

R I C O H G R O U P
S U S T A I N A B I L I T Y
R E P O R T **2003**
(ENVIRONMENT)

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To promote its own sustainability and contribute to the development of a sustainable society, the Ricoh Group established its CSR (Corporate Social Responsibility) Division in January 2003. The office supervises all departments involved in activities that aim to fulfill the Ricoh Group's corporate social responsibilities, including environmental conservation.

◎ Change in the scope of this report following the establishment of the CSR Office

The corporate social responsibility-related information traditionally included in the *Ricoh Group Sustainability Report (Environment)* will be provided in a separately published report. The Ricoh Group's environmental management-related activities will be given in this report.

◎ Editorial policy for the *Ricoh Group Sustainability Report (Environment)* 2003

This report is aimed to clearly explain the Ricoh Group's concept of and specific measures and activities for sustainable management to all Ricoh Group stakeholders in order to facilitate communications and receive and integrate feedback into the Ricoh Group's sustainable management. To show our goal more clearly, we changed the name of our Japanese report from *Shakai Kankyou Houkokusho* (Social/Environmental Report) to *Kankyou Keiei Houkokusho* (Environmental Management Report) in 2002. However, the name of the English version shall remain the same, i.e., *Ricoh Group Sustainability Report (Environment)*.

● Target readers

This report is prepared for all readers, including users of Ricoh products, suppliers, local communities, shareholders and investors, rating agencies, environmental specialist, people in charge of environmental issues for their companies, researchers, students, administrators, NGO/ NPOs, and Ricoh Group employees. They are all present and future stakeholders in the Ricoh Group's sustainable management.

● Disclosing information worldwide

Environmental activities should be covered globally; however, it is also very important to take action closely connected with each country and community in which the Ricoh Group operates to tackle environmental issues. This report describes the Ricoh Group's environmental management activities that are based on global partnerships.

● Disclosing financial information

To successfully carry out sustainable management, the Ricoh Group endeavors to improve its management system by looking at all managerial aspects from an environment-conscious point of view. The Ricoh Group identifies the effects and economic benefits of environmental conservation for each business unit and for the entire Ricoh Group and discloses relevant information in environmental accounting.

■ Targeted Period/Scope of This Report

This report describes the sustainable management activities of the Ricoh Group in fiscal 2002 (April 1, 2002 to March 31, 2003).

Environmental impact and environmental accounting data: fiscal 2002 data

Descriptions in articles and chronological tables: fiscal 2002 data

Some of the subsequent events* are explained in the notes.

* Significant subsequent events shall be described in the report. Subsequent events refer to events that occur during the period from the day after the reporting period ends to the date the report is completed. Such events may influence the state of Ricoh Group's sustainable management from the next fiscal year onward. Disclosed subsequent events are useful as supplemental information to determine the state of Ricoh Group's for future sustainable management.

The environmental impact and environmental accounting data is taken from the Ricoh Group's major business sites in five (5) regions—Japan, the Americas, Europe, China, and the Asia-Pacific region—and, as such, may differ from the Ricoh Group data presented elsewhere in this report, e.g., in the organization profile and global network. The name “Rico” refers to “Rico” Co., Ltd.” and not the “Rico” Group” as a whole.

● Expanded Data Collection

Environmental impact and environmental accounting data are collected from Rico's production/nonproduction sites and the Rico Group companies that have established their own environmental management systems. In fiscal 2002, some sales companies and nonmanufacturing companies in Japan and some sales companies in Europe were newly included in the information collection.

● Important Organizational Changes Made during the Report Period

Rico China Co., Ltd., was established in January 2003 as regional sales headquarters in China.

● Past and Future Reports

The Rico Group has continued publishing annual environmental reports since 1997, which covered fiscal 1996. The 2003 Report in Japanese was issued in June 2003. The 2004 Report in Japanese will be issued in June 2004.

● How to Obtain Rico's Corporate Information:

Environmental conservation:

<http://www.rico.co.jp/ecology/e/>

Social contribution (Japanese only):

<http://www.rico.co.jp/kouken/>

IR (for shareholders and investors):

<http://www.rico.co.jp/IR/e/>

“APPLIANCE”*-related information (Japanese only):

<http://www.rico.co.jp/appliance/>

* “APPLIANCE” is a trademark of Rico Co., Ltd., registered in Japan.

● Scope of Collection of Environmental Impact and Environmental Accounting Data

Japan

Rico production sites:

Atsugi Plant, Hatano Plant, Numazu Plant, Gotemba Plant, Fukui Plant, Ikeda Plant, Yashiro Plant

Rico nonproduction sites:

Aoyama Head Office, Ohmori Office, Ohmori Office No. 2, Ginza Office, Rico System Center, Shin-Yokohama Office, Rico Service Parts Center, Research and Development Center, Software Research Center, Toda Technical Center, Applied Electronics Laboratory

Rico Group major manufacturing subsidiaries:

Tohoku Rico Co., Ltd.; Hasama Rico, Inc.; Rico Unitech Co., Ltd.; Rico Optical Industries Co., Ltd.; Rico Keiki Co., Ltd.; Rico Microelectronics Co., Ltd.; Rico Elemex Corporation

Rico Group major nonmanufacturing subsidiaries:

Rico Logistics System Co., Ltd.; Rico Techno Systems Co., Ltd.; 50 sales companies; and NBS Rico Co., Ltd.

*For environmental accounting data only

Part Component System Co., Ltd.

The Americas

Manufacturing company:

Rico Electronics, Inc. (U.S.A.)

Nonmanufacturing companies:

Rico Corporation (U.S.A.) and two sales companies

Europe

Manufacturing companies:

Rico UK Products Ltd. (U.K.)

Rico Industrie France S.A. (France)

Nonmanufacturing companies:

Rico Europe B.V. (the Netherlands) and 16 sales companies in the region

China

Manufacturing company:

Rico Asia Industry (Shenzhen) Ltd. (China)

Asia-Pacific Region

Manufacturing company:

Taiwan Rico Co., Ltd. (Taiwan)

Nonmanufacturing companies:

Rico Asia Pacific Pte. Ltd. (Singapore)

Rico Hong Kong Ltd. (Hong Kong)

To fulfill its mission as a global citizen, the Ricoh Group has taken it upon itself to contribute to the development of a sustainable society by promoting global environmental conservation.

Our mission is to conserve the global environment

The rich resources of our planet Earth have given birth to many forms of life and have supported the wide-ranging and ambitious activities of mankind. Nevertheless, recent activities have exceeded this life-sustaining ability of the Earth. This poses a threat not only to our coexistence with other forms of life on this planet, but also to the future of the human race itself. Global environmental conservation is the most important issue that all of mankind must face. We must recover the past capacity of the Earth and pass it on to future generations. To achieve this, we need to be more aware of the importance of the Earth in our personal lives, not just in our businesses, and strive to continuously change our corporate activities and lifestyles in order to reduce the impact society as a whole has on the global environment to a level that the self-recovery capability of the Earth can deal with. In recent years, people have been showing more interest in the environment. The Ricoh Group has long been working toward better environmental management by adopting environmental conservation as its mission and the idea that environmental conservation activities can be effectively carried out for the sake of the Earth if done on a continuous basis with the participation of more people.

Continuous global environmental conservation activities

Based on this idea, the Ricoh Group takes it upon itself as a global citizen to conduct environmental conservation activities on a continuous basis. Companies can continue an activity only if they themselves survive, grow, and develop. We therefore need to gain new economic benefits through environmental conservation

activities. We define sustainable management as the management of a company that contributes to environmental conservation and generates income for that company. All Ricoh Group employees are engaged in environmental conservation activities while pursuing profitability based on the concept of the Ricoh Group's definition of sustainable management.

Commitment to sustainable management

To improve sustainable management, we have incorporated "environmental viewpoints" into all aspects of management. Also, to limit the environmental impact of our corporate activities to a level that the self-recovery capability of the Earth can deal with, we are conducting environmental management and improvement activities on a daily basis. We aggressively market environment-friendly products to the public based on the development of environment-related technologies and, thus, potentially reduce our environmental impact indirectly through our customers. Moreover, we quantify any reduction in environmental impact and increase in economic benefits to develop our own environmental accounting system to improve the profitability and efficiency of our environmental activities. Through these measures, the Ricoh Group is committed to continuous environmental conservation to improve its sustainable management.

Activities conducted by all employees

Environmental conservation activities should not be conducted by employees in development and manufacturing departments only. Everyone, including those in business planning and sales, has some impact on the natural environment as a result of their work. Therefore, the Ricoh Group encourages all employees to

participate in environmental conservation activities. Specifically, employees are encouraged to develop and provide environment-friendly products and services and set up their workplaces to have less impact on the environment. These activities are expected to spread to business partners, customers, and the employees' families. With this in mind, the Ricoh Group is strongly supporting employees' environmental conservation activities.

Commitment to forest conservation

To recover and maintain the life-sustaining ability of the planet, it is of course not enough to simply reduce the environmental impact of our business activities. The Earth's life-sustaining ability is said to depend mainly on environmental ecosystems. In recent years, due to the destruction of forests where many creatures live, the planet's vital link to ecosystems has been damaged. To help solve this, the Ricoh Group is doing its best to conserve forest ecosystems in cooperation with NPOs and local communities all over the world.

Towards a sustainable society

Global environmental conservation activities should, of course, be conducted on a global scale, and all global citizens, including national and local administrations, companies, civil societies, and individuals, need to be aware of their own environmental impact and try to cooperate with each other to reduce it. The Ricoh Group lends its weight to the development of a sustainable society by being proof that a company can conduct environmental conservation activities continuously through sustainable management and encouraging more people around the world to participate in developing a sustainable society that limits its environ-

mental impact to a level that the Earth can tolerate.

To our readers

Sustainability Report 2003 outlines the activities the Ricoh Group is conducting on a global scale to contribute to the development of a sustainable society through sustainable management and solving global environmental problems involving all people around the world. We hope to discuss global environmental problems with many people throughout the world and that this report will help as many of you readers as possible discover the breadth of the Ricoh Group's concepts for environmental conservation and environmental measures. We welcome your honest opinion to further improve our sustainable management in terms of both quality and effectiveness.



Masamitsu Sakurai

President, Chief Executive Officer and
Chief Operating Officer, Ricoh Company, Ltd.

桜井正光

Profile of Organization

Ricoh Co., Ltd., was established on February 6, 1936. The Ricoh Group consists of 371 subsidiaries, and 24 affiliates*. The Ricoh Group engages in such global-scale activities as the development, production, marketing, after-sales service, and recycling of office equipment, including copiers and printers, optical devices, and other electronic equipment, in five regions around the world (Japan, the Americas, Europe, China and the Asia-Pacific region). The Group has more than 74,000 employees.

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Phone: +81-3-3479-3111
<http://www.ricoh.com>

* The definition of an affiliate is pursuant to U.S. Generally Accepted Accounting Principles (U.S. GAAP), which slightly differs from that found in Japan GAAP.

Ricoh Group Brands

The Ricoh Group markets products under its own brand name "RICOH" as well as the following.

Brand logos



Corporate Philosophy

The Ricoh Group's corporate philosophy—"The Spirit of Three Loves"—was established by its founder, Kiyoshi Ichimura. He explained the philosophy as follows: Everyone at least loves himself/herself. As time passes, however, this feeling of love grows and expands to include all people, plants, and animals in the world. This philosophy drives the Ricoh Group toward better sustainable management.

—The Spirit of Three Loves—

**Love your neighbor
Love your country
Love your work**

Management Philosophy

Ricoh's management philosophy was formally introduced in 1986 based on the corporate philosophy of "The Spirit of Three Loves" in order to establish and nurture the corporate culture and system so that survival in a time filled with increasing change, information-oriented societies, diverse values, and more intense competition could be ensured.

Our Purpose

**To constantly create new value
for the world at the interface of people
and information**

Our Goal

**To be a good global corporate citizen
with reliability and appeal**

Our Principles

**To think as an entrepreneur
To put ourselves in the other
person's place
To find personal value in our work**

Ricoh General Principles on the Environment

Ricoh introduced the Ricoh General Principles on the Environment, which are based on its management philosophy, in 1992 and revised them in 1998. These principles show Ricoh's commitment to sustainable management and are widely disclosed to the public through various media, including Web sites. Based on these principles, Ricoh Group companies have independently established and managed their own rules regarding the environment according to their business type.

Basic Policy

Based on our management principles, we recognize environmental conservation as one of the most important missions given to mankind, and we regard environmental conservation as an integral element in all our business activities. We, therefore, assume responsibility for environmental conservation and approach this on a companywide basis.

Action Guideline

1. Not only do we comply with all domestic and overseas environmental regulations, but we also set our own targets to reduce stress on the environment in consideration of social expectations, and we endeavor to attain our targets.
2. We strive to promote technological innovation while at the same time maintaining and improving our environmental conservation systems.
3. In development, design and operation of factory facilities, we always consider their impact on the environment, and we strive to prevent pollution, to utilize energy and resources effectively, and to reduce and dispose of waste products in a responsible manner.
4. At every stage, from planning, development, design, procurement and production to sales, logistics, use, recycling and disposal, we offer products and services which have minimal environmental impact and give maximum consideration to safety.
5. Through environmental education, we strive to raise awareness of all our employees in order to develop a social viewpoint that enables them to conduct environmental activities under their own responsibility.
6. In every country and region where we conduct our business, we maintain close ties with the local communities and we contribute to society by publicizing our activities and assisting environmental conservation activities.

Major Product Lines of the Ricoh Group

[OFFICE EQUIPMENT]

Imaging solutions

● Digital imaging equipment:

Digital copiers, color copiers, printers, facsimiles, related supplies and maintenance services, others

● Other imaging equipment:

Analog copiers, diazo copiers, related supplies and maintenance services, thermal paper, others

Network Input/Output (I/O) systems:

● Printing systems

Multifunctional printers (MFPs), laser printers, related supplies and maintenance services, related software, others

● Other I/O systems:

Optical-disk products, systems, scanners, others

Network system solutions:

Personal computers, servers, network devices, networking software, applications, services and support, others

[OTHERS]

Other businesses:

Digital cameras, semiconductors, others



Aficio 2035/2045
(imaggio Neo351/451)
(Model 765D equipped
with optional functions)

IPSiO NX850

* "imaggio" and "IPSiO" are the brand names used in Japan.

Fiscal 2002 Market Evaluation

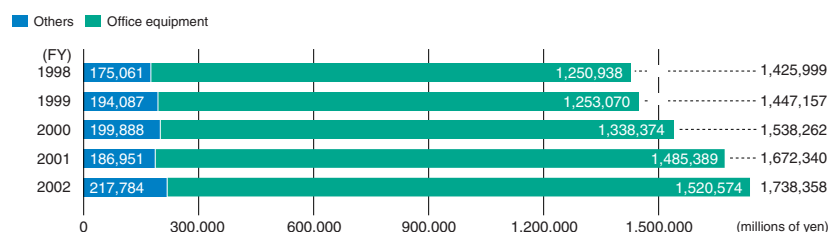
Results and Economic Performance

In fiscal 2002, the Ricoh Group had the second largest share of the office-use black-and-white copier market in the United States¹. In the corresponding market in Europe², the Group had the largest share for the sixth year in a row. In Japan, the Group was ranked no. 2 in the copier division and no. 1 in the facsimile division for the fourth year in a row according to an independent customer satisfaction survey³. Consolidated

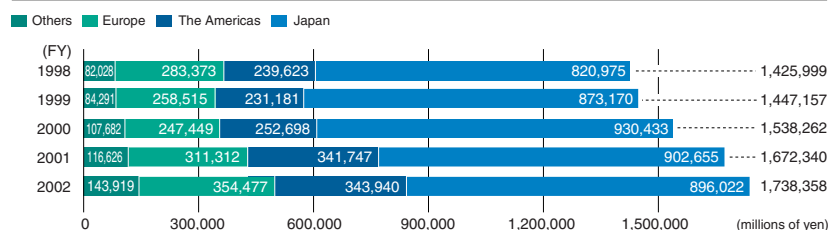
sales for the Ricoh Group rose for the ninth consecutive year, and net income increased for the 11th (the ninth largest increase in a row)⁴.

