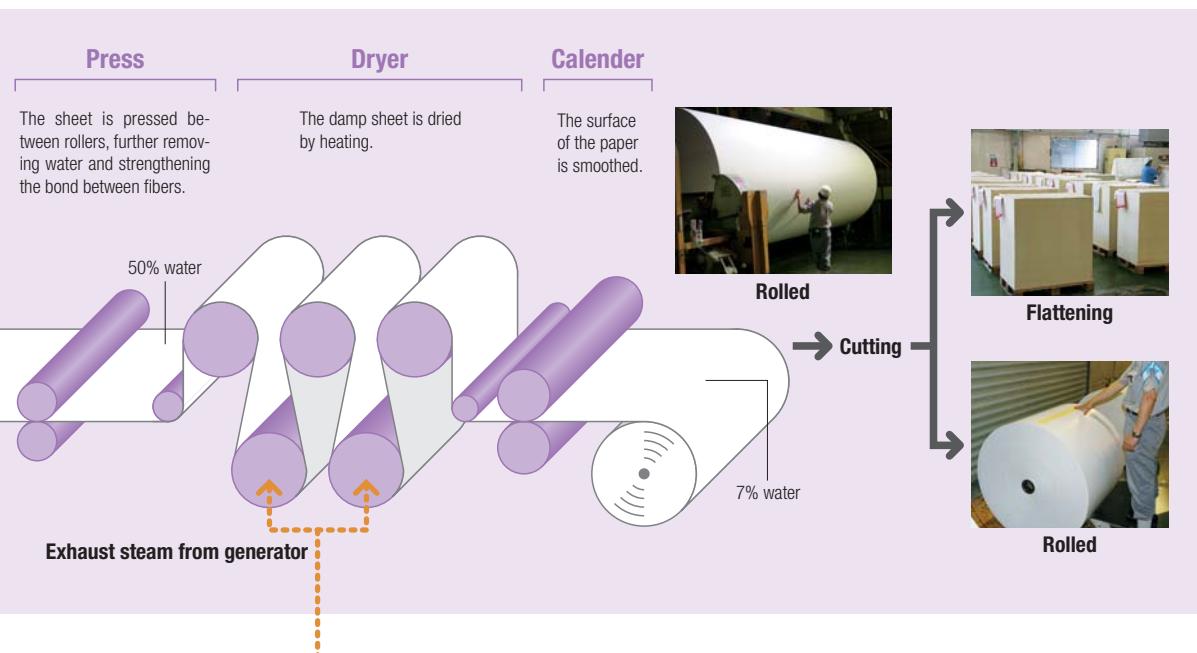
<sup>\*6</sup> **Paper strengthening agents**  
Chemicals added just before the papermaking process to give strength to the paper.



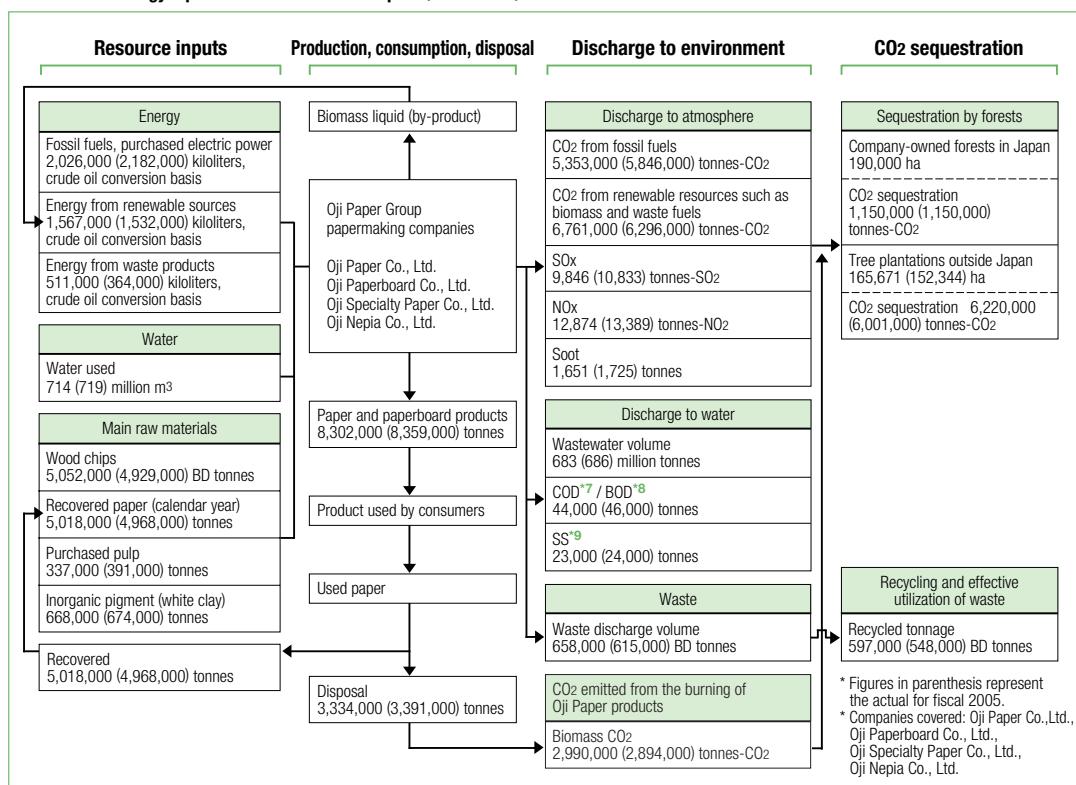
## Wastewater treatment process

The wastewater treatment process uses a purification method known as microbiological treatment. The wastewater emitted from the production process contains organic matter. Microorganisms purify the wastewater by consuming this organic matter. The principle is the same as for a septic tank (biological treatment tank). Inside the purification tank, the addition of air to

fluid containing wastewater and microorganisms makes it easier for the microorganisms to act. The microorganisms proliferate as they purify the wastewater. Next, the microorganisms and wastewater are separated. Some microorganisms are returned to the purification tank and the excess is used as boiler fuel together with other waste fuels (scrap wood, RPF, etc.), thereby helping to reduce the use of fossil fuels. The ash left after combustion is recycled in various ways, including as a substitute for clay in cement production and as a construction material in the sub-base of roads.



Resource and Energy Inputs and Environmental Impact (Fiscal 2006)



<sup>\*7</sup> COD (chemical oxygen demand)  
The amount of oxygen consumed to decompose organic compounds in water through oxidation. The smaller the number, the cleaner the water.

<sup>\*8</sup> BOD (biochemical oxygen demand)  
The amount of oxygen consumed when microorganisms decompose organic compounds in water. BOD is an indicator of the amount of biodegradable organic compounds in wastewater.

<sup>\*9</sup> SS (suspended solids)  
Insoluble material in wastewater. When there is a lot of suspended sediment, it settles out in aquatic environments, and may accumulate into sludge if there is an excessive amount.

Consumers directly handle the paper that we produce. To ensure consumer safety and to safeguard the health of our employees at the production stage, we give careful consideration to safety, beginning with the selection of raw materials.

## Checking safety at suppliers

### ● Pre-use evaluation system: New Raw Material Safety Sheets

Paper is generally a very safe product. Depending on the type of paper, however, pigments and binders (adhesives) sometimes have to be added to give the paper special properties. These additives contain chemical substances. The Oji Paper Group confirms the safety of these chemicals in a pre-use evaluation system based on its own New Raw Material Safety Sheets. Since a year before Japan's Product Liability Law (PL Law) came into effect in 1995, we have been obtaining the cooperation of suppliers in our efforts to ensure safety.

### ● Evaluation process for New Raw Material Safety Sheets

Figure 1 shows the process for the pre-use evaluation system using New Raw Material Safety Sheets. We follow this process whenever we consider using a new raw material.

A mill requests a supplier to submit a New Raw Material Safety Sheet (steps 1 and 2). The information

is evaluated by departments at the mills (step 3) and by the headquarters' Environmental Management Department (step 4), and a decision is made on the advisability of using the raw material (step 5). Finally, the mill that intends to use the material is notified of the evaluation result (step 6). Only after passing this strict procedure can a material become eligible for purchase by an Oji Paper Group mill. We update the information requested by the safety sheets as needed to comply with revisions to laws and regulations in Japan and other countries. By the end of March 2007, we had evaluated as many as 13,300 substances using our New Raw Materials Safety Sheets. Of these, we decided not to use about 440 for safety reasons.