1. According to a survey conducted by Dataquest, which collected data for a number of products marketed under the Ricoh, Savin, Gestetner, and Lanier brand names (Excluding the segment for up to 10 cpm copiers) Source: Gartner Dataquest, March 2003, GJ03203.
2. According to a survey conducted by Infosource S.A., which collected data for a number of products marketed by Ricoh under the Savin, Gestetner, Nashuatec, Rex-Rotary, and Lanier brand names as well as OEM products (Excluding the segment for personal copiers)
3. According to a survey conducted by J.D. Power Asia Pacific Inc.
4. For details, see the IR section of Ricoh's Web site. (<http://www.ricoh.co.jp/IR/e>)

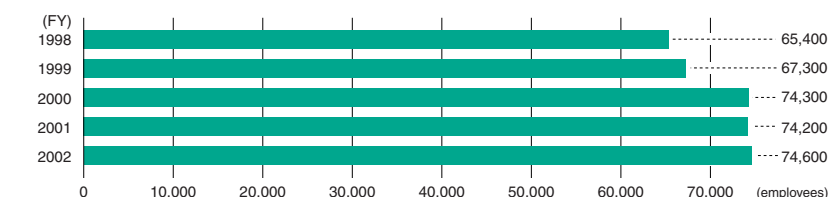
The Ricoh Group's Sales Classified by Business*



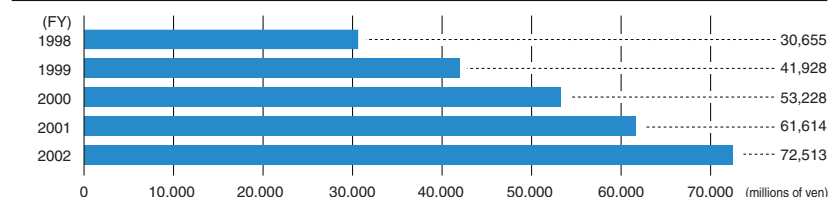
The Ricoh Group's Sales Classified by Region*



The Number of the Ricoh Group's Employees*



The Ricoh Group's Net Income*



* Figures are from the Ricoh Group's securities report and, accordingly, may differ from those of the environmental impact data due to a difference in the scope of data collection.

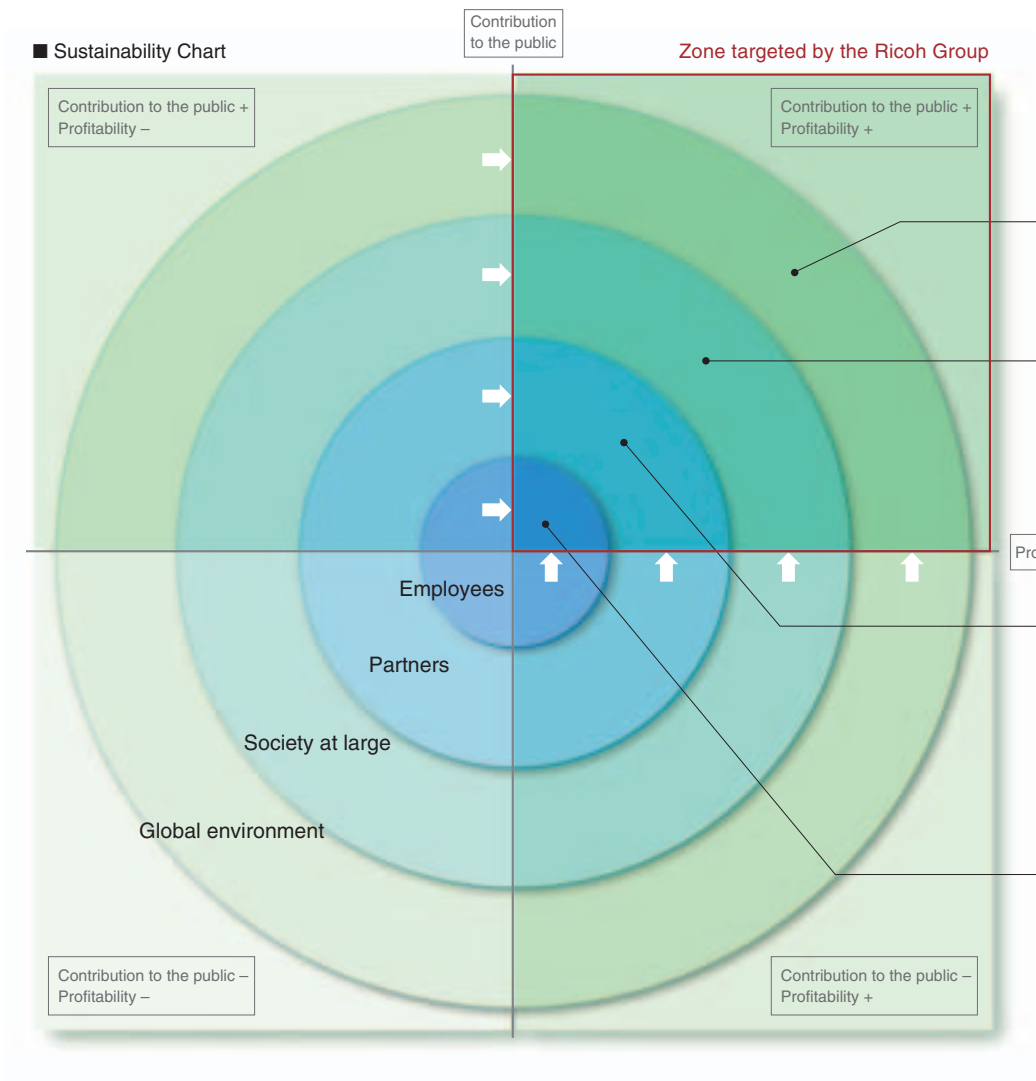
The Ricoh Group Contributes to the Development of a Sustainable Society by Promoting Sustainable Management.

Using a Sustainability Chart

All over the world, people are discussing the roles that companies should play in the development of a sustainable society. The Ricoh Group has created a sustainability chart to evaluate the sustainability of its activities and systematically disclose its goals and achievements. According to the chart, the global environment, society, partners, and

employees are four stakeholders in the Ricoh Group’s activities. To determine whether the Ricoh Group’s socially responsible activities generate profit for the Group, the chart has two axes*: “contribution to the public” (vertical axis) and “profitability” (horizontal axis).

* These axes are used to show in which zones the activities belong and not to show monetary value or magnitude of contribution.



Global Environment and Sustainable Management

The global environment underlies our society. As such, it is represented by the outer rim of the concentric circle in the sustainability chart as something that comprises everything. The Ricoh Group promotes sustainable management, which is the fulfillment of environmental responsibilities while ensuring profitability. The upper right zone is where sustainable management is successfully conducted based on highly sustainable activities. Highly sustainable activities, such as the development and marketing of environment-friendly products equipped with user-friendly energy saving/duplex copying functions*, contribute to reducing environmental impact in general and providing economic benefits (profitability) to the Ricoh Group.

* See pages 38 and 39.

Stakeholder 1—Global environment (see page 33)

Global environmental conservation activities directly conducted by the Ricoh Group

- Reducing environmental impact caused by society at large through the development of environmental technologies (Responsible Stage)
- Reducing the environmental impact caused by the Ricoh Group's business activities and related costs (Responsible Stage)
- Preventing further pollution (Proactive Stage)

Stakeholder 2—Society at large (see page 63)

National and local administrations, local communities, NPOs, and rating agencies engaged in business/environmental contribution activities

Global environmental conservation through social cooperation

- Supporting environmental education
- Supporting forest ecosystem conservation activities
- Partnering with administrations, NPOs, and local communities
- Promoting environmental communication

Stakeholder 3—Partners (see page 72)

Suppliers, customers, shareholders, and recycling companies

Global environmental conservation through cooperation with business partners including customers

- Supporting suppliers in achieving sustainable management
- Partnering with recycling companies
- Partnering with logistics companies

Stakeholder 4—Employees (see page 73)

Global environmental conservation through cooperation with employees

- Providing environmental education and training to employees
- Promoting occupational health and safety

Society at Large, Partners, and Employees

The global environment underlies our society, where business is conducted and sustainable management is promoted in cooperation with partners. Sustainable management is based on activities that contribute to society and are profitable for companies at the same time. Environmental management is not something that can be achieved at the expense of others. In the past, not a few companies conducted activities that were profitable but did not contribute to society. Such activities belong in the lower right zone in the sustainability chart. These days, however, if a company's activity falls within the lower right zone and is made publicly known, it will quickly and definitely shift to the lower left zone (little public contribution and low business profitability), eventually damaging the corporate value of the company. This means that people are beginning to attribute more importance to the corporate process of generating profit.

Tools to Measure an Activity's Effectiveness

To evaluate an environmental conservation activity in terms of both public contribution and profitability and make proper managerial decisions based on the results, companies need to have the tools to measure the effectiveness of their activities. The Ricoh Group is promoting environmental accounting* as a tool to estimate and determine the effectiveness of its environmental conservation activities.

* See page 29.

The Ricoh Group's Goal

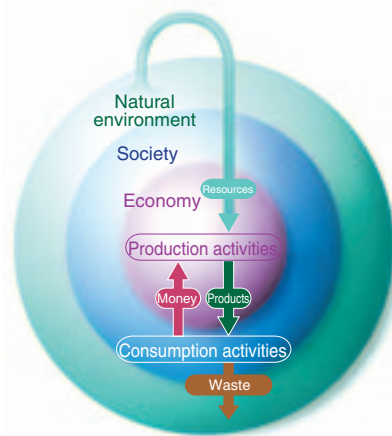
The Ricoh Group strives to take innovative measures to achieve better sustainable management as a global citizen. Ideally, all activities fall within the upper right zone of the sustainable chart (great public contribution and high profitability). However, there are times when we need to conduct activities that are in the upper left zone to fulfill our mission or respond to a request from society. We assign great importance to environmental contributions to society under the belief that companies are obligated to do so. Respecting social values, we continue our efforts to become a highly sustainable company whose activities generally fall within the upper right zone.

The Global Environment and Society (Three P's Balance™)

We need to reduce the environmental impact of society to a level that the Earth's self-recovery capability can deal with.

Three P's Balance™: Representing the Relationship between the Global Environment and Society

1

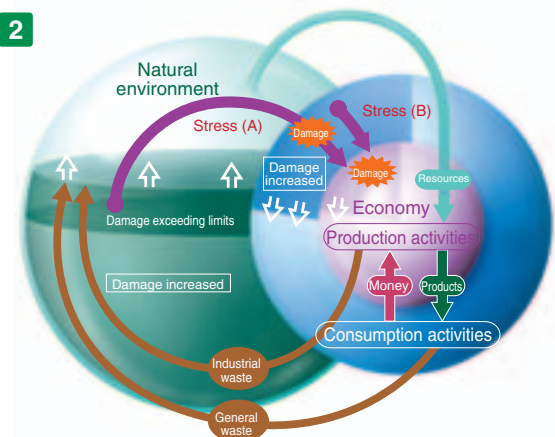


The environmental impact of economic activities in the past was small enough for the natural environment to recover unaided. However, environmental impact has grown rapidly and steadily since the Industrial Revolution to the point where an area equivalent to three earths will be needed by 2050. Companies hold the key to restoring the environment. The reason companies should be more serious in assuming the leadership in environmental conservation becomes clear if we consider how the three P's (planet, people, and profit) in environmental, social, and economic activities have changed over time. Analyzing the relationship between the economy, society, and the Earth after the Industrial Revolution makes it easier to understand why companies need to be more serious in their commitment to environmental conservation. Such analysis also shows us the kind of world we should pursue.

1 Environmental impact was smaller before the Industrial Revolution.

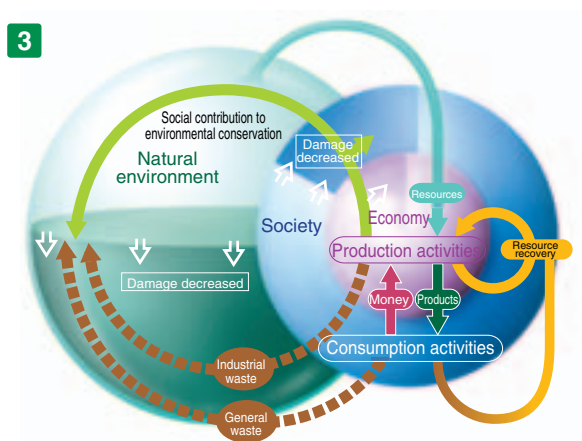
The environmental impact of economic activities was smaller before the Industrial Revolution and small enough for the natural environment to recover from unaided.

2



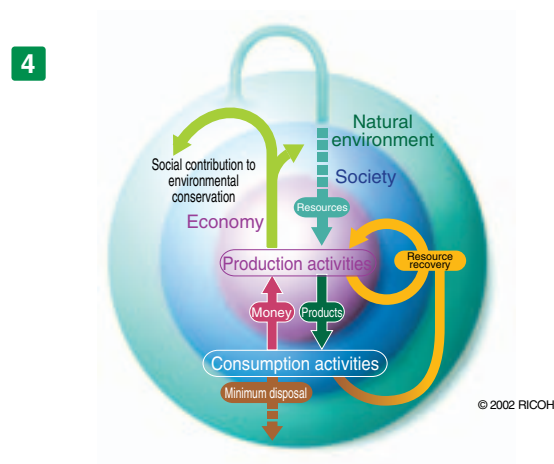
2 After the Industrial Revolution, damage to the natural environment continued to increase until recently.

The Industrial Revolution, which began in the United Kingdom, quickly spread throughout the rest of the world and opened an era of mass production, mass consumption, and mass disposal. As shown in Figure 2, people began acting as if they were not a part of the natural environment, and the damage caused by society to the natural environment drastically increased. In recent years, the environmental impact of human activity has increased beyond the Earth's ability to recover, and that has led to global warming, the depletion of the ozone layer, the submersion of land due to the rising sea level, epidemic diseases making their way northward from southern regions, and an increase in the number of people suffering skin cancer caused by strong ultraviolet light. These problems placed stress (A) on society and the economy, and society at a standstill, in turn, placed stress (B) on the economy. Currently, environmental conservation is a global issue, and companies, which are major economic players in society, are required to be serious in their commitment to environmental conservation. Without showing commitment to environmental conservation, companies will not be able to gain support from society at large.



3 At present, the establishment of a resource-recirculating society is underway and being carried out in phases.

People are paying more attention to activities that reduce the amount of damage being done to the natural environment, including the sorting of waste, recycling, and energy conservation. Reducing the amount of resources consumed and the amount of waste discharged is possible if we endeavor to recycle resources instead of disposing of them. There is a growing need for manufacturers to promote energy conservation, resource recycling, and smaller products with longer lifecycles to provide the maximum benefit to society and companies with minimum resources. Not only are global companies asked to take into account social responsibilities in the countries and regions where they engage in business activities, but they are also asked to support and promote the awareness of environmental conservation activities of companies and regions that are expected to make significant economic progress in the future and to achieve their goals with minimum environmental impact. In addition, it is important to improve the self-recovery capability of the natural environment with such efforts as improving forest ecosystem conservation.



4 We are aiming to create a society whose environmental impact is below the level that the self-recovery capability of the natural environment can deal with.

To pass on the valuable global environment to future generations, people need to recognize that they are a part of nature and should strictly limit their environmental impact to a level that the self-recovery capability of the natural environment can deal with. It is therefore important to set clearer goals to prevent global warming and pollution and to save energy. For example, the reduction target of CO₂ emissions is generally based on the 1990 emission level, but in the future we need to limit emissions based on the estimated emission level that the self-recovery capability of the Earth could deal with. To help the natural environment recover, we need to establish more definite industrial and corporate goals. In order to overcome the most serious threat to our own existence, we need to face these challenges, being totally aware of environmental conservation and innovative in our efforts to achieve our goals.

The Ricoh Group promotes sustainable management based on the Comet Circle concept.

Comet Circle

The Comet Circle is a graphic representation of a society that recirculates resources. The upper route represents the “arterial system” while the lower one the “venous system.” The spheres in the diagram represent the partners that comprise the recycling-based society. Resources taken from the natural environment by materials suppliers shown in the upper right are processed into products, moving from right to left along the upper route, and are finally delivered to users. The economic values of the resources increase in the process and are the highest when the final products are delivered to users. The end-of-life products move from left to right along the lower route. To achieve a sustainable society that recirculates resources, it is necessary to recycle products on the inner loops of the Comet Circle and promote recirculation that is highly economic and causes less environmental impact. Also, the partners represented by spheres need to reduce their own environmental impact below the level that the self-recovery capability of the natural environment can deal with.

Improving Sustainable Management

To promote its defined environmental management, the Ricoh Group is promoting the development of products with less environmental impact¹, contributions to reducing environmental impact by customers², and the profitability of the recycling business³. In the past, the development of a recycling business did not succeed because the social infrastructure was mainly based on the arterial system. The Ricoh Group is making efforts to turn the social infrastructure into one that is based on the arterial as well as venous systems and improve the standards of recyclable designs to make its recycling business profitable on a global scale.

1. See pages 16, 35–44, and 47–52.
2. See pages 17 and 38.
3. See pages 41 and 58.

Facilitating Environmental Conservation through Partnerships

The Comet Circle represents partnerships as well as the environmental conservation concept of the Ricoh Group. At present, customers decide what to buy and which companies are more valuable to them based on the product’s performance, which countries or regions these products were manufactured in, and how they were manufactured. The Ricoh Group supports its suppliers¹ and recycling companies² in terms of business improvement, quality improvement, and environmental conservation. We also actively develop and propose new products to contribute to reducing the environmental impact by customers³.

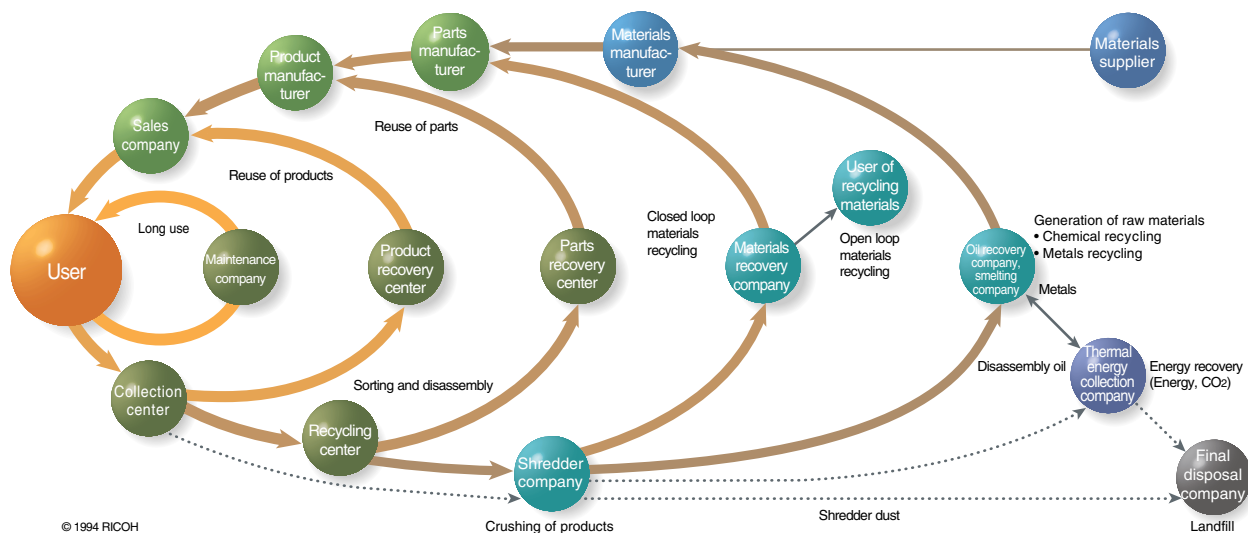
1. See pages 44, 45, and 72.
2. See page 72.
3. See page 55.

Expanding Partnerships

To develop a sustainable society, we need to expand our partnerships. For example, we recycle waste plastic from our products to be reused by ourselves and other industries. In fiscal 2002, we succeeded in manufacturing plastic parts¹ using waste plastic from polyethylene terephthalate (PET) bottles, which are disposed of by an outside industry. Also, we are starting a new Zero-Waste-to-Landfill campaign based on the idea of returning the natural resources used in business activities to the natural environment after use. This means that a new concept—“from ecosystem to ecosystem”²—is added to the Comet Circle.

1. See page 17.
2. See page 18.

Concept for Realizing a Society that Recirculates Resources: The Comet Circle™



(1) Determine and Reduce Environmental Impact at All Stages

A society that recirculates resources must minimize the total environmental impact it causes by reducing it at all stages, including the transportation stage (the entity represented by a sphere in the Comet Circle diagram). For this reason, the Ricoh Group, suppliers, customers, and recycling companies must first determine the degree of environmental impact at all stages, including the transportation stage, by using an environmental management information system and then reducing it by using the latest environmental conservation technologies and promoting recycling and collection systems all over the world.

(2) Priority on Inner Loop Recycling

Resources have the highest economic value when they are manufactured into products and used by customers. The Ricoh Group puts priority on reducing, reusing, and recycling products on the inner loops of the Comet Circle, aiming at minimizing the resources, cost, and energy needed to return used products to their highest economic value.

(3) Promoting a Multitiered Recycling System

Repeated recycling to the furthest extent possible (i.e., multi-tiered recycling) reduces the consumption of new resources and the generation of waste. The Ricoh Group is developing activities to achieve this goal, such as recycling its products as well as waste from other companies or industries, e.g., making toner cartridges from used PET bottles.

(4) More Economically Rational Recycling

A society that recirculates resources must also establish a recycling system in which products and money flow in opposite directions in both post-product-use stages and original production and marketing stages. The Ricoh Group, making use of an upgraded design, is promoting a more economically rational recycling system in partnership with recycling companies. At the same time, it is important to establish a social system that helps people to be aware of environment-friendly business activities and buy products with less environmental impact.

(5) Partnerships at Every Stage

The Ricoh Group, as a manufacturer, is limited in what it can do to reduce the environmental impact caused at each stage of production. The Ricoh Group can effectively reduce environmental impact and recycling cost only by decreasing its usage of chemical substances with the cooperation of materials and parts manufacturers, urging customers to use products that have less environmental impact or use products in ways that produce less environmental impact, and improving efficiency in the transportation of products to be marketed as well as used products. Thus, environmental impact can be reduced effectively in an economically rational way by forming a partnership at every stage. The Ricoh Group helps reduce the environmental impact caused by society as a whole by sharing the information and know-how it obtains through its activities in the community. We look at partnerships as a sharing of information, and we regard any stakeholder who receives information as our partner.

By developing environmental technologies and encouraging all employees to participate in environmental activities based on plans to improve sustainable management, the Ricoh Group will be able to conserve the environment and make a profit at the same time.

From Passive Environmental Stage to Proactive Environmental Conservation Stage and the Responsible Stage of Sustainable Management

In its past environmental conservation approaches, the Ricoh Group first went through a Passive Stage, in which it dealt with regulations and responded to customer needs, then a Proactive Stage, in which it reduced its environmental impact by voluntarily setting higher goals in environmental conservation as a global citizen. Now, the Ricoh Group is preparing to enter the Responsible Stage of sustainable management, in which it pays equal attention to environmental conservation and deriving economic benefits. As a global citizen and a company, it is necessary to ensure profitability in all environmental conservation activities. The Ricoh Group, based on its environment management information system*, checks its achievements from environmental and economic viewpoints and identifies the issues that need more attention to ensure continuous improvements in its defined sustainable management.

* See page 25.

Plan for Environmental Achievement

In fiscal 2001, the Ricoh Group made an environmental action plan* for fiscal 2002–2004. The plan outlines ways of promoting sustainable management that conserves the environment and makes a profit at the same time and shows the areas and goals of activities in consideration of legal trends, social interest and expectations, as well as the Ricoh Group's environmental impact and expected economic effects.

* See page 33.

Considerations in Preparing an Environmental Action Plan



Three Steps in Environmental Conservation Activities (From Passive Stage to Proactive Stage and Responsible Stage)

	Passive Stage	Proactive Stage	Responsible Stage
Purpose	Coping with social pressure <ul style="list-style-type: none"> • Laws and regulations • Competition • Customers 	Carrying out missions as a global citizen <ul style="list-style-type: none"> • Self-imposed responsibility • Voluntary planning • Voluntary activities 	Simultaneously realizing environmental conservation and profits
Activities	Passive measures to meet laws and regulations, compete with other companies, and satisfy customer needs	1. High-aiming, aggressive activities to reduce environmental impact <ul style="list-style-type: none"> • Energy conservation • Resource conservation and recycling • Pollution prevention 2. Improved awareness of each employee	Environmental conservation activities ≡ QCD activities* Ex.: Reduced number of parts Reduced number of process steps Improved yield and operation rate
Tools		1. ISO 14001 2. LCA 3. Training program for environmental volunteer leaders	1. Strategic goal management system 2. Environmental accounting 3. Environmental management information system

* Activities to improve quality, control costs, and manage delivery time

Areas of Activities and Measures to Promote Such Activities

To develop a sustainable society that limits the environmental impact caused by economic activities to a level that the self-recovery capability of the natural environment can deal with, it is necessary to keep the emissions of greenhouse gases, the use of resources, and the use of chemical substances within a tolerable range. The Ricoh Group measured its environmental impact according to the Eco Balance system¹, and as can be seen by the results, the Ricoh Group regards energy conservation, resource conservation, and recycling and

pollution prevention as important environmental conservation areas in each of its products and business sites.

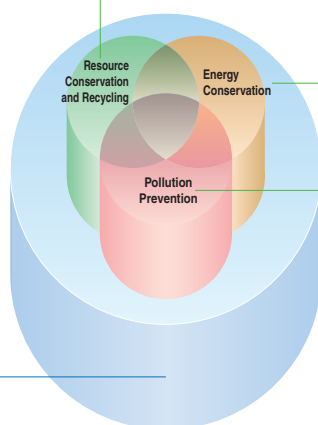
Furthermore, to ensure its continuous environmental conservation activities remain profitable, the Ricoh Group promotes environmental management in its products and business activities by developing environmental technologies² and encouraging all employees to participate in environmental conservation activities³.

1. See page 27.
2. See page 35.
3. See page 23.

Environmental Management System (EMS)

- **Identification and Reduction of Environmental Impact**
 - Environmental Management System p. 23
 - Environmental Management Information System p. 25 (Environmental Impact Information System)
- **Confirmation of Economic Rationality**
 - Environmental Impact Information System p. 25 (Environmental Accounting System)
- **Provision of Incentives**
 - Strategic Management by Objectives (SMO) p. 24
- **Improvement of Employee Awareness**
 - Environmental Education and Awareness Promotion p. 73
 - Nurturing Environmental Volunteer Leaders p. 74
 - ISO 14001 Certification p. 73
 - Zero-Waste-to-Landfill Activities p. 73
- **Communication and Partnership with Stakeholders**
 - Sustainability Reports and Environmental Web Site p. 69
 - Partnerships with Customers (Product Information Disclosure and Green Solution for Offices) .. p. 35, 55
 - Partnerships with Suppliers p. 44, 45, 72
 - Partnerships with Logistics Companies and Recycling Companies p. 72
 - Social Contribution of Environmental Conservation p. 63

The Ricoh Group's Areas of Environmental Conservation Activities and Environmental Management System



- **Resource Conservation and Recycling (Business Sites)** p. 49
At our plants, we are striving to achieve "complete production," i.e., getting maximum results using minimum resources with Zero-Waste-to-Landfill.
- **Resource Conservation and Recycling (Products)** p. 16, 17, 41, 58
To conserve resources, we are developing products based on recyclable designs, constructing a recycling network, and manufacturing products using recycled parts and materials.
- **Energy Conservation (Business Sites)** p. 47
We are striving to slow down the rate of global warming through efficient power consumption and the introduction of new energy systems.
- **Energy Conservation (Products)** p. 16, 17, 38
To prevent global warming, we are developing and offering various energy-saving products.
- **Pollution Prevention (Business Sites)** p. 19, 51
In the area of manufacturing, the Ricoh Group is striving to reduce emissions, waste, and the use of environmentally sensitive substances.
- **Pollution Prevention (Products)** p. 16, 17, 43
We are promoting the strict control of chemicals used in our products to reduce and eventually eliminate the use of environmentally sensitive substances.

Achievements in Fiscal 2002

To promote the kind of environmental management that ensures environmental conservation and profitability at the same time, the Ricoh Group continuously makes improvements to the basic environmental management system, develops environmental technologies, and encourages all employees to participate in sustainable management, environmental accounting¹, and social contribution activities². In addition, the Group places importance on the evaluation of its activities by society at large. The following shows the Group's major environmental achievements in fiscal 2002.

1. See page 29 for environmental accounting.

2. See page 63 for social contribution activities aimed at the environment.

- Basic System for Sustainable Management p. 15
- Developing Environmental Technologies and Products p. 16
- Encouraging All Employees to Participate in Activities p. 18
- Contributing to the Development of a Sustainable Society p. 21
- Evaluation by Society at Large p. 21

Basic System for Sustainable Management

To encourage the development of environmental technologies and environmental management activities as a global company, we have established an award for sustainable management activities.

Award to promote sustainable management (International)

In fiscal 2002, we established an award to promote sustainable management on a groupwide scale. This award is subdivided into the development of environmental technologies and activities that promote environmental management carried out by all employees on a daily basis. Candidates for the awards are judged based on the environmental conservation effects and economic benefits of their activities. In fiscal 2002, Electronic Devices Company and NRG Benelux B.V. each received an award for developing analog one-chip LSI's for cellular phones¹ and setting up a copier recycling business², respectively.

1. See page 40.

2. See page 61.

We are building a system to evaluate and promote sustainable management all over the world.

Developing a sustainability self-assessment program (Europe)

Ricoh Europe B.V., the regional sales headquarters for Europe, developed a sustainability self-assessment program as a tool to evaluate the present level of its sustainable management and propose the required improvements in a clear manner in order to achieve highly sustainable management. This program rates the company's activities (up to 1,000 points) in 11 areas, including the company's environmental management system, collection and recycling, energy conservation, and corporate social responsibilities, etc. The program also rates the comprehensive values of such activities in terms of environmental accounting and corporate image. All items used in the rating can be determined in absolute rather than relative terms. By March 2003, Ricoh UK Ltd., Ricoh Deutschland GmbH, Ricoh France S.A., Ricoh Italia S.p.A., and the head office of the NRG Group followed Ricoh Europe B.V. and implemented the same sustainability self-assessment programs.

Evaluation of environmental management (Asia-Pacific region)

Ricoh Asia Pacific Pte. Ltd., the regional sales headquarters for the Asia-Pacific region, started evaluating the environmental management of all sales companies under its supervision (i.e., Ricoh Australia Pty. Ltd.; Ricoh New Zealand Limited; Ricoh Singapore Pte. Ltd.; Ricoh Thailand Co., Ltd.; Ricoh Malaysia Sdn. Bhd.; and Ricoh Philippines, Inc.) in the first half of fiscal 2002. The following six items are evaluated: the company's environmental action plan, collection, recycling, recovery, PR aimed at customers, and ISO 14001. The companies are notified of their evaluation results in order for them to improve their environmental activities.

Developing Environmental Technologies and Products

We are developing products with less environmental impact to be used by our customers.