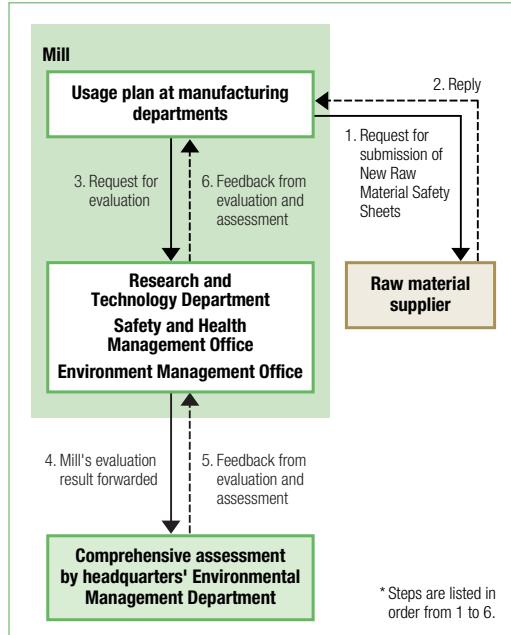
### ● Regulatory and hazard information investigation system

With today's stronger mandated safety inspections for chemical substances, the need to promptly obtain new regulatory and hazard information has become more critical than ever. To get ahead of this trend, in 2006, we introduced a system with the cooperation of suppliers for investigating regulatory and hazard information on raw materials currently in use. This system, which is now in its second year, complements our current system of New Raw Material Safety Sheets.

### ● Responding to the Japan Paper Association's Voluntary Standards on Paper and Paperboard Intended to Come into Contact with Foodstuffs

On May 21, 2007, the Japan Paper Association established its own standards to ensure a higher level of

**Figure 1** New Raw Material Safety Sheet Evaluation Flowchart



## VOICE

Whenever we introduce a new raw material to make a new product, we confirm its safety. First we do an evaluation here at the mill using a New Raw Material Safety Sheet, and this is followed by a final evaluation at the headquarters' Environmental Management Department.



**Shinichi Koga**

Manager, Research and Technology Department  
Kanzaki Mill  
Oji Paper Co., Ltd.



Photo 1 Third-party audit by customer (Kanzaki Mill).

safety and reliability regarding paper and paperboard used in apparatus and containers/packages intended to come into contact with foodstuffs (paper and paperboard for foodservice use). The standards will take effect in October 2007. As a member of the Association, the Oji Paper Group observes these standards.

## Disclosing information to customers

### ● Providing product safety information

We actively provide environmental and safety information so that customers can use the Oji Paper Group's products with peace of mind. Except for a few products, there is no legal obligation in Japan to disclose environmental and safety information on paper products. Nevertheless, we have been disclosing information through Article Information Sheets (AIS<sup>\*1</sup>) since January 2000. For special products for industrial use that do have a legal disclosure obligation, we disclose information using Material Safety Data Sheets (MSDS<sup>\*2</sup>). Depending on the content of inquiries from customers related to their green procurement policies, we issue "safety certificates" that include the results of investigations regarding inquiries. Further, we accept third-party audits from customers who want to confirm the environmental and quality status of our production sites and facilities (photo 1).

### ● Product Safety Charter

The Oji Paper Group has built a system for checking the safety of raw materials before procurement. It is very important to us that consumers are able to use our products with peace of mind, that our employees stay healthy and safe during production, and that environmental impact is kept to an absolute minimum. This safety-check system is based on Oji

Paper's Product Safety Charter, which we established in 1995 to clearly describe our commitment to ensuring product safety.

### Product Safety Charter

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.

- ① 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.

### VOICE

In my view, one of our main responsibilities is to continue to promptly provide customers with information related to product safety, backed up by our New Raw Material Safety Sheets.



### Kikunori Matsubara

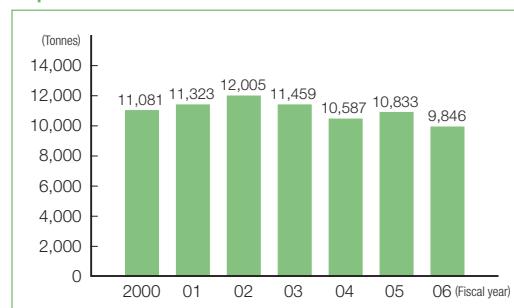
General Manager, Product Safety Management Office  
Environmental Management Department  
Oji Paper Co., Ltd.

<sup>\*1</sup>  
**Article Information Sheets (AIS)**  
Instructions that provide information needed to safely handle articles with the aim of preventing product-related accidents.

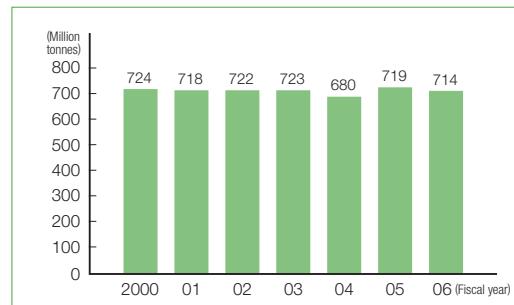
<sup>\*2</sup>  
**Material Safety Data Sheet (MSDS)**  
A means of communicating hazard and toxicity information and handling precautions for chemical substances when those substances are traded between businesses.

# Air, Water and Wastes

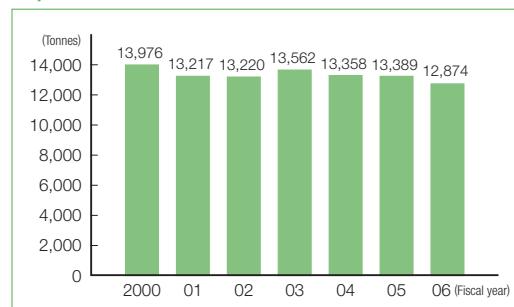
**Graph 1 SOx<sup>\*1</sup> Emissions**



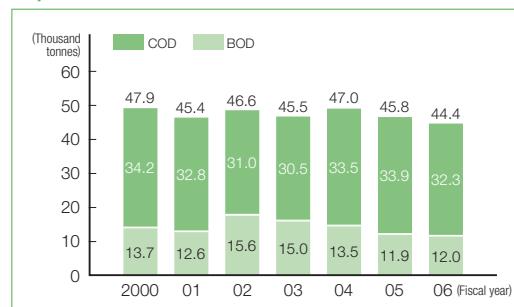
**Graph 5 Water Usage**



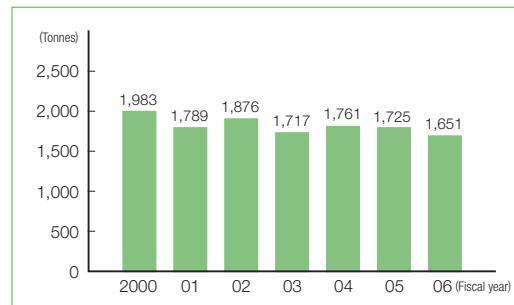
**Graph 2 NOx<sup>\*2</sup> Emissions**



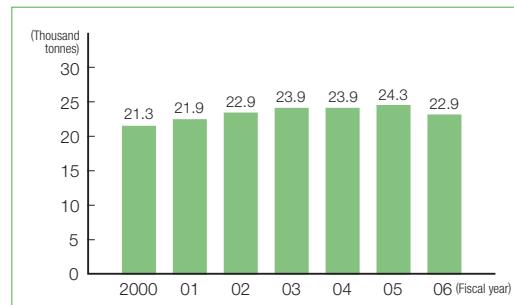
**Graph 6 COD<sup>\*5</sup> and BOD<sup>\*6</sup> Emissions**



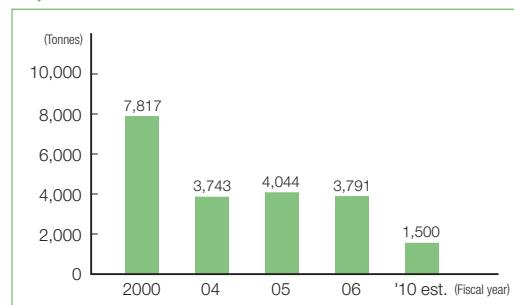
**Graph 3 Soot<sup>\*3</sup> Emissions**



**Graph 7 Emissions of Suspended Solids<sup>\*7</sup>**



**Graph 4 VOC<sup>\*4</sup> Emissions**



**Graph 8 Effective Utilization of Wastes, Final Disposal, Final Disposal Rate<sup>\*8</sup>**



\* Companies covered for graphs 1-8:  
Oji Paper Co., Ltd., Oji Paperboard Co., Ltd., Oji Specialty Paper Co., Ltd., and Nepia Co., Ltd.