Developing products with high environmental performance based on LCA (International)

The Aficio 2035/2045 (imaging Neo351/451) series marketed in March 2003 is based on a life cycle assessment (LCA) to be environment-friendly throughout its life cycle, from manufacturing and use to recycling. Designed to be highly recyclable, the series is manufactured using less lead solder (in its printed circuit boards), less polyvinyl chloride (used in wire coating), and less hexavalent chromium (in steel boards)¹. Furthermore, the environmental impact caused at the production stage was reduced thanks to the use of the newly developed P × P Toner² and toner bottles manufactured using recycled PET bottles for drinks (accounting for 50% of materials used)³. Also, to reduce the environmental impact when being used, Ricoh's unique energy conservation technology called QSU⁴ was further devel-



Aficio 2035/2045
(imaging Neo351/451)
(Model 765D equipped with
optional functions)

oped to reduce energy consumption. Moreover, the series is equipped with electronic database functions, which contribute to decreasing the amount of paper used⁵. The series easily complies with the International Energy Star Program, Japan's Green Purchasing Law, and Eco Mark standards.

1. See page 43.
2. See page 40.
3. See page 17.
4. Power consumption in energy-saving mode (off mode) is reduced to 4.5 W (compared with 7 W in previous models).
See pages 38 and 39 for QSU technology.
5. See page 40.

Reconditioned digital copiers (Japan)

Following the marketing of the imaging MF6550RC (reconditioned digital copier) in fiscal 2001, the imaging MF3570RC and imaging MF4570RC were offered in fiscal 2002. Ricoh was able to develop a reconditioned digital copier before any of



imaging MF4570RC,
a reconditioned digital copier
(with optional model 5 attached)

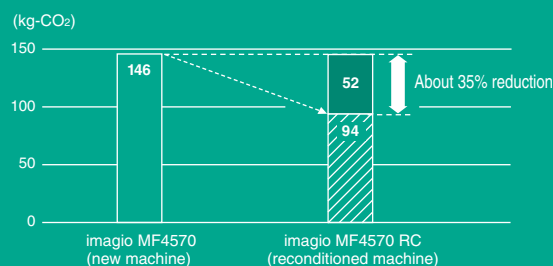
its competitors because it was a leader in digital copier sales and had accumulated extensive know-how and skill in the recycling of analog copiers. Reconditioned digital copiers contain more than 87% (mass ratio) reused parts¹, the highest in the industry. The environmental impact of the imaging MF4570RC over its life cycle is approximately 35%² less than its predecessor, which was made of all new parts, in terms of the amount of resources used and energy consumed in manufacturing. The imaging MF6550RC received the Good Design Award 2002 and the Nikkei Industrial Daily Award for Excellence (under the Nikkei Product and Service Excellence Prize 2002).

1. Parts that can be used again from collected machines and that have undergone the necessary processing for reuse
2. Based on CO₂ emissions; see graph below.

* The imaging MF6550RC/MF3570RC/MF4570RC are leased only in Japan.

LCA Comparison between a New Machine and Reconditioned Machine (CO₂ Emissions)

Reviewed by BVQI (1)



* A comparison was made by calculating the annual environmental impact of new and reconditioned machines over a five-year period and eight-year period, respectively.

* Figures for CO₂ emissions while being in operation at customers' sites were not included in the calculation of the data.

Ricoh products are useful in reducing environmental impact and have significant economic benefits for the Ricoh Group and its customers.

Contributing through energy-saving products (International)

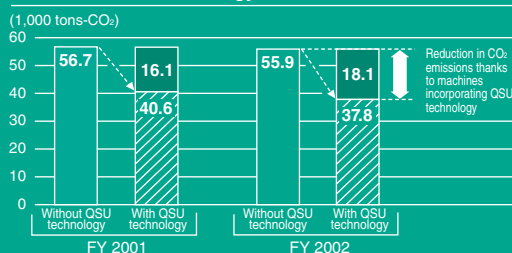
We are aggressively introducing our proprietary energy-saving technology QSU¹ to major models² in the hope that more customers will use these models and more effectively reduce their environmental impact. The products marketed by the Ricoh Group in fiscal 2002 contributed more to impact reduction than those marketed in fiscal 2001, resulting in an 18,100-ton reduction in CO₂ emissions per year. The following graph shows CO₂ emissions before and after the introduction of QSU technology. In terms of electricity fees charged to customers, the reduction is equivalent to ¥1,161.6 million in savings. Also, segment environmental accounting shows that QSU technology brought about a profit of ¥2,305 million to the Ricoh Group.

1. See pages 38 and 39.

2. In fiscal 2002, the following products marketed were equipped with QSU technology: the Aficio 1035/1045 (imagic Neo 350/450), Aficio 1022/1027 (imagic Neo 220/270), and Aficio 2035/2045 (imagic Neo 351/451) series (digital multifunctional copiers); the Aficio AP4510 (IPSIO NX920); and the IPSIO NX650S/NX750/NX850 (printers).

Reduction in CO₂ Emissions through the Use of QSU Technology

Reviewed by BVQI (2)



* QSU technology was used only in copiers and multifunctional copiers in fiscal 2001. Because the technology was incorporated in printers in fiscal 2002, the coverage of the survey was expanded.

Actual Costs and Effects of Developing QSU Products (Copiers/Printers) (Segment Environmental Accounting)

Costs		
Item	Main costs	Amount
Research and development	Development of energy-saving units	¥400 million
	Molds, Jigs, and Parts	¥458 million
Effects		
Economic benefits		Effect on environmental conservation
Corporate effect	Customer effect	Reduced CO ₂ emissions 18,100 tons
Effect on profit ¥2,305.0 million	Reduced electricity expenses ¥1,161.6 million	

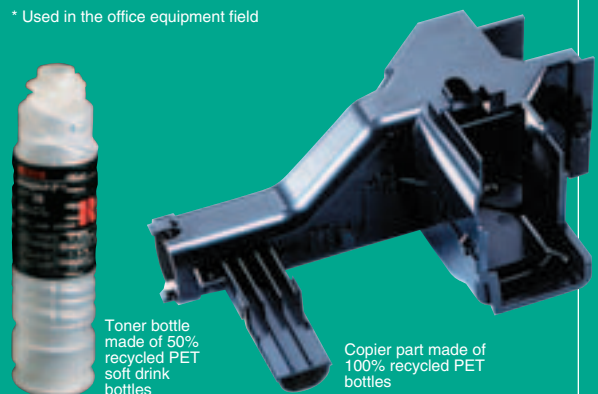
* Figures for reduced electricity expenses and CO₂ emissions represent the benefits gained for an entire year if the machine is used eight hours a day, 20 days a month. The figure for corporate effect represents the effect on gross margin for fiscal 2002 sales. (See page 30 for the formula used to calculate the effects.)

We contribute to the development of a society that recirculates resources by partnering with suppliers through green procurement.

Recycling waste from other industries

To develop a society that recirculates resources, we need to actively recycle waste from other industries in addition to recycling our own products. Ricoh, in cooperation with Kawaguchi Chemical Industry Co., Ltd., and Kyohei Industry Co., Ltd., developed a toner bottle using recycled PET soft drink bottles (accounting for 50% of materials used) and used it for the Aficio 2035/2045. Furthermore, in the summer of 2003, we will be the first in the world to start using a copier part* made of 100% recycled PET resin. The part was developed jointly with TOHOKU MUNEKATA CO., LTD., and can be recycled three times without adding virgin materials. Ricoh procured 100 tons of waste PET resin in 2003 and will procure an additional 200 tons in 2004.

* Used in the office equipment field



Suspending the use of specified chemical substances (International)

The Ricoh Group will completely suspend the use of lead, hexavalent chromium, polyvinyl chloride, and cadmium in its products by fiscal 2004. To achieve this goal, a database of materials and parts that do not contain such substances was built. The database will help procure materials and parts suitable for designing products with less environmental



Meeting held at RAI to explain the green procurement criteria

impact. In addition, we asked our suppliers to completely suspend their use of prohibited substances and helped them develop parts using alternative materials*. Since fiscal 2002, the Ricoh Group's suppliers in Japan have been required to submit certificates of the nonuse of prohibited substances for materials and parts to be supplied to the Ricoh Group, and this requirement will be expanded to include suppliers in other countries. Also in fiscal 2002, suppliers in Japan and those of Ricoh Asia Industry (Shenzhen) Ltd. (RAI: a production site in China) and Shanghai Ricoh Facsimile Co., Ltd., (SRF) were targeted, and a meeting was set up to explain the green procurement criteria and encourage suppliers to completely suspend their use of prohibited substances.

* See page 44.

Reduction in chemical substances used in color copiers

The Ricoh Group was the first to reduce the use of chemical substances in its products, including black-and-white copiers, color copiers, and multifunctional copiers. The imagio Neo C380, a copier marketed in Japan, is the product to achieve Level A* (the highest level) in the level of lead free set under the criteria by Japan's Green Purchasing Network for color and multifunctional copiers. Thanks to the reduced use of polyvinyl chloride, the imagio Neo C380 and Aficio 1224C/1232C (imagio Neo C240/320) achieved Level II. Among color copiers, only Ricoh products have achieved Level II.

* See table on page 43.

Participation by All Employees

A new loop has been created in the Comet Circle that further promotes the development of a society that recirculates resources through Zero-Waste-to-Landfill activities.

“From ecosystem to ecosystem”: A new concept (Japan)

At the Ricoh Logistics Center in Gotemba, employees make various proposals for zero waste, including the reuse of polypropylene (PP) bands used in packing. Also, fallen leaves and weeds gathered from the maintenance of the biotope within the center were previously disposed of as general waste but are now used in the center's vegetable garden as leaf soil. In this way (i.e., by returning as much waste



Green areas on the premises of Gotemba Logistics Center

resources as possible to nature), the Center achieved

Zero-Waste-to-Landfill. This new concept, “from ecosystem to ecosystem,” was added to the Comet Circle* and opens new possibilities in creating a society that recirculates resources. Furthermore, the center is looking into returning some of the wood waste from end-of-use wooden pallets (used to transport goods) to green areas on the premises to shift from the present external recycling to internal recycling. In the future, the center will open the biotope to the general public, providing the company with an opportunity to form a partnership with local residents.

* See page 11.

We examine soil and underground water for pollution and promote purification.

The Ricoh Group thinks it important to take care of soil and underground water pollution and is actively taking measures against such pollution. In 1992, we started to examine and purify soil and underground water at our production sites in Japan. Subsequently, in 1999 a committee linking employees directly with the management teams of Ricoh and other Ricoh Group companies was established. At all production sites and R&D facilities in Japan, we looked for possible soil and underground water pollution by such substances as chloric organic solvents and heavy metals. In locations where soil/underground water pollution was detected, we reported our findings to the relevant municipal government, submitted an improvement plan, and began purification activities. In purchasing land, we make it a rule to examine the soil/underground water for pollution as part of our risk management process. Also, we started conducting similar examinations and purification activities outside Japan in 2001.

Past use of chloric organic solvents and heavy metals and the prevention of pollution caused by these substances

Chloric organic solvents have been used for washing parts since the 1960s. At present, only dichloromethane is used in the manufacturing of photosensitive materials, but it will be discontinued in fiscal 2004. Heavy metals have been used in the coating process, such as soldering, and in the manufacturing of photo-sensitive materials since the 1960s, and they are still used at some of our production sites. Pollution caused by these substances began with their use without sufficient countermeasures. Currently, however, at production sites where dichloromethane and heavy metals are used, antipollution measures are being taken, including the use of waterproof pans and nonpermeable coating to prevent these substances from reaching the soil.

Examinations and purifications in Japan

We conducted our first examination for chloric organic solvents in 1992 to improve the soil and underground water and have been voluntarily conducting similar examinations ever since, including one based on guidelines published by the former Environment Agency in 1999. For heavy metals, we voluntarily conduct field surveys on our premises and along boundaries that may be polluted, based on the results of examinations on the past use of heavy metals. The table on the opposite



Removing polluted soil (at Ricoh Keiki Co., Ltd.)



Pumping equipment developed at Tohoku Ricoh Co., Ltd., for purification purposes



Pumping water to prevent pollution (at Ricoh Elemex Corporation's Ena Plant)

page shows the results of an underground water examination conducted in April 2003. At the six production sites where pollution was detected (indicated in bold), detailed examinations and purification activities are now conducted. At

all production sites surveyed, including the six sites mentioned above, the use of chloric organic solvents and heavy metals had no harmful influence over the surrounding areas. As for purification activities, polluted soil, water, and/or harmful gases are removed on a case-by-case basis. When conducting thorough examinations and purification activities, production sites examine and implement rational and economic measures in cooperation with companies specialized in relevant surveys and activities. The sites are sometimes visited by municipal governments and other companies wanting to study their antipollution measures. The Ricoh Group itself developed and effectively used antipollution devices, such as pumping equipment for purification. As of the end of fiscal 2002, the Ricoh Group spent approximately ¥820 million on examinations and purification activities in Japan, and starting in fiscal 2003 the Group will spend approximately ¥810 million until the completion of its purification activities.



Municipal government's fact-finding visit (at Ricoh Elemex Co., Ltd.)

Examinations and purification activities outside Japan

Examinations and purification activities are conducted, starting from production sites that are thought to have a higher possibility of being polluted according to past use of harmful substances. At present, surveys are conducted at Ricoh Electronics, Inc. (U.S.A.); Ricoh UK Products (U.K.); Ricoh Industrie France S.A.(France); Ricoh Asia Industry Ltd. (China); and Taiwan Ricoh Co., Ltd. (Taiwan). At sites where pollution is detected, a report is sent to the municipal government and improvement plans are made and implemented.

Survey Results of Underground Water Pollution at Ricoh Production Sites and the Ricoh Group's Manufacturing Subsidiaries in Japan (As of April 2003)

Reviewed by BVQI (3)*

Business Site	Pollutant (Japan's environmental standard)	Survey result	Measures implemented	Remarks
Ricoh Gotemba Plant	Chlorine organic solvents	No history of use	—	
	Heavy metals, etc.	No pollution		
Ricoh Fukui Plant	Chlorine organic solvents	No history of use	—	
	Heavy metals, etc.	No history of use		
Ricoh Yashiro Plant	Chlorine organic solvents	No history of use	—	
	Heavy metals, etc.	No pollution		
Ricoh Ikeda Plant	Chlorine organic solvents	No pollution	—	
	Heavy metals, etc.	No pollution		
Ricoh Atsugi Plant	Chlorine organic solvents	No pollution	—	
	Heavy metals, etc.	No history of use		
Research and Development Center	Chlorine organic solvents	No pollution	—	
	Heavy metals, etc.	No history of use		
Applied Electronics Laboratory	Chlorine organic solvents	No pollution	—	
	Heavy metals, etc.	No history of use		
Ricoh Hatano Plant	Chlorine organic solvents	Cleaning completed	—	Soil was removed.
	Heavy metals, etc.	No pollution		
Ricoh Numazu Plant, North Plant	Chlorine organic solvents	Cleaning completed	—	The neutralization of gas and purification of underground water was completed.
	Heavy metals, etc.	No history of use		
Ricoh Numazu Plant, South Plant	Chlorine organic solvents	Cleaning completed	—	Soil was removed.
	Heavy metals, etc.	No pollution		
Ricoh Ohmori Office	Cis12 dichloroethylene (0.04 mg/l)	0.17 mg/l	Purification of underground water Neutralization of gas Regular monitoring	Soil was removed.
	Trichloroethylene (0.03 mg/l)	0.19 mg/l		
	Tetrachloroethylene (0.01 mg/l)	0.022 mg/l		
	Heavy metals, etc.	No pollution		
Ricoh Unitechno	Chlorine organic solvents	No history of use	—	
	Heavy metals, etc.	No history of use		
Ricoh Microelectronics	Chlorine organic solvents	No pollution	—	
	Heavy metals, etc.	No pollution		
Hasama Ricoh	Chlorine organic solvents	Cleaning completed	—	Soil was removed.
	Heavy metals, etc.	No pollution		
Ricoh Optical Industries	Chlorine organic solvents	Cleaning completed	Regular monitoring	The purification of underground water was completed. A survey is being conducted on the existence of naturally occurring lead and arsenic.
	Lead (0.01 mg/l)	0.016 mg/l		
	Arsenic (0.01 mg/l)	0.013 mg/l		
Ricoh Keiki	11-dichloroethylene (0.02 mg/l)	0.33 mg/l	Purification of underground water Regular monitoring	Soil was removed.
	Heavy metals, etc.	No pollution		
Tohoku Ricoh	Cis12 dichloroethylene (0.04 mg/l)	1.4 mg/l	Purification of underground water Neutralization of gas Regular monitoring	The purification of underground water was completed. A survey is being conducted on the existence of naturally occurring arsenic.
	Trichloroethylene (0.03 mg/l)	0.83 mg/l		
	Tetrachloroethylene (0.01 mg/l)	0.43 mg/l		
	Arsenic (0.01 mg/l)	0.013 mg/l		
Ricoh Elemex, Ena Plant	Trichloroethylene (0.03 mg/l)	55 mg/l	Containment and purification of underground water Purification of underground water Neutralization of gas Regular monitoring	
	Cis12 dichloroethylene (0.04 mg/l)	0.47 mg/l		
	Heavy metals, etc.	No pollution		
Ricoh Elemex, Okazaki Plant	Trichloroethylene (0.03 mg/l)	13 mg/l	Containment and purification of underground water Purification of underground water Regular monitoring	
	Hexavalent chromium (0.05 mg/l)	2.6 mg/l		
	Cadmium (0.01 mg/l)	0.059 mg/l		

- The above survey results are for the maximum concentration of pollutants measured at a monitoring well at each business site.
- No pollution: No pollution was detected where pollutants were used or from underground water from a monitoring well on a business site, including its borders.
- Containment and purification of underground water: Underground water is pumped to the surface and purified to prevent polluted water from flowing out of the business site.
- The areas surrounding all business sites, including the above-mentioned sites, are not affected by pollutants.
- The removal and purification of contaminated soil and gases are for the cleaning of polluted areas while the purification of underground water is for the elimination of pollutants in underground water.

* April 2003 survey results were reviewed.

Contributing to the Development of a Sustainable Society

In April 2002, Ricoh expressed its intention to participate in Global Compact.

(International)

Global Compact* was proposed to the world's business leaders by the UN Secretary-General Kofi Annan in 1999. Global Compact is an international initiative based on nine principles in the areas of human rights, labor, and the environment. The concept of Global Compact matches the Ricoh Group's goal of contributing to the development of a sustainable society that recirculates resources, and in 2002 Ricoh became the second Japanese company that expressed an intention to participate in the international initiative. The Ricoh Group will make further efforts toward the development of a sustainable society and continuously report on these efforts in its sustainability report.

* Global Compact: <http://www.unglobalcompact.org/>

The Nine Principles

◎ Human Rights

1. Businesses should support and respect the protection of internationally proclaimed human rights within their sphere of influence; and
2. make sure that they are not complicit in human rights abuses.

◎ Labour Standards

3. Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;
4. the elimination of all forms of forced and compulsory labour;
5. the effective abolition of child labour; and
6. eliminate discrimination in respect of employment and occupation.

◎ Environment

7. Businesses should support a precautionary approach to environmental challenges;
8. undertake initiatives to promote greater environmental responsibility; and
9. encourage the development and diffusion of environmentally friendly technologies.

Social Evaluation

In recognition of its preeminent global leadership in environmental conservation, Ricoh wins the 2003 WEC Gold Medal.

(International)

Ricoh received the 2003 WEC Gold Medal for International Achievement in Sustainable Development. This award was established in 1985 by the World Environment Center (WEC) to recognize companies that demonstrate leadership in contributions to global environmental quality and sustainable development.

A jury consisting of international environmental experts, evaluates nominees for the WEC Gold Medal based on the following criteria: establishment of an exemplary, comprehensive, publicly-announced corporate sustainability policy; uniform, global and innovative application of the corporate sustainability policy; and international leadership in the sustainable development arena. The company that is judged to lead in all these areas is then selected for the award.

The award ceremony was held at the National Building Museum in Washington D.C. on May 15, 2003. About 500 representatives from international agencies, government, NPOs, media, industry, as well as Ricoh employees attended the ceremony. Masamitsu Sakurai, president and COO of Ricoh Co., Ltd. summarized the company's concept of environmental management by saying, "Focusing on environmental conservation activities is one of the most important corporate missions for the entire Ricoh Group. We have about 74,000 employees, and each and every one of them is striving to perfect our resource-recirculating business activities."

Ricoh is extremely proud to be the first Asian company to receive this prestigious award, and the company will remain continuously committed to making further progress in its environmental management system.

<http://www.wec.org/>



WEC Gold Medal Award Ceremony

Ricoh Group Sustainable Management Promotion System

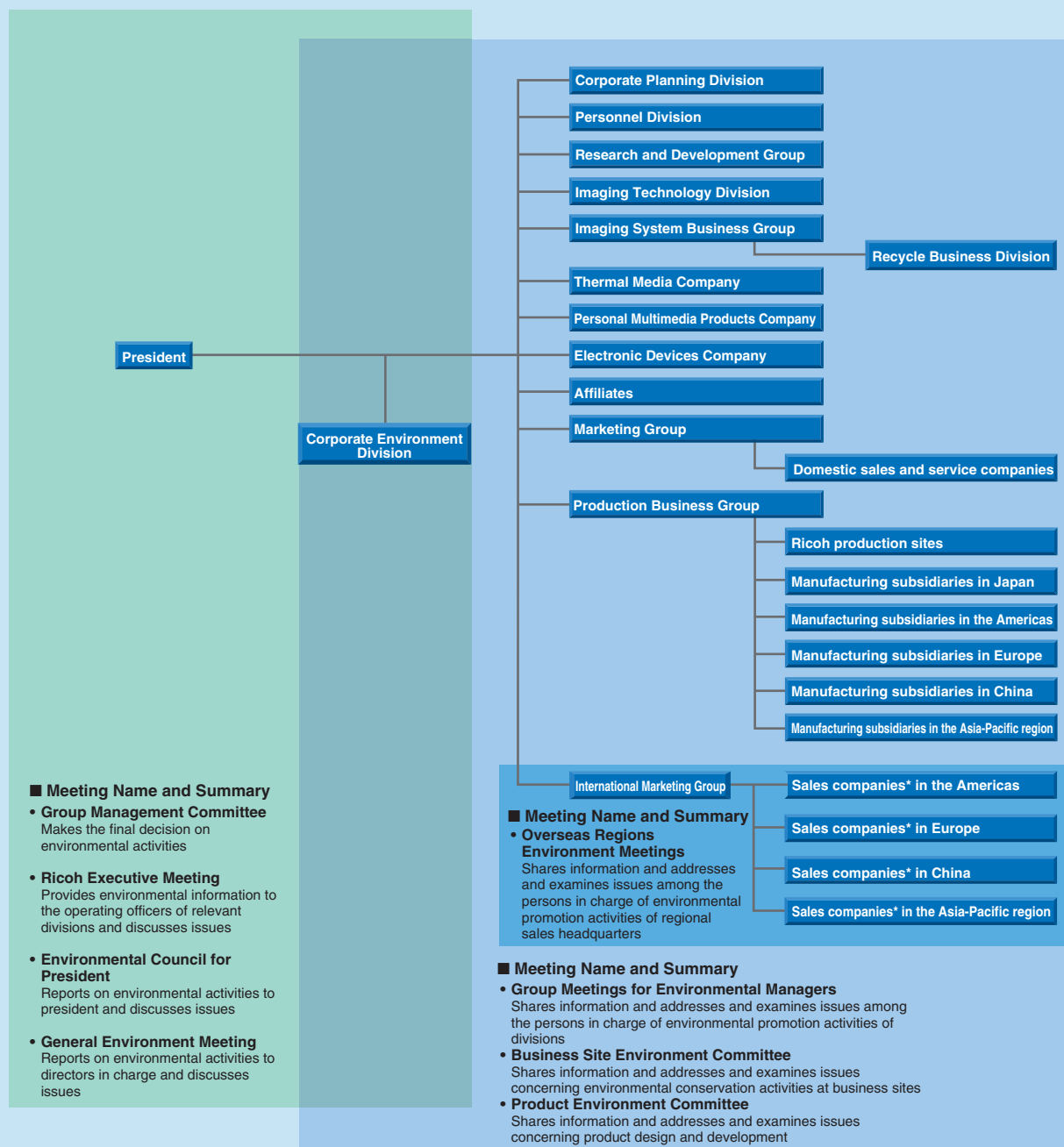
The Ricoh Group has integrated the management of environmental activities into the management of business.

The Ricoh Group integrated the management of environmental activities into business management on a global scale at an accelerated rate to achieve better sustainable management. Also,

in January 2003 we established the CSR Division* to gain even more trust from society at large.

* See page 1 for the purpose of establishing the Corporate Social Responsibility Office.

Organization Chart for the Ricoh Group's Sustainable Management System



* The United States, Canada, and Latin America are covered by sales companies in the Americas; Europe, the Middle East, and Africa are covered by sales companies in Europe; China is covered by sales companies in China; and Asia (excluding Japan and China but including Hong Kong and Taiwan) and Oceania are covered by sales companies in the Asia-Pacific region.

Environmental Management System

Enhance the Plan-Do-Check-Action (PDCA) cycle for the entire Group and each business site and division and encourage all employees to participate in the cycle.

The Ricoh Group's environmental management system (EMS) is an important tool in facilitating sustainable management on a global scale. The Ricoh Group as a whole and each of its business sites and divisions are using the PDCA cycle for EMS, for which management reviews¹ are conducted. The achievements of business sites and divisions are checked against their environmental action plans² in environmental accounting. All employees are encouraged to participate in the cycle. Furthermore, based on the Group-wide Strategic Management by Objectives (SMO), which takes an environmental conservation perspective, the Ricoh Group evaluates the business performance of its divisions³.

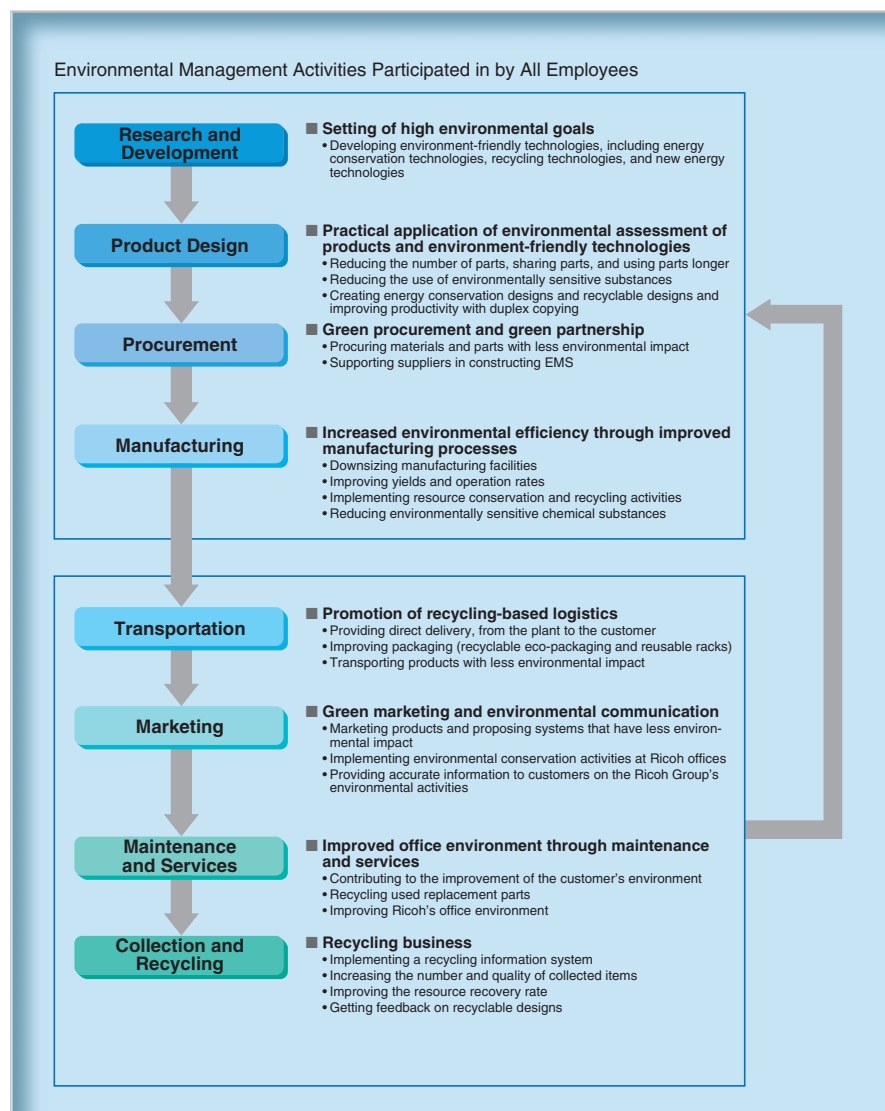
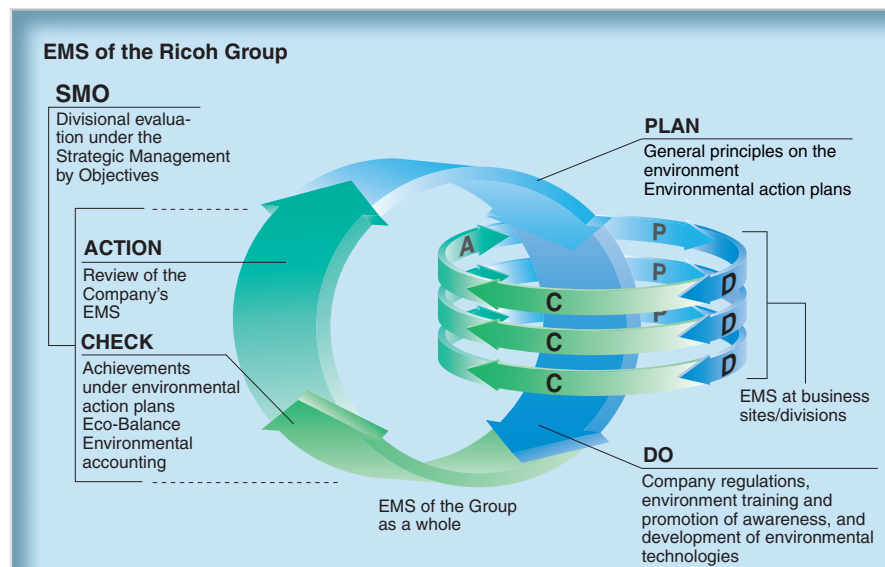
1. The review is conducted by the management to ensure the appropriateness and efficiency of EMS.
2. See page 33.
3. The SMO system, with the additional environmental item, is applied to divisions that are not shown in the figure on page 22.

* See page 15 for the award to promote sustainable management, developing a sustainability self-assessment program, and evaluation of environmental management.

Activities Participated by All Employees

To raise the level of environmental achievement, the Ricoh Group encourages all employees to participate in environmental activities, including those engaged in R&D, product development, materials procurement, manufacturing, transportation, maintenance and other services, and collection and recycling. They are encouraged to conduct environmental activities as if they belonged to an environmental activity planning division, and these activities are regarded to be as important as QCD activities*. To improve environmental activities, various meetings are held by relevant environmental committees in each region, and internal benchmarks and know-how needed for the activities are shown to employees from time to time to make them more environmentally conscious.

* QCD activities are activities that control and improve quality, cost, and deliveries.