**Table 1 Storage of PCB Wastes**

Company	Amount stored	Processed	Amount after process
Oji Paper Co., Ltd.	40,556	0	40,556
Oji Paperboard Co., Ltd.	44,001	0	44,001
Oji Specialty Paper Co., Ltd.	13,996	0	13,996
Other	19,874	159	19,715
<b>Total</b>	<b>118,427</b>	<b>159</b>	<b>118,268</b>

\* As of February 2007.

# Environmental Accounting

**Table 2 Environmental Conservation Cost**

Category		Main initiatives	Investment	Costs
<b>1. Environmental conservation costs for curbing environmental impact generated by production and service activities within business sites</b>				30,255 17,875
Breakdown	a. Environmental conservation management costs	Renovation of electrostatic precipitators, changeover to ECF bleaching equipment, installation of deodorizing equipment, noise and vibration control measures, soil cleanup	4,507	11,076
	b. Global environmental conservation costs	Cultivating company-owned forests in Japan, tree plantation operations outside Japan, energy conservation investments	7,686	839
	c. Resource circulation costs	Efficient utilization of resources, costs for waste measures	18,061	5,960
<b>2. Costs for curbing environmental impact generated by production and service activities</b>		Costs for purchasing low-sulfur fuel (balance amount), effective utilization of wastes	0	1,225
<b>3. Environmental conservation costs related to administrative activities</b>		Employee education, ISO 14001 costs, costs for air and water analysis, costs for operating committees and other organizations	9	736
<b>4. Environmental conservation costs related to R&amp;D activities</b>		Product development that contributes to environmental conservation by promoting utilization of recovered paper, curbing environmental impact that occurs during production	171	2,398
<b>5. Environmental conservation costs related to social activities</b>		Philanthropic programs, support for various environmental groups, environmental and sustainability reporting, environmental exhibitions and other public relations activities	0	214
<b>6. Costs related to environmental damage</b>		Pollution impact levy (SOx)	0	865
<b>Total</b>			30,434	23,313

**Table 3 Economic Benefit Associated with Environmental Conservation Activities** (Unit: ¥ million)

Effect	Value
Income from company-owned forests in Japan	445
Cost reductions through energy conservation	1,831
Income from recycling	1,374
<b>Total</b>	3,650

## 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.

\* Scope of aggregation: Oji Paper and its main affiliates (Oji Paperboard, Oji Specialty Paper, Oji Nepia, Oji Chiyoda Container, Oji Cornstarch, and Oji Tac).

\* Period covered: April 1, 2006 - March 31, 2007

# Release and Transfer of PRTR Chemical Substances

**Table 4 PRTR<sup>9</sup> Summary Sheet for the Oji Paper Group Mills (Data for April 2006 – March 2007)**

(Unit: kg, except for dioxins, which are mg-TEQ)

Substance	Annual amount handled (output)	Released to atmosphere	Released to public waters	Total released (calculated value)	Total transferred (calculated value)	Total released and transferred (FY06)	Total released and transferred (FY05)
<b>zinc compound (water-soluble)</b>	57,038		3,300	3,300	8,022	11,322	16,072
acrylic acid	1,110			0	2	2	5
2-aminoethanol	18,600			0	378	378	389
diethylenetriamine	1,820			0	18	18	15
n-alkylbenzenesulfonic acid and its salt (C=10-14)	2,210		150	150	0	150	140
antimony and its compounds	3,350		100	100	190	290	350
ethylbenzene	1,893	7		7	0	7	1,107
ethylene glycol	11,414		2,318	2,318	9	2,327	6,840
xylene	1,024,060	5,866	6	5,872	390	6,262	4,800
glyoxal	6,575			0	88	88	83
chloroform	4,120	3,260	570	3,830	0	3,830	102,700
vinyl acetate	693,479	970	36	1,006	133	1,139	1,400
cyclohexylamine	4,504	4,400	75	4,475	0	4,475	4,679
Reference: dichloromethane (methylene chloride)	0			0	0	0	0
styrene	8,500			0	0	0	0
<b>copper water-soluble salt (except complex salt)</b>	39,451		660	660	1,780	2,440	3,920
toluene	4,808,831	2,903,576	1,040	2,904,616	176,800	3,081,416	3,339,615
<b>lead and lead compounds</b>	11,000			0	340	340	0
hydrazine	1,531	13	9	22	0	22	1,160
di-n-Butyl benzyl phthalate	4,319			0	97	97	44
benzene	356,911	26,103		26,103	0	26,103	12,993
boron and its compounds	276,228		11,495	11,495	5,822	17,317	13,511
poly (oxyethylene) alkyl ether (C=12-15)	1,500			0	290	290	182
poly (oxyethylene) nonylphenol ether	4,100			0	0	0	170
formaldehyde	13,003	840	10,300	11,140	0	11,140	9,980
manganese and its compounds	1,200		1,200	1,200	0	1,200	1,400
methylenebis (4,1-cyclohexylene) diisocyanate	1,950			0	445	445	72
<b>Total (kg) (excluding dioxins)</b>	7,358,697	2,945,035	31,259	2,976,294	194,803	3,171,097	3,521,627
<b>dioxins (mg-TEQ)</b>	1,918	258	126	608*	1,310	1,918	3,838

\* Including amount of landfill disposal (225) at the site in question.

<sup>9</sup> **PRTR (Pollutant Release and Transfer Register)**  
Under the PRTR system, businesses ascertain the amounts of chemical substances that could be harmful to human health and/or ecosystems which they have emitted to the environment and transferred as part of waste and report that data to a government agency. The government agency then uses the data to tabulate and publish information on the amounts of chemicals emitted and transferred.

# Data for Individual Mills and Companies

**Table 5 Environmental Impact for Individual Mills of Oji Paper Co., Ltd. (Fiscal 2006)**

Mill	Production	Environmental impact on water				Environmental impact on atmosphere			Waste				
		Water consumption	Waste water	COD or BOD	Suspended solids	Sulfur oxides	Nitrogen oxides	Soot	Total transferred	Effectively utilized waste	Disposed waste	Effective utilization rate	Final disposal rate
		a				SOx	NOx		b+c	b	c	b/(b+c)	c/a
		Tonnes	Thousand tonnes	Tonnes	Tonnes	Tonnes-SO <sub>2</sub>	Tonnes-NO <sub>2</sub>	kg	BD tonnes	BD tonnes	BD tonnes	%	%
<b>Kushiro Mill</b>	650,571	78,417	74,734	7,474	3,671	1,784	833	280,000	62,981	62,390	591	99.1	0.091
<b>Tomakomai Mill</b>	1,244,420	145,070	134,924	13,038	6,825	2,240	2,735	98,000	230,752	214,840	15,912	93.1	1.279
<b>Fuji Mill</b>	414,305	32,815	32,478	1,299	715	70	345	20,600	37,117	37,106	11	100.0	0.003
<b>Kasugai Mill</b>	784,296	66,723	64,432	3,415	1,804	352	1,730	407,100	50,967	41,903	9,064	82.2	1.156
<b>Kanzaki Mill</b>	79,812	360	246	15	8	0	19	84	8,780	8,773	7	99.9	0.009
<b>Yonago Mill</b>	606,812	42,598	40,340	2,803	1,402	926	1,242	83,000	48,101	48,007	94	99.8	0.015
<b>Kure Mill</b>	288,305	51,328	50,715	2,373	1,014	22	989	36,000	11,620	11,620	0	100.0	0.000
<b>Tomioka Mill</b>	615,865	64,116	62,125	3,576	1,187	338	1,204	218,000	19,398	18,674	724	96.3	0.118
<b>Nichinan Mill</b>	272,995	42,725	42,725	3,277	2,683	1,011	452	55,000	42,738	17,501	25,237	40.9	9.244
<b>Total</b>	4,957,381	524,151	502,719	37,270	19,308	6,743	9,549	1,197,784	512,454	460,814	51,640	89.9	1.042