Strategic Management by Objectives (SMO)

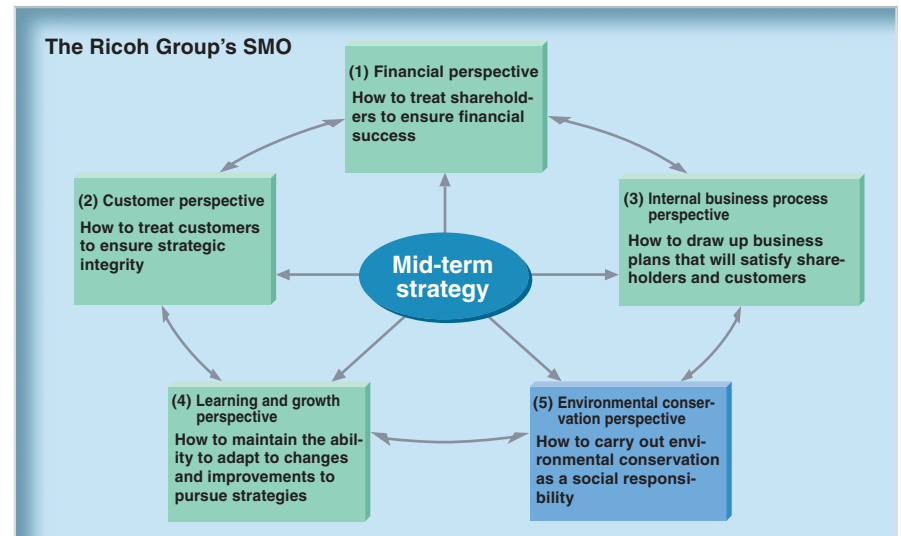
Ricoh introduced SMO in 1999 to clarify evaluation standards for environmental conservation activities that are used in divisional performance evaluations. This system is based on the Balanced Scorecard system, a performance management system developed in the 1990s in the United States and characterized by the use of four perspectives. Ricoh has added a specific environmental conservation perspective to the system and is promoting SMO for global sustainable management.

Environmental Auditing

The Ricoh Group has internal environmental auditors who carry out the environmental accounting at the Ricoh Group's business sites and report the results to the heads of the sites to help them improve their environmental activities through more effective PDCA cycles.

EMS at the Ricoh Group's Business Sites

The Ricoh Group, as a global company developing business on an international



scale, places importance on the acquisition of ISO 14001 certification, which is internationally recognized. Accordingly, starting with Ricoh's Gotemba Plant, which was ISO/DIS 14001 certified by a Japanese certifying organization on December 25, 1995, all 49 companies and 410 business sites of the Ricoh Marketing Group and sales companies were ISO 14001 certified on December 14, 2001. As of the end of fiscal 2002, 80 bases and 890 business

sites of the Ricoh Group are ISO 14001 certified. Also, the Ricoh Group has been successively adopting SMO at its business sites and divisions to promote activities for better sustainable management.

ISO 14001 Certified Divisions and Business Sites of the Ricoh Group (April 2002—March 2003)

* See Ricoh's Web site (<http://www.ricoh.co.jp/ecology/e-/system/iso.html>) for status as of March 2002 and earlier.

Name of Business Site	Location	Assessing/ Registering Organization	Date of Certification				
LANIER UNITED KINGDOM LTD	U.K.	LRQA	Jan. 30, 2003	RICOH (SINGAPORE) PTE LTD.	Singapore	BSI	April 18, 2002
Ricoh Corporation (MV Facility)	U.S.A.	UL	Feb. 10, 2003	GESTETNER OFFICE EQUIPMENT (CHINA) CO LTD	China	NQA	May 20, 2002
Ricoh Corporation (WC Facility) (Corp)	U.S.A.	UL	Feb. 10, 2003	REX ROTARY	France	AFAQ	May 22, 2002
Ricoh Corporation (PB Facility)	U.S.A.	UL	Feb. 10, 2003	Ricoh International (Shanghai) Co., Ltd.	China	BVQI	June 6, 2002
Ricoh Corporation (Tustin Facility)	U.S.A.	UL	Feb. 10, 2003	Ricoh (Thailand) Company Limited	Thailand	MASCI	June 28, 2002
Lanier Nederland	The Netherlands	BVQI	Feb. 21, 2003	Lanier Deutschland GmbH & Co. KG	Germany	TUV	Sept. 6, 2002
LANIER GROUP BELGIUM	Belgium	BVQI	Mar. 20, 2003	Ricoh San-Ai Service Co., Ltd.	Japan	JQA	Oct. 18, 2002
Lanier (Switzerland) Ltd	Switzerland	SGS	Mar. 25, 2003	RICOH SOUTH AMERICA DISTRIBUTION CENTER S.A.	Uruguay	LATU	Nov. 27, 2002
Lanier Bürosysteme GmbH & Co. KG	Austria	BVQI	Mar. 27, 2003	LANIER ITALIA SPA	Italy	CISQ	Jan. 24, 2003
Lanier España S. A. U.	Spain	TUV	April 4, 2003*				

* Assessment was completed by the end of March 2003 and an informal certification was received, but the issuance date was April 2003.

Environmental Management Information System

Calculating and analyzing environmental impact and relevant costs and supporting the decision-making process to promote environmental management

The environmental management information system identifies the impact, costs, and effects of environmental improvement activities for each manufacturing process and for the entire business. It comprises the Ricoh Group's environmental impact information system and environmental accounting system. The collected and processed data are used in decision-making for environmental management and process improvement as well as disclosing information to society. In fiscal 2002, the Ricoh Group expanded the development and operation of the system to include overseas activities.

Environmental Impact Information System

The environmental impact information system identifies the impact each process of a business activity has on the environment and the total environmental impact of the Ricoh Group's business activities as a whole. The system is based on the concept of the Comet Circle¹ to identify and reduce environmental impact at all stages. By identifying the Eco Balance² of all business activities, the Ricoh Group can deal with the activity that has the largest environmental impact first. In addition, the system is useful for drawing up environmental action plans³ and carrying out progress management.

1. See page 11.

2. See page 27.

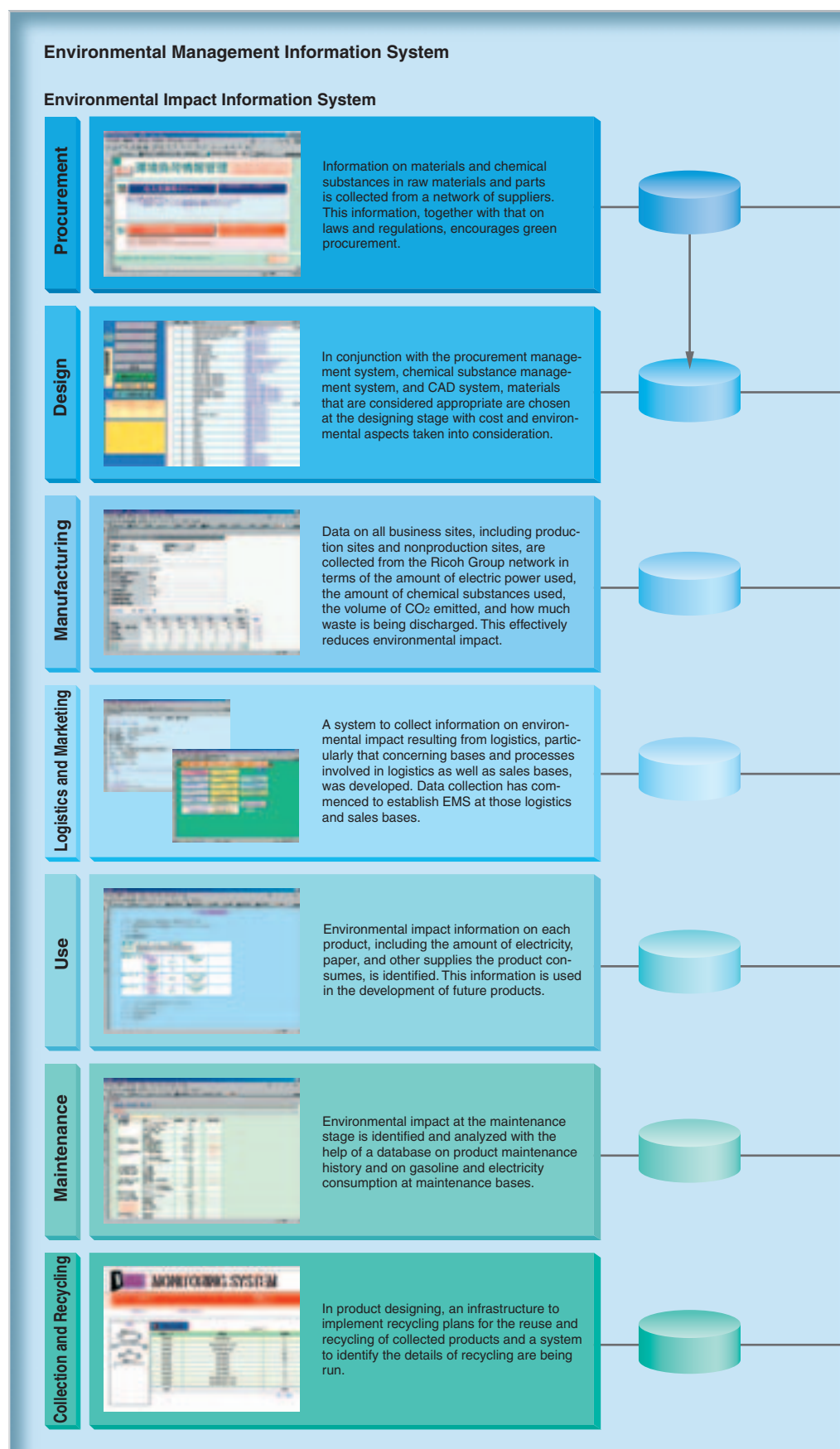
3. See page 33.

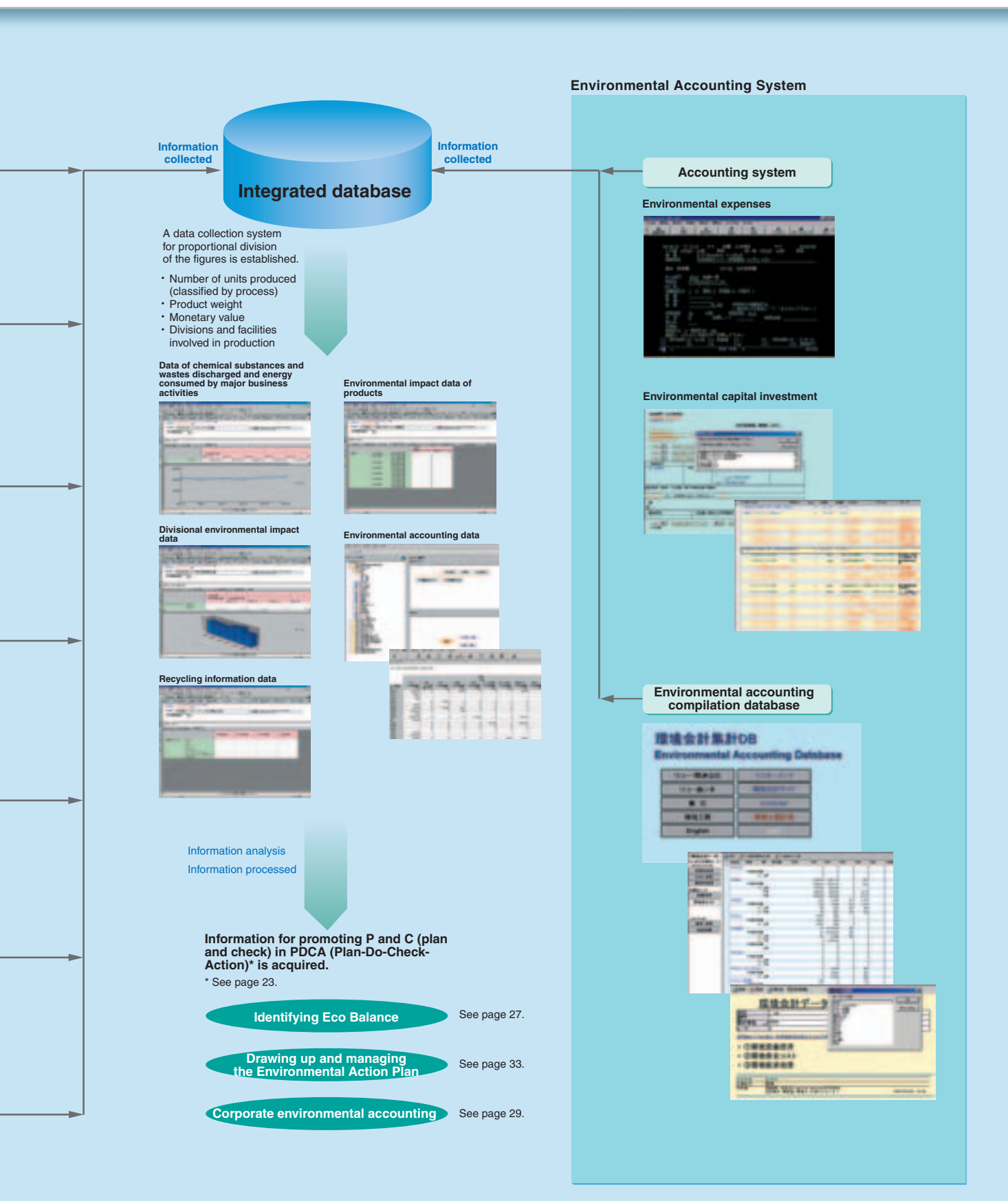
Environmental Accounting System

The environmental accounting system collects data on environmental conservation effects obtained from the environmental impact information system and environmental cost data obtained from the accounting system and processes these data into environmental management indicators¹, which makes it possible to identify corporate environmental accounting² in a timely fashion.

1. See page 32.

2. See page 31.





Identifying Environmental Impact (Eco Balance)

Identifying the environmental impact of business activities as a whole and translating it into numerical figures to be used in planning an environmental action plan

The Ricoh Group calculates the environmental impact and cost of each process based on data collected from the environmental management information system¹ to identify the Eco Balance² of the Ricoh Group's business activities as a whole. All kinds of business activity-related environmental impact, including global warming, ozone layer destruction, and ecosystem damages, are identified and translated into numerical figures using the integrated analysis method³. The Ricoh Group makes environmental action plans⁴ based on these figures. Ricoh calls the environmental accounting based on these Eco Balance figures "Eco Balance Environmental Accounting." Eco Balance Environmental Accounting focuses on the environmental impact of each product and division as well as the cost and effect of individual environmental measures, enabling a stricter control of each product and division. In the future, each division will be evaluated by specific environmental management indicators, and numerical targets for all Ricoh Group business activities will be set in the environmental action plan as general environmental indicators.

- See page 25.
- Eco Balance is a system that involves the listing of environmental impact input/output data to identify, quantitatively measure, and report the environmental impact of companies.
- Environmental priority strategies (EPS) for product design, which was developed by the Swedish Environmental Research Institute (IVL), is used in calculating the Eco Balance of business activities. Under EPS, damage caused by environmental impact on human health, ecosystems, non-living resources, and biodiversity is converted into monetary value using factors (CO₂=0.108 ELU/kg, NO_x=2.13 ELU/kg, SO_x=3.27 ELU/kg, BOD=0.002 ELU/kg, etc.) to calculate environmental load units (ELUs) of products.
- See page 33.

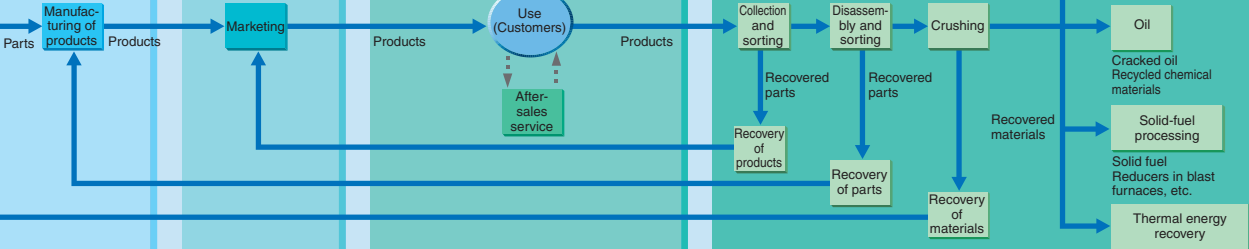
* Data collection is limited to the image-related product business in Japan.
The environmental impact of upstream and downstream activities is roughly calculated based on the environmental impact data of specified models. (Blanks indicate environmental impact that is approximately zero or unknown.)