**Table 6 Environmental Impact of Oji Paper Group Companies (Fiscal 2006)**

	Number of facilities	Production	Energy			Environmental impact on water quality					
			Fossil fuel consumption	CO <sub>2</sub> emissions		Water consumption	Wastewater	COD	BOD	COD+BOD	Suspended solids
			a	Crude oil equivalent	Derived from fossil fuels						
			Tonnes	Thousands of kl	Thousands of tonnes-CO <sub>2</sub>	Thousands of tonnes	Thousands of tonnes	Tonnes	Tonnes	Tonnes	Tonnes
<b>Oji Paper Co., Ltd.</b>	9	4,957,381	1,211	3,228	524,151	502,719	29,782	7,488	37,270	19,308	
<b>Oji Paperboard Co., Ltd.</b>	11	2,604,590	514	1,397	113,933	107,354	1,534	1,962	3,497	2,175	
<b>Oji Specialty Paper Co., Ltd.</b>	9	506,083	190	482	69,655	66,962	583	2,592	3,175	1,367	
<b>Oji Nepia Co., Ltd.</b>	3	234,208	111	245	6,251	6,242	409	0	409	71	
<b>Oji Cornstarch Co., Ltd.</b>	3	387,034	53	112	10,825	10,479	69	97	166	81	
<b>Oji Chiyoda Container Co., Ltd.</b>	32	1,014,371	37	82	394	349	0	8	8	5	
<b>Mori Shigyo Group</b> (excluding Oji Paper Co., Ltd.)	21	873,355	33	72	341	190	0	11	11	5	
<b>Oji Tac Co., Ltd.</b>	2	32,259	8	17	606	606	0	0	0	1	
<b>Yupo Corporation</b>	1	21,144	14	27	58	50	0	0	0	0	
<b>Oji Kinocloth Co., Ltd.</b>	2	23,630	7	13	560	560	0	0	0	0	
<b>Oji Packaging Co., Ltd.</b>	2	75,174	5	10	28	28	0	0	0	0	
<b>Total for 22 other affiliates</b>	67	402,676	37	77	6,228	2,830	138	0	138	17	
<b>Total</b>	162	11,131,905	2,219	5,764	733,029	698,370	32,515	12,159	44,674	23,030	

	Number of facilities	Production	Environmental impact on atmosphere			Waste					
			Sulfur oxides	Nitrogen oxides	Soot	Total transferred	Effectively utilized waste	Disposed waste	Effective utilization rate	Final disposal rate	
			SOx	NOx		b+c	b	c	b/(b+c)	c/a	
			Tonnes-SO <sub>2</sub>	Tonnes-NO <sub>2</sub>	kg	BD tonnes	BD tonnes	BD tonnes	%	%	
<b>Oji Paper Co., Ltd.</b>	9	6,743	9,549	1,197,784	512,454	460,814	51,640	89.9	1.042		
<b>Oji Paperboard Co., Ltd.</b>	11	1,002	1,947	155,824	85,600	82,169	3,431	96.0	0.132		
<b>Oji Specialty Paper Co., Ltd.</b>	9	1,701	1,024	274,297	48,822	44,512	4,310	91.2	0.852		
<b>Oji Nepia Co., Ltd.</b>	3	400	354	22,700	10,649	9,053	1,597	85.0	0.682		
<b>Oji Cornstarch Co., Ltd.</b>	3	6	54	2,080	3,072	2,346	726	76.4	0.188		
<b>Oji Chiyoda Container Co., Ltd.</b>	32	132	61	5,258	105,033	104,111	923	99.1	0.091		
<b>Mori Shigyo Group</b> (excluding Oji Paper Co., Ltd.)	21	150	40	12,784	73,878	72,937	940	98.7	0.108		
<b>Oji Tac Co., Ltd.</b>	2	12	4	92	2,766	2,692	74	97.3	0.229		
<b>Yupo Corporation</b>	1	0	0	0	789	751	38	95.1	0.182		
<b>Oji Kinocloth Co., Ltd.</b>	2	0	13	0	2,104	2,058	46	97.8	0.194		
<b>Oji Packaging Co., Ltd.</b>	2	0	0	5	7,257	7,182	75	99.0	0.100		
<b>Total for 22 other affiliates</b>	67	138	42	11,052	21,174	19,258	1,916	91.0	0.476		
<b>Total</b>	162	10,285	13,088	1,681,876	873,599	807,883	65,716	92.5	0.590		

Oji Paper values authentic communication with customers. Our products themselves are one of the best ways for people to learn about our sustainable business model, which is based on forest recycling and paper recycling.

The Oji Paper Group's strongest channel for communicating with customers should be its paper products themselves. Yet we must ask ourselves how many consumers are really familiar with our business activities. Due to the nature of our business as a major paper manufacturer, our direct interaction with general consumers has been somewhat limited. To fulfill our social responsibility and meet customers' expectations, we are striving to find new ways to communicate so that as many people as possible have the chance to understand the sustainable business model of the Oji Paper Group—in particular our commitment to forest recycling and paper recycling. This page introduces some of the progress we are making in this area.

Case Study 1: **Oji Chiyoda Container Co., Ltd.**

### Development of collapsible packaging and Chaba Board

Oji Chiyoda Container, working with its client Sharp Corporation, has developed cardboard packaging that can be easily folded to a very small size (photo 1). These collapsible boxes, which are used as packaging for audio devices and LCD TVs, feature an illustration on the box that shows how to fold it up. Many local authorities have maximum size rules governing curbside cardboard disposal, and this collapsible packaging eliminates the need to use a box knife and tie string. We hope this product will encourage consumers to participate in the recovery and recycling of used paper.

Collaborating with Kirin Beverage Company, Limited, Oji Chiyoda Container has also developed Chaba Board (photo 2), which is made by blending in used tea leaves. Japanese people are consuming more and more tea drinks recently, but there have been few means of utilizing used tea leaves other than for fertilizer. Chaba Board effectively utilizes used tea leaves by taking advantage of the deodorizing and antimicrobial effects of catechin, a component in the used tea leaves. And, of course, Chaba Board can be recycled into cardboard after it is used.

Case Study 2: **Oji Nepia Co., Ltd.**

### Slimmer tissue boxes

The paper industry, which requires large amounts of energy, is working hard to conserve energy and reduce environmental impact. As one part of that effort, Oji Nepia pioneered slimmer tissue boxes. Compared to earlier Nepia products, the Nepia Slim

Tissue box is now about 40% shorter (figure 1). The content is the same and there is no loss in the usual softness of the tissues. The size reduction was accomplished by devising a manufacturing process that prevents excess air from entering the box. This has also improved the load efficiency of trucks. For example, we now need only 80% of the trucks it used to take when shipping 100,000 packs in 11-tonne trucks from Nagoya to the Tokyo Metropolitan area. This means a reduction of 1.6 tonnes of CO<sub>2</sub> and about 4.9 kg of NOx emissions from truck transport for every 100,000 packs shipped.

Figure 1 Slimmer Tissue Boxes



Photo 1  
Collapsible Packaging that can be easily folded and recycled.



Photo 2  
Cardboard made with used tea leaves, for effective utilization of resources.

#### VOICE

I interact with many customers over the phone. I take each call as if playing for keeps. I try to treat customers in a way that leads them to feel, "I am really glad I called," or "Nepia is my new favorite."



**Kimiko Yoshida**

Nepia Customer Service Representative



"From the Nepia Forest"  
Oji Nepia uses illustrations in its "From the Nepia Forest" website to clearly introduce its environmental conservation activities, forest recycling, and paper recycling.

Our human resources programs are designed to ensure employee health and safety, provide comfortable workplaces, and give all employees the opportunity to prosper as they realize their full potential.

## The Oji Paper Group's human resources philosophy

### ● Management based on respect for people

The Oji Paper Group is proud of its excellent labor relations, characterized by bonds of affection and trust cultivated over a 130-year history. 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.

**Table 1 Main Human Resources 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 having the right person in every job.
"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.

### ● Improving the workforce

The rapid diversification of Japanese society is being driven by forces such as technological innovation, globalization, the aging of the population and the declining birthrate. To successfully navigate all this change, Oji Paper is working to establish a solid business foundation that can respond flexibly to any circumstance. We see education and other programs to strengthen and strongly motivate our workforce as the key to building such an organization—we believe our people are the wellspring of all business development. Accordingly, we have been implementing a major overhaul of our group human resources system, including affiliates. The changes are focused on three priority areas: (1) creating a culture where people take the initiative to learn; (2) strengthening competence on

the job; and (3) enhancing education to foster the top managers of the future.

## Striving to diversify our workplaces

### ● Creating workplaces that are comfortable for women

The Oji Paper Group strives to ensure that raising children and work are compatible, supporting employees' commitment to childcare by providing leave programs and helping with finances ([Table 2](#)). In fiscal 2006, 16 female employees made use of childcare leave programs (88.9% usage rate).

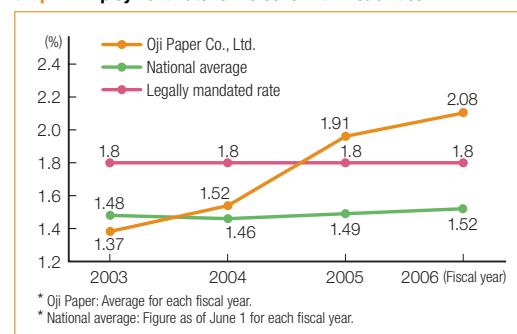
**Table 2 Measures Supporting Childcare at Oji Paper Co., Ltd.**

Free childcare consultation service	Oji Group Health Consultation Office
Shorter working hours system	Systems (flextime, part-time) to enable care for children before they start elementary school
Encouraging childcare leave	Encouraging male employees to take childcare leave
Expanding situations under which reserve leave can be taken	Reserve leave can now be taken to care for children who are sick or injured
Paying a partial salary during childcare leave	Paying a partial salary to employees from the time they start childcare leave until their child reaches one year of age. This goes beyond the requirements of Japanese law.

### ● Employment of persons with disabilities

We have been working in cooperation with public agencies and NPOs to further the employment of persons with disabilities since fiscal 2004. As a result, the employment rate for persons with disabilities surpassed 2% at Oji Paper ([Graph 1](#)) in fiscal 2006. In July

**Graph 1 Employment Rate for Persons with Disabilities**



2007, we established a special subsidiary for the employment of persons with disabilities. We will continue to work actively to ensure stable employment and expand the occupational fields available to persons with disabilities.

## Working toward a healthy work-life balance

In 2006, Oji Paper conducted an internal questionnaire about the Oji Paper Group Behavior Standard. Many respondents indicated that it has been difficult to take paid holidays and compensatory time off. There were also disparities among workplaces in the amount of overtime that people work. In light of this situation, the human resources department recently sent a message to all facilities encouraging the reduction of total work hours. At present, we are making a group-wide effort to ensure that employees can enjoy a satisfying work-life balance: we are reconsidering work assignments, improving efficiency, and exploring various new work styles.

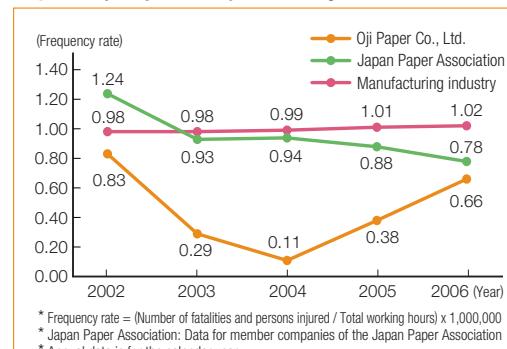
## Securing safe, healthy workplaces group-wide

### ● Occupational safety and health initiatives

In 2006, we addressed various issues using the Oji Paper Group Guidelines for the Promotion of Occupational Safety and Health. Management and employees worked together to eradicate serious

accidents, the company adopted an occupational safety and health management system (OSHMS), and we encouraged a culture of safety and strengthened safety measures at our group affiliates. The OSHMS went into effect at all Oji Paper mills and some mills operated by our four main subsidiaries. The focus of this effort is to move from zero accidents to zero risk by making implementation of the PDCA cycle the mainstay of our risk management. Group-wide in 2006, there were 32 accidents resulting in absence from work, eight more than in 2005. Thankfully, there were no fatal accidents. In 2007, we will expand the OSHMS to cover all the mills operated by our four main subsidiaries.

**Graph 2 Frequency Rate of Injuries Leading to Lost Work Time**



### ● Safety awards

In 2006, one mill out of a total of 10, plus one facility, won Oji Paper's Award for Safety Excellence (a total of six million accident-free working hours at the mill and its partner companies).

## Strengthening the spirit of unity group-wide and ensuring sound labor-management relations

### Makoto Mieda

President  
Oji Paper New Workers' Union

Building an open corporate culture where people can talk frankly about workplace problems is the most important thing we can do to encourage CSR and increase corporate value. Any misconduct can damage recruitment potential and even jeopardize the survival of the company.

The labor union must participate in the CSR activities that the company is working on, in part to help protect employment. At meetings and training sessions, I use the Environmental and Sustainability Report and call on union members to remain constantly aware of the need to meet the expectations of society.



Expanded labor-management committee, joined by labor and management from our four main subsidiaries.

Employment levels cannot be maintained unless all group companies work with a spirit of unity to prevail over the competition. Sound labor-management relations are vital to building a sense of unity across the group and to strengthening competitiveness. In this conviction, we have been requesting that labor-management committee dialogue be expanded to include labor and management from the four main subsidiaries as well. This became a reality in December 2006. Going forward, we will continue to deepen and expand the labor-management dialogue.

## What can we do to build a stronger spirit of unity and solidarity throughout the entire Oji Paper Group?

In March 2007, we hosted a roundtable discussion for newly appointed managers from group companies. We chose for the topic a vital issue for group management: how to build a stronger spirit of unity and solidarity across the group. New managers are in line to carry the group's management into the future. The participants talked frankly for two hours about the challenges and solutions to building unity and solidarity as well as their role in the process as new managers (photo 1).



**Photo 1** New managers exchange views at the roundtable discussion.

### Making the most of the group's potential

Initial opinions included: "People at headquarters have an awareness of the Oji Group, but that is not the case for people working in the mills." "Each of the group companies has a different background, a different culture, and it is hard work to iron out the differences." "We all share the basic group management policy, but that doesn't necessarily mean we're unified at the worksite level, since our jobs differ so much."

One participant remarked, "I don't even know which group companies handle which products and businesses, since there are so many companies within the group," but then continued, "It would be easier to leverage the group's advantages if this information was widely known. I want to create opportunities for myself and others to learn about the business of each company." Another person added, "The strength of the Oji Group is that it is possible to get support from various departments."

Another participant pointed out that a spirit of unity can be lacking even within the same company: "I am

in sales and have few opportunities to go to mills. I have never actually seen products being made. I don't really have a clear sense of what sort of people are making our products. He continued, "A spirit of unity within the company would likely emerge if people could immediately visit a mill for consultation when problems arise," stressing the importance of face-to-face communication. Due to the large scale of the Oji Paper Group, this can be difficult, remarked another, "So we need to make an active effort on our own. For instance, people from sales should go along when people from the technology department or the production management department go to the mills."

### Sharing group information and communication among employees

The free-ranging discussion moved on to the sharing of information and know-how within the group. One manager said, "The information one can get in a sales branch or regional location is limited. When a problem occurs, we often suffer through it on our own, without the benefit of know-how from other group companies

that are doing better." Another agreed, "The group holds liaison meetings, but information does not trickle down far enough." In response to these descriptions of actual experiences, another participant said, "If we knew where to turn when problems occur, it would take less time to solve them." This discussion led the group to propose a solution—establishing a single contact point where any group company can request help or ask for needed information.