Eco Balance of Overall Business Activities

			Upstream	Chemical substances contained in products			
Input	Energy consumption	Electric power, heavy oil, etc.	[TJ]	1,275			
	Resource consumption	Crude oil	[thousands of tons]	7			
		Ore	[thousands of tons]	20			
		Coal	[thousands of tons]	10			
		Other	[thousands of tons]	2			
	Water consumption	Tap water/well water/industrial water	[thousands of tons]				
	Chemical substances (lead, hexavalent chromium, PVC, etc.)		[t]		15		
<div>↓</div> <div>Production of raw materials</div> <div>↓ Raw materials</div> <div>Manufacturing of materials → Manufacturing of parts</div> <div>↑ Materials</div> <div>↓</div>							
Output	Chemical substances (toluene, dichloromethane, etc.)		[t]				
	Environmental impact emission	NOx	[t]				
		SOx	[t]				
		CO2	[thousands of tons]	73			
		CH4	[t]	968			
		BOD	[t]				
		COD	[t]				
Environmental Accounting	Influence on the environment	Influence on human health, the ecosystem, abiotic resources, and biodiversity		[ELU]	1.45E+08	4.71E+07	
	Converted into money value	Social costs		[millions of yen]	16,082	5,215	
		Percentage			23.85%	7.74%	
	Costs	Resource and energy costs		[millions of yen]	69,567		
		Environmental conservation costs		[millions of yen]	40		
	Effects	Economic benefits		[millions of yen]			
		Effects on environmental conservation (to reduce social costs)		[millions of yen]			
	Indicators for each item	Ratio of eco effect (REE) [(total economic benefit + total social cost reduction amount)/total environmental conservation cost]					
		Ratio of eco profit (REP) [total economic benefit/total environmental conservation cost]					
	Overall indicators	Eco-efficiency index (EEI) [sales (yen)/environmental impact amount (ELU)]					
Ratio of sales to social cost (sales/total social cost)							

Major Activities
(Environmental Action Plan from Fiscal 2002)
* See page 33.

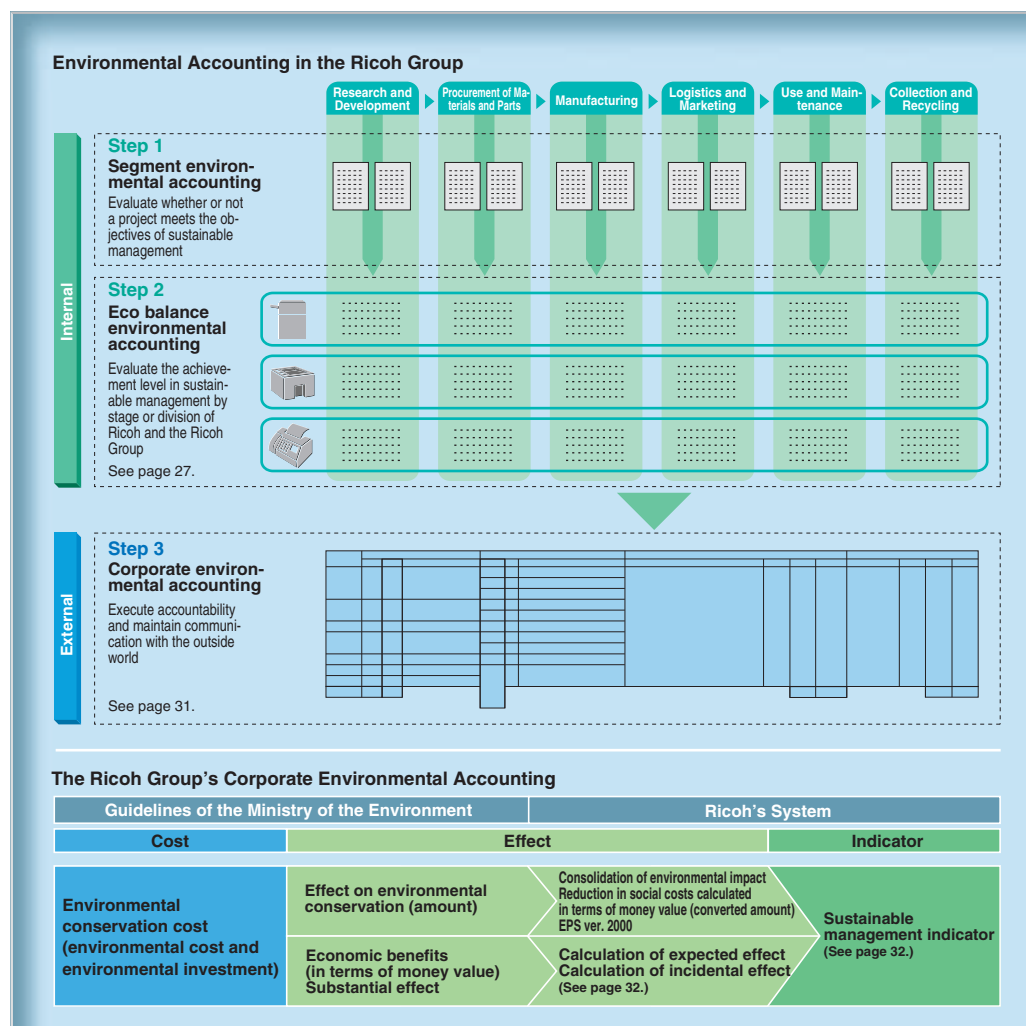
- Promotion of green procurement and green purchasing
- Promotion of the prevention of products from being polluted
- Increased quantity of reused parts in products

Manufacturing		Logistics and Marketing		Use and Maintenance				Collection and Recycling		Reviewed by BVQI (4)
Production sites	Non-production sites	Transportation	Marketing	Use		Maintenance		Recycling and disposal		
				Electric power	Paper	Maintenance	Manufacturing of maintenance parts			
3,412	559	271	650	1,521	10,121	291	121	15		
					394					
2,981	187						5			
0							0			
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	
										
331			47			3				
35	4	35	39	48	585	17	1	0		
10	0	15	15	38	2,139	7	2	0		
148	23	16	37	57	746	16	8	0		
355	35	80	0	100		72				
16	0	0					0			
18	0						0			
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	
1.50E+08	1.53E+07	5.07E+06	1.13E+07	2.38E+07	2.03E+08	5.66E+06	2.34E+06	2.07E+05		
16,570	1,695	561	1,254	2,638	22,501	626	259	23		
24.58%	2.52%	0.83%	1.86%	3.91%	33.37%	0.93%	0.38%	0.03%		
4,193	462	88	819			397				
2,153	2,103	72	1,792	464		143		2,253		
509	92	113	3,613			352		1,421		
37	1	4	44	561		9		2,114		
0.25	0.04	1.60	2.04	1.21		2.53		1.57		
0.24	0.04	1.55	2.02			2.46		0.63		

Environmental Accounting

Aiming to establish an environmental accounting system to support managerial decision making and evaluate sustainable management

Thanks to its environmental accounting system, which was disclosed for the first time in 1999, the Ricoh Group has built up a good reputation. Nevertheless, there are still many problems to be solved using this as a managerial decision-making tool. We will internally utilize segment environmental accounting and the Eco Balance environmental accounting system to improve our sustainable management and the accuracy of corporate environmental accounting based on consistent standards.



Segment Environmental Accounting (Step 1)

Segment environmental accounting is the easiest to introduce and can be promptly applied at each site: a process or project is selected, and its environmental cost and effect are calculated based on the concept of return on investment (ROI). The calculation result is internally used in making decisions in sustainable management. Ricoh Group companies and divisions utilize environmental accounting in their businesses, including segment environmental accounting for their recycling business*.

* See page 58. For segment environmental accounting, see also pages 17, 47, 50, 52, and 53.

Eco Balance Environmental Accounting (Step 2)

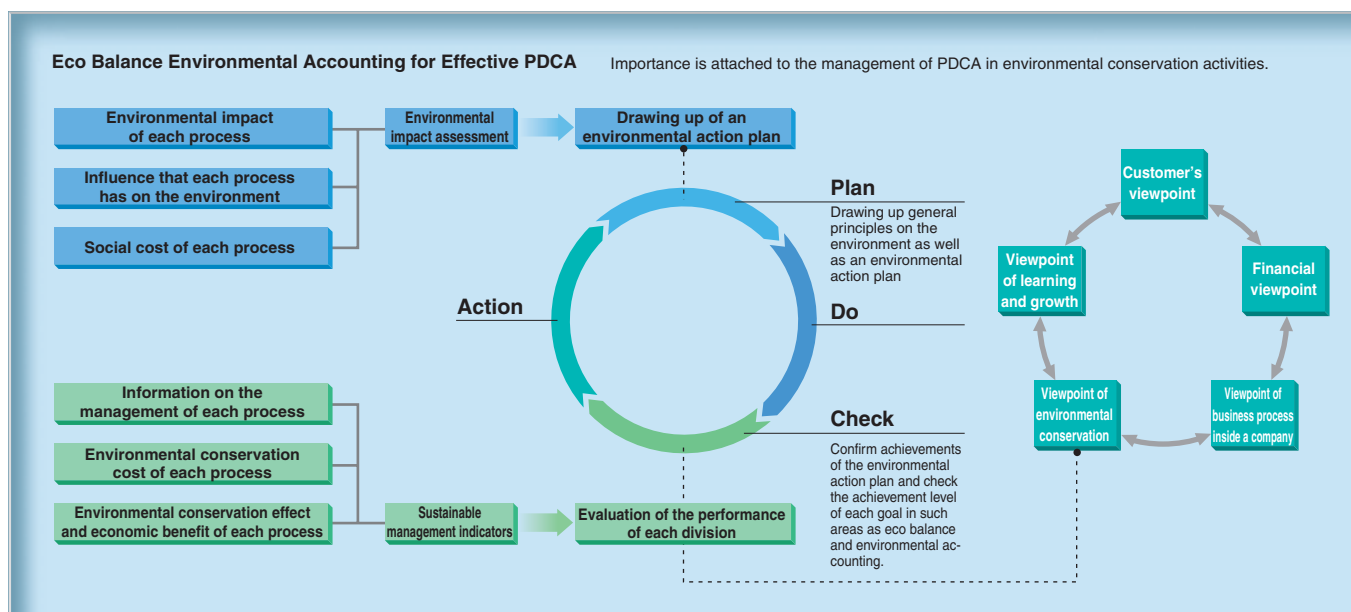
Eco Balance environmental accounting¹ is internally used to control and promote the PDCA cycle for environmental conservation activities. It can be used first to control processes that have higher environmental impact, such as the manufacturing process, and then gradually expanded to include control over all business processes. The Ricoh Group carries out environmental accounting for each process and the Ricoh Group as a whole based on the environmental impact information for each process obtained from the environmental management information system². The results are then used in making environmental action plans and evaluating divisional business performance.

1. See page 27.
2. See page 25.

Corporate Environmental Accounting (Step 3)

Corporate environmental accounting is used as a tool to inform the public of relevant information, in line with guidelines set forth by Japan's Ministry of the Environment. The Ricoh Group takes the necessary information from the Eco Balance environmental accounting data and calculates the cost and effect (in quantities and monetary values) of its environmental conservation activities based on its own formulas and indicators¹. The calculated results are disclosed to the public after being verified by a third-party organization². We will continue to improve the accuracy of the information to be disclosed and will aggressively standardize the information to make it comparable to already standardized documents, such as balance sheets.

1. See page 32 for formulas and indicators.
2. For fiscal 2002 corporate environmental accounting, see page 31.



Profit Contribution Rate of Eco-Friendly Products

To carry out sustainable management that reduces environmental impact and increases corporate profits, it is essential to develop products that have less environmental impact and encourage more consumers to use them. To calculate the effects of such products in environmental accounting in an accurate manner, an indicator is required. The Ricoh Group uses eco-friendly points* for its indicator. Eco-friendly points are given to products according to their eco-friendliness, and based on the points given the profit contribution rates of products developed with environmental technologies are calculated. In fiscal 2002, we conducted a survey targeting customers who purchased copiers manufactured by Ricoh to identify the contribution of eco-friendliness to the corporate profit. The profit contribution made through R&D activities, which is shown on the next page, was calculated based on the result of this survey.

* The environmental impact of a product is compared with that of the previous model, and the impact reduction rate is calculated based on LCA.

● Results of a Survey on the Profit Contribution Rate of Eco-Friendly Copiers

According to a survey given to our customers concerning the criteria they use when choosing a copier, 19.8% listed eco-friendliness, an average of 35.9% of which stated that the degree of eco-friendliness was an important factor. Multiplying these numbers ($19.8\% \times 35.9\%$), the profit contribution rate of eco-friendly products comes to 7.11%.

● Improved Accuracy of the Profit Contribution Rate

By dividing the profit contribution rate by the eco-friendly point (based on the environmental impact reduction rate of a product), the average profit contribution rate per eco-friendly point is 0.29%. This figure seems to be appropriate based on the result of a conjoint analysis made in the past (0.32%) and the result of a customer satisfaction level survey (0.26%). The accuracy of the profit contribution rate was improved, and from fiscal 2003 the R&D profit contribution rate will be indicated as a practical effect of R&D activities.

Customer's Reasons for Selecting a Model and Profit Contribution Rate

Model	Reasons for Selection		Profit Contribution Rate
	Percentage of customers whose reasons for selection included environmental consciousness	Percentage of environmental consciousness in customer's reasons for selection	
Copier A (Black and white)	17.9%	34.8%	6.23%
Copier B (Black and white)	24.6%	37.9%	9.32%
Copier C (Color)	15.4%	34.6%	5.33%
Average	19.8%	35.9%	7.11%

Relationship between Profit Contribution Rate and Eco-friendly Points (in limited models)

Model	Eco-friendly Points	Profit Contribution Rate	Contribution Rate per Point
Copier A (Black and white)	26	6.23%	0.24%
Copier B (Black and white)	25	9.32%	0.37%
Copier C (Color)	22	5.33%	0.24%
Total	73	20.88%	0.29% (Average)

* From the above survey results, the contribution rate for each eco-friendly point in fiscal 2002 was set at 0.29.

Fiscal 2002 Ricoh Group Corporate Environmental Accounting Reviewed by BVQI (5)

Cost unit: ¥100 million (Exchange rate: \$1 = ¥121.96 €1 = ¥121.00)

Item	Costs			Economic Benefits		
	Environmental Investments	Environmental Costs	Main Costs	Monetary Effects	Category	Item
Business area costs	3.5	25.6	Pollution prevention cost ¥740 million	10.9	a	Energy savings and improved waste processing efficiency
			Global environmental conservation cost ¥336 million	50.9	b	Contribution to value-added production
			Resource circulation cost ¥1,484 million	69.4	c	Avoidance of risk in restoring environments and avoidance of lawsuits
Upstream/ Downstream costs	0.5	65.3	Cost of collecting, disassembling, and recycling used products	58.9	a	Sales of recycled products, etc.
				[21.1]	S	Reduction in society's waste disposal cost
Managerial activity costs	0.4	39.8	Cost generated by the division in charge of environmental conservation; cost to establish and maintain an environmental management system	3.6	b	Effects of media coverage and environmental education
Research and development costs	0.9	15.9	Research and development costs for environmental impact reduction	36.1	a	Contribution to gross margin through environmental research and development
				[5.6]	S	Reduction in user's electricity expenses thanks to an improved energy saving function and product performance
Social activity costs	0.0	2.8	Costs of preparing environmental reports and advertisements	8.2	b	Publicity from environmental advertisements, etc.
Environmental damage costs	0.9	0.9	Costs of restoring soil and environment-related reconciliation	—	—	None
Other costs	0.0	0.3	Other costs for environmental conservation			
Total	6.2	150.6		238.0	Sum of a:105.9, b:62.7, and c:69.4.	
				[26.7]	Total S's	
a: Substantial effect b: Expected effect c: Incidental effect S: Social effect (Customer benefits)						

a: Substantial effect
b: Expected effect
c: Incidental effect
S: Social effect
(Customer benefits)

Environmental investment rate: 2.2%

[= environmental investment (6.2)/total capital investment (281.9)]

Environmental R&D cost rate: 1.9%

[= Total environmental R&D cost (15.9)/Total R&D cost (835)]

Fiscal 2002 Environmental Accounting

The environmental conservation cost of the Ricoh Group as a whole increased approximately 17% compared with that in the previous fiscal year due to increases in the recycling-related cost and environmental management system maintenance cost. As for the economic effects of each cost item, the upstream/downstream cost, representing product recycling-related costs, increased 34% year on year, but profit from the sales of recycled products increased roughly 76%, which shows that the recycling business has steadily improved, moving towards the breakeven point. Regarding environmental conservation effects, environmental impact was not reduced much in fiscal 2002 compared

with that in the past. However, considering the fact that total environmental impact (expressed in terms of greenhouse gas emissions) was reduced by half compared with that in fiscal 2000, the reduction in fiscal 2002 does not appear too unreasonable. Sustainable management indicators showed satisfactory results. For example, the eco-index increased about 18% compared to the last fiscal year, to 1,423.7, which is 2.6 times that in fiscal 2002. Also in fiscal 2003, the indicator is expected to increase as much as approximately 6%.