The conversation then turned to communication among employees: "An organization is ultimately nothing more than its people. Organizational functioning entirely depends on the quality of the links between individuals. If communication can get started via a single contact point, the links between people could spread from there, making it possible to share more information and know-how." One participant pointed out, "In the past, there was more nonworking communication. People used to consult with each other outside departmental boundaries when they had trouble. Such cases have become far and few between." In response, another participant added, "It seems few friendships go beyond the workplace. But, having participated in this discussion, I have had a change of mind. I would like to pursue better relationships with my peers." Another person stated, "The group baseball tournament is a good chance to connect with people. We should have more activities like this."



**Jiro Kodama**  
Manager, Administration Department,  
Kasugai Mill  
Oji Paper Co., Ltd.



**Chitose Yoshimura**  
Senior Research Chemist, Imaging  
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**Kazuhiro Kobayashi**  
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**Takanori Suwa**  
Manager, Research and Technology  
Department, Tokai Mill Fuji Facility  
Oji Specialty Paper Co., Ltd.



**Chikao Hojo**  
Manager, Engineering Department,  
Technology & Engineering Division  
Oji Chiyoda Container Co., Ltd.



**Toshikazu Hayashida**  
Manager, Household Paper Products  
Division  
Oji Nepia Co., Ltd.



**Masahiro Koyama**  
Manager, First Sales Division  
Oji Packaging Co., Ltd.



**Isao Kageyama**  
Manager, Self-Adhesive Products  
Sales Department  
Oji Tac Co., Ltd.



**Hideshi Komuro**  
Manager, Sales Department, Eastern  
Japan Business Division  
Oji Logistics Co., Ltd.

## Do employees feel an affinity for Oji Paper? It all starts in our own workplaces.

Many participants were in accord with this view: "If every employee were to feel more like a member of the Oji Paper family, it would certainly translate into a stronger spirit of unity and solidarity throughout the group. As new managers, we must take the initiative to ensure that people really like the group they work for." Participants offered some specific ideas on increasing the affinity employees feel for the group, including running TV commercials introducing environmental

initiatives that group companies are proud to show to society, and implementing group-wide assistance campaigns to help victims of disasters.

Wrapping up the discussion, the new managers expressed enthusiasm for the future. "Personally, I came to like Oji Paper because I was fortunate to have supervisors and managers whom I respected. As a manager myself now, I think it is important to be the kind of person whom the people under me can trust." "It is important to start in one's own workplace when trying to produce solidarity across the group. I want to behave mindfully, as a bridge-builder who creates connections between people."

### Expectations of the new managers who will carry group management into the future

#### Michio Igashira

General Manager, Personnel Department, Human Resources Headquarters  
Oji Paper Co., Ltd.

This roundtable raised issues that are vital to the growth of the Oji Paper leaders of the future. We need to build a stronger sense of unity and solidarity across the Oji Paper Group, and we must pursue proactive human resources development for both managers and employees at each group company. This discussion brought out the views of new managers from different companies—the people who will carry the management of the

group into the future. They spoke frankly about problems faced at different levels, how the group ought to be, and what they, as new managers, can and should do. I have great expectations for the participants in this roundtable: I believe they will play an active part as leaders in the vanguard of their workplaces. As manager of the Personnel Department, I am also determined to deliver personnel systems, human resources development programs, and workplace environments that enable employees to feel a real affinity for and pride in the Oji Paper Group.



The Oji Paper Group makes every effort to foster meaningful communication with the communities near its tree plantations and mills, and strives to gain their understanding for its operations.

### **Consideration for residents near the Oji Paper Group's tree plantations outside Japan**

#### **● Proactive engagement with local NGOs — Pan Pac Forest Products Ltd. (New Zealand)**

Pan Pac routinely communicates with local NGOs — for example, with the Royal Forest and Bird Protection Society, which has its central office in Wellington, the capital of New Zealand. With 56 branches nationwide

and about 40,000 members, it is New Zealand's biggest environmental organization. The Society works to protect natural forests and rare species, including the kiwi bird, a national treasure that is in serious decline. In New Zealand, non-native vermin are enemies to the kiwi and other native bird and plant species. Since they not only kill birdlife but also eat vegetation, they are a threat to both healthy native forest regeneration and plantation forests. Therefore, the government promotes pest control. As part of this effort, Pan Pac has established programs to

### **Protecting our own, on our own**

#### **Ed Saathof**

Forestry Manager, Pan Pac Forest Products Ltd. (New Zealand)

As the Pan Pac forest manager, it is my regular job to manage the forest. In addition, I am a member of BFRED, the volunteer fire brigade in the Hawkes Bay region. Based on the philosophy of "protecting our own on our own," we will deploy to fight fires when a forest fire starts, even if it is not in a forest managed by Pan Pac. We even went all the way to Australia to fight a forest fire. I am proud that BFRED is number one when it comes to forest fires.



Ed with a fire truck owned by Pan Pac. He is sent out when fires occur in neighboring forests as well.

### **Pan Pac is managing its forests well**

#### **Ian Noble**

Royal Forest and Bird Protection Society  
Hastings Branch

We aim to protect natural fauna and flora, and whenever the natural environment is in danger, we urge both the government and private enterprises to take action. It is not our policy, however, to seek conflict. Instead, we strive to work together to resolve problems.

Some Society members at first expressed concern about Pan Pac's pine forests. Most of Pan Pac's plantations have been planted on hill country land that proved unsuitable for farming operations. Originally, early settlers to New Zealand deforested the land.

However, the care taken with Pan Pac's pine forests and its involvement in conservation activities to preserve native flora and fauna have impressed many Society members. The attention given to protecting stream quality, the careful harvesting and replanting programs,



Three members of the Royal Forest and Bird Protection Society and, second from the right, Brett Gilmore, Pan Pac's Environmental Adviser.

plus the obvious economic benefits to the region have changed the opinions of many of our members.

Japan has a much longer history of managing its natural flora and fauna, and we can learn much from observing the way that the Japanese take care of their forest heritage.

control pests in its own forests. In addition the company actively supports the Royal Forest and Bird Protection Society and others with their animal pest control programs. This includes the Society's Blowhard Bush Reserve, which neighbors Pan Pac's Kaweka Forest.

Pan Pac has also provided other assistance for the Blowhard Bush Reserve including construction assistance when building a forest shelter, accommodation to Society members at the local Pan Pac forest headquarters and road maintenance. Schools and the public use the shelter and reserve for forest experience and education.

#### ●Awards at the Oji Paper Group's tree plantations outside Japan

In October 2006, Masanori Morisaki, deputy managing director of our tree plantation company CPFL in China, was elected as an Honorary Citizen of Nanning. His cultural exchange activities, such as sponsorship of the Japanese Language Corner, and his leadership, demonstrated by running the affairs of a Japanese business association, were recognized.

In October 2006, Kuniaki Baba, president of our tree plantation company QPFL in Vietnam, was elected and honored as one of the 2006 "Typical Vietnamese Entrepreneurs in Binh Dinh Province." This was the first time someone from a non-Vietnamese company had been elected in the province. An 11-year record of plantation operations, joint afforestation with local companies, and a program that provides seedlings to local residents were highly evaluated.

In November 2006, our chip processing and export company APEC in Australia won a Western Australian Industry and Export Award in the regional exporter category, and was elected as the company for the federal nomination. The company's achievement—gained over a 10-year plus effort—in turning plantation production and the chip business into the region's main industry was recognized.

### Aiming to develop mills open to the community

#### ●Valuable feedback and information from environmental monitors

At all its mills throughout Japan, the Oji Paper Group has implemented an environmental monitor system, in which mills receive feedback and information from nearby residents. This has proven an effective means of deepening communication with local communities. We believe that responding reliably to the diverse voices of nearby residents and proactively releasing information will help further our environmental initiatives, including the control of vibrations, noise, and odors, and also lead to the restoration of full trust. The matters pointed out by environmental monitors also spark the improvement of facilities. We are determined to continue valuing connections with communities while receiving the cooperation of environmental monitors.

#### ●Meeting with Environmental Monitors held at Fuji Mill

In fiscal 2006, the Oji Paper's Fuji Mill asked 14 people to become environmental monitors. Mill employees visited the homes of these people once a month to ask for their opinions and requests, which the mill responded to. To cap off the year's activities, the mill held a meeting to hear their opinions in March 2007 (photo 1).

The monitors provided feedback evaluating the mill's efforts, including: "I can sometimes feel vibrations, but there has been an improvement since last year" and "It has become really quiet compared to 10 years ago." We were also glad to receive such comments as: "It has been helpful to be able to speak my mind frankly" and "I am grateful that you have responded so enthusiastically."

We are committed to putting greater effort into environmental measures and communication with communities in the future.



**Photo 1** Lively questioning at the meeting with environmental monitors.

### A message to monitors and community residents near the Fuji Mill

#### Toru Ohishi

General Manager, Environment Management Office,  
Fuji Mill  
Oji Paper Co., Ltd.

In July 2007, it was discovered that the Fuji Mill had emitted smoke in excess of levels agreed upon with the local authorities and submitted false data about it. We immediately apologized and explained the situation to our environmental monitors and the local residents. I extend our apologies again for our having betrayed everyone's trust. Going forward, everyone at the mill will make a united and sincere effort to regain your trust and protect our precious local environment.



The Oji Paper Group is committed to fulfilling its corporate social responsibility, and strives to make a difference in each local community as a good corporate citizen should. Our initiatives take full advantage of our core business to benefit local residents.

## Corporate citizenship initiatives

The Oji Paper Group strives to conduct all its operations in a way that harmonizes with the local communities in Japan where it produces paper and converted paper products at mills and facilities.

### Groundwork activities

We have extended the ethos of the Japan Groundwork Association<sup>\*1</sup> to all of our business establishments across Japan. In fiscal 2006, Oji Paper conducted 1,585 groundwork activities, such as community clean-ups and tree planting, in which a total of 23,652 employees participated.

### Fuji River Clean-up

Every July, as part of our groundwork activities, the Tokai Mill Iwabuchi Facility of Oji Specialty Paper participates in the Fuji River clean-up sponsored by Fujikawa Town in Shizuoka Prefecture. A total of about 70 people including our employees and members of a safety association participated in the clean-up on July 2, 2006 (photos 1 and 2).



Photo 1 Oji Paper Group employees and their families and the safety association participating in the clean-up.



Photo 2 The collected rubbish was separated for recovery.

#### \*1 Japan Groundwork Association

A volunteer organization that originated in the UK. The ethos of the association is that citizens, local governments, and companies should work together to contribute to the local environment. In October 1995, Oji Paper became the first corporate member in Japan.

#### \*2 ESD-J

A network organization that promotes education geared to the building of a sustainable society, including environmental education. The network is composed of NGOs, NPOs, and individuals who are working to address a variety of social issues including the environment, development, and human rights.

### Recovery of disposable chopsticks and the disposable chopsticks donation fund

Since 1992, the Oji Paper Group has been collecting used disposable chopsticks and effectively utilizing them as a raw material for papermaking. In fiscal 2006, we collected about 461 tonnes of disposable chopsticks and donated 460,000 yen (1,000 yen for every tonne of disposable chopsticks) to the NPO Japan Council on the UN Decade of Education for Sustainable Development (ESD-J).<sup>\*2</sup>



Photo 3 Children from an elementary school association from Tomakomai, Hokkaido, which cooperated in the collection of disposable chopsticks.

### Fujihara Foundation of Science

In 1959, Ginjiro Fujihara, a former president of Oji Paper who retired from that position in 1938, made a personal donation of 100 million yen to establish the Fujihara Foundation of Science with the aim of promoting science and technology in Japan. Oji Paper supports the foundation financially. Two Fujihara Awards, along with prize money, are given each year to Japanese scientists who have made a distinguished contribution to the development of science and technology (photo 4).



Photo 4 The 47th Fujihara Award Ceremony.

### NPO Mori no Uta ("Song of the Forest")

In cooperation with various people who have an interest and knowledge in interaction between people and the natural environment, Oji Paper established the NPO Mori no Uta ("Song of the Forest") in 2004.

The NPO's activities are based in our company-owned forest (Miho Forest) that spreads out along the western side of Lake Tanzawa in Yamakita, Kanagawa Prefecture. In October 2006, we invited a clinical psychologist there to hold a relaxation workshop (photo 5). In March 2007, we cooperated in the Forest Interaction and Health Therapy Forum sponsored by Yamakita Town, during which we provided a relaxation experience in the forest.



Photo 5 Relaxation workshop.

#### ● Oji Forest Nature School

The Oji Paper Group opened the Oji Paper Nature School in cooperation with the Japan Environmental Education Forum (photo 6). The Oji Paper Nature School is a hands-on environmental education program that helps children to gain a deep appreciation of the relationship between nature, human life, and industry through first-hand experiences in our company-owned forests and mill tours. In fiscal 2006, the third year of the program, we opened a school in Hiroshima Prefecture in addition to the Nishi Tanzawa School in Kanagawa Prefecture.



Photo 6 Tree climbing at the Nishi Tanzawa School in 2006.

#### ● Expanding beech forests at the foot of Mt. Fuji

Every year, as part of our groundwork activities, Oji Paper's Fuji Mill participates in a project to expand beech forests at the foot of Mt. Fuji sponsored by Fuji City, Shizuoka Prefecture. This project has been implemented by Fuji City since 1994 with the aim of passing on the precious natural environment of the foot of Mt. Fuji and having people feel the magnificence of the mountain. On Greenery Day (April 29) in 2006, a Japanese holiday, about 30 people from the

Oji Paper Group participated in the project by helping to plant beech trees (photo 7).



Photo 7 Oji Paper Group employees and their families who participated in the project to expand beech forests at the foot of Mt. Fuji.

#### ● Joint afforestation with the Tomakomai Fisheries Cooperative Association

The 56th Tomakomai Mill Tree Planting Festival took place at our company-owned forest in Tomakomai on May 23, 2006. This was the 12th time we held the tree planting festival, which is part of the groundwork activities conducted by the Tomakomai Mill. The festival is held jointly with a campaign to expand greenery and increase the number of fish, developed by the women's section of the Tomakomai Fisheries Cooperative Association. In spite of the poor weather, employees of the Oji Paper Group and members of the Fisheries Cooperative Association and a retail store association—about 80 people all together—planted 500 red yezo spruce and 500 water oak seedlings.



Photo 8 Participants carefully planting each tree.

#### ● Hands-on environmental workshop in Chuo City

On December 9, 2006, Oji Paper put on an exhibit at the 3rd "Try It with Kids Environmental Festival" held at the Kyobashi Tsukiji Elementary School in Chuo City, Tokyo. Sponsored by the Chuo City Environmental Protection Network, this festival is a community-based, hands-on workshop on the environment. It is held at an elementary school in Chuo City with participation from about 30 companies, the government, and local authorities. This year, we had the cooperation of a paper museum and provided a papermaking experience (photo 9).



Photo 9 Children experiencing papermaking.

## Record of Accidents and Awards

### Compliance issue at hydroelectric power plants

The Oji Paper Group owns hydroelectric power plants at 19 locations belonging to four mills: the Tomakomai Mill and Fuji Mill<sup>\*1</sup> of Oji Paper and the Nakatsu Mill and Tokai Mill Shibakawa Facility of Oji Specialty Paper.

In February 2007, we conducted a self-inspection of hydroelectric power plants, following instructions from the Ministry of Land, Infrastructure and Transport based on Japan's River Law. Through these inspections it was discovered that structural improvements had been made without applications and permits, water intake for cooling water had been used for other purposes, and false data on the volume of water intake had been submitted. In March 2007, the river administrator instructed us to reduce the volume of water intake at some hydroelectric power plants.

The Oji Paper Group submitted reports on its self-inspection results to the governing agencies and posted on its webpage an apology and a plan to prevent a recurrence. We also announced that the group would take measures in accordance with any instructions later sent by the river administrator. This incident can be traced to an inadequate awareness of regulatory requirements and an insufficient ethos on legal and regulatory compliance. With guidance from the river authorities, we are earnestly working to redress every issue and taking forthright measures to prevent any recurrence.

### Smoke emissions standards exceeded

In July 2007, it was discovered that the smoke emitting facilities at eight mills of Oji Paper and Oji Paperboard were emitting nitrogen oxides and sulfur oxides in excess of the emissions standards stipulated by Japan's Air Pollution Control Law. See page 2 for full details.

### Accident report

From fiscal 2006 to July 2007, four accidents occurred at Oji Paper Group facilities: a leak of heavy oil to a waste treatment facility; a leak of mill effluent to a drainage system; and a leak of unneutralized alkaline chemicals off premises. Although there was no harm done outside Oji Paper's property, we recognize that we must better address basic issues like

equipment maintenance, training in work procedures, and other measures to prevent a recurrence.

### Oji Paper's excellent waste management publicly recognized

The Japan Environmental Management Association for Industry, which is under the jurisdiction of the Ministry of Economy, Trade and Industry, has launched a Waste and Recycling Governance registration program with the aim of promoting excellent waste management and recycling. In March 2007, all nine Oji Paper mills were registered as "gold" enterprises.



Certification mark for Kushiro Mill, which was the first registered.

### Record of awards

#### ● Green Reporting Award

In April 2007, the *Oji Paper Group Environmental and Sustainability Report 2006* won the award for excellence in the 10th Green Reporting Awards cosponsored by Toyo Keizai Inc., and the Green Reporting Forum.

#### ● Japan Environmental Management Award

In May 2007, the initiative to reinvigorate Japanese forestry through adoption of the 3.9 (Sankyu) paper system,<sup>\*2</sup> a joint effort by Ichise Co., Ltd., Oji Paper, Japan Energy Corporation, and Zephyr Co., Ltd., won the Environmental Value Creation "Pearl" Award at the 5th Japan Environmental Management Awards sponsored by the Japan Environmental Management Awards Commendation Committee and Mie Prefecture.

<sup>\*1</sup>  
Hydroelectric power plants now managed by the Tokai Mill Fujinomiya Facility of Oji Specialty Paper

<sup>\*2</sup>  
**3.9 (Sankyu) paper system**  
A system for shifting the burden of transportation costs to users when delivering thinned timber to chip plants in Japan as a papermaking raw material. The aim of the system is to support forest development in Japan by expanding the use of thinned timber.

# Third-party Opinion of This Report

This report led me to reflect once more on the meaning of "the environment" for corporate management.

First, I thought about pollution control. The paper industry in Japan today has a reputation for being a leader in efforts to control pollution, thanks to the comprehensive anti-pollution measures paper companies took after learning their lesson from incidents of sludge and smoke pollution in the 1970s. With the corporate approach to the environment having shifted from mere pollution control to environmental management since the mid-1990s, the recent series of smoke incidents came as a surprise, bringing back memories of the old, inadequate pollution control scheme. It seems that this took President Shinoda and the rest of the executive staff by surprise, as well. In his message at the front of the report, Mr. Shinoda asserted, "These incidents can be traced to insufficient employee awareness of the importance of environmental preservation and compliance. I and the rest of the management team take full responsibility for allowing this." Mr. Shinoda's sincere commitment and straightforward approach as top executive comes across, despite his consternation. Yet, after reading the report, it is still not clear to me whether the incidents of misconduct were simple mistakes due to differences in measurement methods or whether they had roots in real problems with the organization such as intentional falsification to bring costs down. The inadequacy of the information on the incidents may merely reflect the current level of chaos within the company, but I hope that the next report includes a detailed account, including elucidation of the causes and how the company has changed its in-house systems and corporate structure based on the lessons learned from these incidents. I also hope that the company will make these incidents into an opportunity to build a truly open corporate culture.

The second topic of my reflection was environmental management. Environmental problems are now a global issue that threatens the very existence of the globe, the foundation of human survival. The report describes how the company has built a recycling-based business model that includes sustainable forest management, well-managed forest resources, and paper recycling, and it states that this model is helping to prevent global warming and preserve biodiversity. Paper gets top marks when it comes to recycling, and the paper industry was also among the first to tackle energy conservation through the utilization of biomass and combined heat and power systems in manufacturing processes. Oji Paper is certainly one of the leading examples of proper environmental management in the paper industry.

I have one concern, however. Despite the close contact Oji Paper enjoys with the natural forest environment, the basic message conveyed throughout the report was simply that "forests are an indispensable raw material for our business." What was missing was a sense of the awe and gratitude that humans have always felt for the forest since ancient times.

I commend the courageous inclusion of the site report on the natural forest operations of Gunns Limited in Tasmania, which has been criticized for its logging methods. However, if the company wants to present this as stakeholder communication, it would have been more convincing to present the views of all sides—the issues raised by the NGOs that criticize Gunns, then Gunns' point of view on those issues, and finally Oji Paper's opinion after an on-site inspection.

Given the gravity of the problem of global warming, it is about time that the company changes its energy conservation targets from per-unit-of-production to absolute quantity.

As expressed in the company's corporate philosophy, paper is a business that exists



**Mariko Kawaguchi**

Senior Analyst, Management Strategy  
Research Department  
Daiwa Institute of Research Ltd.

Joined Daiwa Securities after receiving a master's degree from Hitotsubashi University Graduate School in 1986. Transferred to Daiwa Institute of Research in 1994. Appointed to current position after working in corporate research and other fields. Research expertise is in socially responsible investment (SRI) and corporate social responsibility (CSR). Publications include *Guide to Socially Responsible Investment* (coauthor) and *CSR Management* (coauthor), etc. Also serves as a part-time instructor at Aoyama Gakuin University and Nanzan University.

where the environment (nature) and culture (humans) meet. I hope that Oji Paper will turn the recent embarrassing misconduct into motivation to change its basic attitude from one of controlling the environment, the focus of which is effectively utilizing nature as a resource for human beings, to a commitment to the true sense of environmental management, which is to pursue social affluence while being grateful for the abundance of nature and doing it no harm.

## Response to third-party opinion

Regarding the smoke incidents, we have started efforts to prevent a recurrence by immediately rebuilding a firm environmental management system at the mills where the problems occurred and all other paper mills and by strengthening our environmental auditing across the board.

Our forest recycling program is literally dependent on the blessings the forest provides. Though it may not have been stated explicitly in this report, gratitude for the blessings of nature has always guided our procurement of wood raw materials and is the basis of our philosophy of sustainable forest management. In all of our afforestation projects, we remain committed to working in harmony with the surrounding environment and communities as we make the best possible use of forest resources.

Regarding the forest management of Gunns Limited, we have

been trying to arrange dialogues with environmental protection organizations and the Australian government, and we intend to provide updates on this effort. As for changing energy conservation targets from per-unit-of-production to absolute quantity, I agree that we should consider this the need of the times. With gratitude for the feedback from Ms. Kawaguchi, I would like to ensure readers that Oji Paper will continue to fulfill its social responsibility by practicing recycling-based papermaking with great consideration for both the natural environment and human society.



**Shinichiro Kondo**

Director, Executive Officer  
Oji Paper Co., Ltd.



#### About the cover photo

The cover photo was taken at a tree plantation in New Zealand. Seedlings are being planted following the harvesting of Radiata Pine (Monterey Pine), 30 years after the pine had been planted as wood for lumber. Plantation trees are visible in the background. On the left are 30-year old trees that have reached harvesting age. On the right is an area being logged. We hope this photo illustrates the principle of forest recycling: the cycle of planting, growing, harvesting, and re-planting. This plantation has acquired FSC certification. See page 17 for details.



地球を救おう森のリサイクル  
王子 チーム・マイナス6%

The "Team Minus 6%" logo, created by the Japanese government for the national campaign to achieve Japan's Kyoto Protocol commitment of a 6% reduction in greenhouse gases. The mark has been adapted by Oji Paper.



Oji Paper's own mark for paper made from 100% recycled paper.



A mark for FSC-certified paper, used for pages 2-65.



Oji Paper's own mark for paper which contains pulp made from planted forests.



Oji Paper's own mark for paper which contains elemental chlorine free pulp.



Trademark of American Soybean Association