The Ricoh Group promotes the establishment of Eco Balance environmental accounting,* and it is now possible to calculate sustainable management indicators based on the environmental impact caused by and the cost of environmental measures

taken for the domestic image-related product business. We will also examine the introduction of sustainable management indicators based on the evaluation of each product's environmental cost and benefit. Such indicators will be used as numerical targets for each product in the environmental action plan.

* See page 27.

Change in gross profit and sustainable management indicators in the Ricoh Group

	Fiscal 2000	Fiscal 2001	Fiscal 2002
Ratio of eco profit	1.27	1.21	1.58
Ratio of eco effect	1.61	1.95	1.81
Eco index	538.8	1,204.1	1,423.7
Ratio of profit to social cost	40.9	100.8	108.9
Gross profit (100 millions of yen)	6,133	6,999	7,453

Collected data ● Source: 89 Ricoh Group companies (See page 2.)

● Collection period: From April 1, 2002, to March 31, 2003 (for cost and total environmental impact)

* Environmental impact reduction shows the difference of the fiscal 2002 performance from the fiscal 2001 performance.

* Social cost is calculated based on 108 Euro/t - CO₂ (¥13,068/t - CO₂).

Effect on Environmental Conservation				Environmental Impact			
Environmental Impact Reduction (t)	Conversion Coefficient	Converted Quantity of Reduction	Social Cost Reduction Values	Total (t)	Conversion Coefficient	Converted Value of Reduction	Social Costs
Environmental impact reduction at business sites							
CO ₂ -3,054.4	1.0	-3,054	-0.40	CO ₂ 286,198	1.0	286,198	37.40
NO _x 1.5	19.7	29	0.00	NO _x 189	19.7	3,716	0.49
SO _x 9.5	30.3	289	0.04	SO _x 14	30.3	422	0.06
BOD 33.2	0.02	1	0.00	BOD 22	0.02	0	0.00
Final waste disposal amount 148.9	104.0	15,483	2.02	Final waste disposal amount 1,490	104.0	154,955	20.25
PRTR substance emissions	(Ricoh standards per substance)	47,025	6.15	PRTR substance emissions	(Ricoh standards per substance)	78,211	10.22
Environmental impact reduction through products							
CO ₂ 8,709.3 (t)							
NO _x 7.1 (t)							
SO _x 5.7 (t)							
Final waste disposal amount...26,422.0 (t)							
Calculation for companies in Japan only							
		59,773	7.81			523,502	68.42

Sustainable Management Indicator	Results for Fiscal 2002	Formula
Ratio of eco profit (REP)	1.58	Total economic benefit (238.0)/Total environmental conservation cost (150.6)
Ratio of eco effect (REE)	1.81	[Total economic benefit (238.0) + Total social cost reduction amount (7.81 + 26.7)]/Total environmental conservation cost (150.6)
Eco index	1,423.7	Gross profit (¥745,349,000 thousand)/Total environmental amount (523,502)
Ratio of profit to social cost (RPS)	108.9	Gross profit (¥745.3 billion)/Total social cost (¥6.84 billion)

(1) Formula of Substantial Effect

Reduction in heat, light, and water cost	Heat, light, and water expenses in the previous year – heat, light, and water expense in the current year
Reduction in waste disposal cost	Waste disposal expenses in the previous year – waste disposal expenses in the current year
Sales value of valuable materials	Sales value of valuable materials sorted from waste
Sales of recycled products and parts	Sales of recycled products and parts
Subsidies	Environmental subsidies from the government, etc.
R&D profit contribution amount	Product gross margin × gross margin contribution rate calculated using eco-friendly points

(2) Formula of Expected Effects

Contribution to value-added production	(Production output – raw material costs) × business area cost/manufacturing costs
Effects on media coverage	Area of newspaper advertisement/newspaper page area × advertisement cost per page
Effects of environmental education	Number of people attending internal environmental education seminars × seminar fee for outside participants
Publicity from environmental advertisements	Number of visitors to environmental Web site × unit price of the environmental report

(3) Formula of Incidental Effects

Amount of incidental effect	Standard amount × occurrence coefficient × impact coefficient
Items to be calculated	Areas of improvement to prevent pollution
Standard amount	Amount set aside for lawsuits, suspension of operations, and restoration
Coefficient	Occurrence coefficient and impact coefficient to be set according to occurrence frequency and affected extent

(4) Formula of Social Effects (customers' economic benefits from using products)

Total electric power	Electric power consumption of a product × number of products sold
Electric power cost reduction effect	(Total electric power for old models – total electric power for new models) × electric power unit cost
Waste disposal cost reduction effect	(Weight of collected products – weight of final waste) × outside disposal unit cost

Fiscal 2002–2004 Environmental Action Plans and Fiscal 2002 Results

In fiscal 2001, the Ricoh Group made 17 environmental action plans for the period from fiscal 2002 to fiscal 2004. The plans set the following environmental impact reduction goals and environmental management targets: improved product environmental performance (energy conservation, resource conservation and recycling, and pollution prevention), environmental

The Ricoh Group's Environmental Action Plan (FY 2002–2004)

1. Improve environment-friendly functions and promote technological development.

- 1) Promote the use of energy-saving technologies in products. (* See page 38.)
 - Achieve Ricoh's energy-saving goals.
- 2) Promote pollution prevention measures with regard to products. (* See page 43.)
 - Completely eliminate the use of environmentally harmful substances (i.e., lead, hexavalent chromium, polyvinyl chloride, and cadmium) in products.
 - Reduce noise levels at least 2 dB (weighted average value for the number of units sold out of the number of units marketed in fiscal 2000).
 - Observe Ricoh standards that cover environmentally sensitive substances emitted by products, including styrene, ozone, and dust.
- 3) Develop new environmental technologies. (* See page 40.)
 - Develop practical application technologies for alternative paper and rewritable paper.

2. Increase the resource conservation rate by improving the productivity of products and materials as well as profitability in the recycling business.

- 1) Improve the quantity of reusable parts used by a factor of at least 20 (compared to fiscal 2000 in Japan). (* See page 58.)
- 2) Improve the collection rate of used products and toner cartridges at least 10% in terms of the number of collected units (the Ricoh Group as a whole and compared to fiscal 2000 figures). (* See page 58.)
- 3) Increase the number of resource-recirculating-type products marketed by a factor of at least 20 (in Japan and compared to fiscal 2000 figures). (* See page 58.)
- 4) Improve the resource recovery rate of used products and toner cartridges. (See page 58.)
 - The resource recovery rate of equipment and toner cartridges rises to 98% (in Japan).
 - The resource recovery rate of equipment and toner cartridges rises to 85% (in Europe).
 - The resource recovery rate of equipment rises to 95% and that of toner cartridges to 100% (in the Americas).
 - The resource recovery rate of equipment rises to 85% and that of toner cartridges to 90% (in China, Hong Kong, and Taiwan).
 - The resource recovery rate of equipment rises to 85% and that of toner cartridges to 85% (in Asia* and Oceania).

* Excluding Japan, China, Hong Kong, and Taiwan

3. Energy conservation activities at plants and offices

- 1) Reduce the amount of energy used. (* See page 47.)
 - Reduce CO₂ emissions at plants and offices 62% in terms of CO₂ emissions per sales unit and 13% in terms of total amount emitted (Ricoch in Japan and compared to 1990 figures).
 - Reduce CO₂ emissions 20% per sales unit (all Ricoh business sites in Japan and compared to fiscal 2000 figures).
 - Reduce CO₂ emissions 2% (the Ricoh Group in Japan and compared to fiscal 2000 figures).
 - Reduce CO₂ emissions 2% (Ricoch Group manufacturing subsidiaries outside Japan and compared to fiscal 2000 figures).
- 2) Promote pollution prevention. (* See page 51.)
 - Reduce environmentally sensitive substances (Ricoch Group's target substances to be reduced) 8% of those used and 50% of those emitted (Ricoch and Ricoch Group manufacturing subsidiaries in Japan and Ricoch Group manufacturing subsidiaries other than those in Japan, compared to fiscal 2000 figures).
 - Completely eliminate the use of dichloromethane (Ricoch and Ricoch Group manufacturing subsidiaries in Japan and Ricoch Group manufacturing subsidiaries other than those in Japan).
 - Restrict the increase of greenhouse gas emissions (other than CO₂) to a maximum of 1% (Ricoch and Ricoch Group manufacturing subsidiaries in Japan and Ricoch Group manufacturing subsidiaries other than those in Japan, compared to fiscal 2000 figures).
 - Reduce the emissions of ozone-depleting substances 60% (Ricoch and Ricoch Group manufacturing subsidiaries in Japan and Ricoch Group manufacturing subsidiaries other than those in Japan, compared to fiscal 2000 figures).
- 3) Promote resource conservation and recycling. (* See page 49.)
 - Reduce generated waste at least 13% (Ricoch and Ricoch Group manufacturing subsidiaries in Japan and Ricoch Group manufacturing subsidiaries other than those in Japan, compared to fiscal 2000 figures).
 - Improve the waste recycling rate to 90% (Ricoch Group nonmanufacturing subsidiaries in Japan).
 - Reduce water consumption at least 10% (Ricoch and Ricoch Group manufacturing subsidiaries in Japan and Ricoch Group manufacturing subsidiaries other than those in Japan, compared to fiscal 2000 figures).
 - Reduce paper purchase at least 10% (Ricoch and Ricoch Group manufacturing and nonmanufacturing subsidiaries in Japan and Ricoch Group manufacturing subsidiaries outside Japan, compared to fiscal 2002 figures)

4. Promoting green partnerships to increase the number of customers and reduce costs.

- 1) Promote green marketing. (* See page 55.)
 - Improve the recycled pulp use rate for paper products to 60% (Japan)
- 2) Promote green procurement. (* See page 45.)
 - Identify the environmental impact at suppliers' sites to set goals for reducing impact (Ricoch Group purchasing divisions).
 - Completely eliminate designated environmentally sensitive substances used in the supplier's manufacturing process (Ricoch Group purchasing divisions).
- 3) Promote green purchasing. (* See page 45.)
 - Improve the green purchasing rate (for office supplies) to 100% (the Ricoch Group in Japan)

5. Improving the environmental management system

- 1) Establish sustainable management indicator. (* See page 31.)
- 2) Construct a companywide audit system.
- 3) Construct an environmental management information system. (* See page 25.)

6. Promoting environment-conscious social contribution activities

- 1) Promote forest conservation activities to preserve the ecosystem (the Ricoch Group). (* See page 63.)

1. Results for items 1 through 4 were reviewed.

2. See page 13 for the definitions of "responsible stage" and "proactive stage."

conservation activities at factories and offices (global warming prevention, resource conservation and recycling, and pollution prevention), promotion of green partnership, improved EMS, and further contributions to the development of an environment-friendly society. The ultimate goal of 13 of these 17 plans is Responsible

Stage that enables both environmental contribution and business profitability. These plans are regarded as the Ricoh Group's commitment to its employees and society at large.

Progress (FY 2002 Performance)		Reviewed by BVQI (6) ¹	Environmental Management Goals ² (FY 2004)
<ul style="list-style-type: none"> ▶ Energy saving standards for copiers for fiscal 2006 set by Japanese law, the Law Concerning the Rational Use of Energy, was met by the imagio Neo 601/751 (copying productivity: 60/75 sheets/min.). * The standard was already surpassed by copiers with a copying productivity less than 60 sheets per minute. 			Responsible stage
<ul style="list-style-type: none"> ▶ For products marketed in fiscal 2002, the volume of lead, hexavalent chromium, and polyvinyl chloride (PVC) was further reduced. Products in which lead, hexavalent chromium, PVC, and cadmium are completely eliminated are scheduled to be marketed from fiscal 2004. ▶ The level of noise emitted from color copiers during operation and while on standby was reduced 1.5 dB and 6.4 dB, respectively. ▶ All 57 models of copiers, facsimiles, and printers marketed in fiscal 2002 follow Ricoh's standards concerning styrene, ozone, and dust. 			Responsible stage
<ul style="list-style-type: none"> ▶ Practical application technologies for alternative paper and rewritable paper are being developed. Samples of such paper were exhibited at Eco Products in December 2002. 			Responsible stage
<ul style="list-style-type: none"> ▶ The number of reusable parts used steadily increased and reached 3.7 times that used in fiscal 2000. 			Responsible stage
<ul style="list-style-type: none"> ▶ Collection rates of used products (compared to those in fiscal 2000) • Increased 18% in Japan; 73% in Europe; 26% in the Americas; decreased 10% in China, Hong Kong, and Taiwan; and also increased 107% in Asia* and Oceania. * Excluding Japan, China, Hong Kong, and Taiwan 			Responsible stage
<ul style="list-style-type: none"> ▶ Thanks to the release of new resource-recirculating-type products, the number of products marketed increased steadily, reaching 6.4 times that in fiscal 2000. 			Responsible stage
<ul style="list-style-type: none"> ▶ Current status of resource recovery rate • Equipment: 99%; toner cartridges: 100% (Japan) • Equipment: 95%; toner cartridges: 95% (Europe) • Equipment: 95%; toner cartridges: 100% (the Americas) • Equipment: 93%; toner cartridges: 100% (China, Hong Kong, and Taiwan) • Equipment: 59%; toner cartridges: 89% (Asia* and Oceania) * Excluding Japan, China, Hong Kong, and Taiwan 			Responsible stage
<ul style="list-style-type: none"> ▶ Current status of CO₂ emissions • Reduced 29.2% per sales unit and 10.7% in terms of total amount emitted (Ricoch in Japan, compared to fiscal 1990 figures) • Ricoch in Japan: Reduced 0.9% (CO₂ emissions per sales unit, compared to fiscal 2000 figures) • Ricoch and Ricoch Group manufacturing subsidiaries: Reduced 2.4% (total emissions, compared to fiscal 2000 figures) • Ricoch Group non-manufacturing subsidiaries: Reduced 4.4–14.8% (total amount emitted, compared to fiscal 2000 figures; each subsidiary's goal was 2.0 %.) • Ricoch Group manufacturing subsidiaries outside Japan: Reduced 2.1% (total amount emitted, compared to fiscal 2000 figures) 			Responsible stage
<ul style="list-style-type: none"> ▶ Progress in pollution prevention (compared to that in fiscal 2000) • Environmentally sensitive substances used were reduced 36.1% and those emitted 64.3%. • Greenhouse gas emissions other than CO₂ were reduced 16.3%. • The emissions of ozone depleting substances were reduced 60.9%. 			Proactive stage
<ul style="list-style-type: none"> ▶ Progress in resource conservation and recycling (compared to fiscal 2000) • The amount of waste generated was reduced 8.0%. (Ricoch and Ricoch Group manufacturing subsidiaries in Japan and Ricoch Group manufacturing subsidiaries other than those in Japan) • The waste recycling rate went up to 73.1–93.8%. (Ricoch Group nonmanufacturing subsidiaries*) * Other than sales companies • Water consumption was reduced 4.5%. (Ricoch and Ricoch Group manufacturing subsidiaries in Japan and Ricoch Group manufacturing subsidiaries other than those in Japan) • Amount of paper purchased is surveyed. 			Responsible stage
<ul style="list-style-type: none"> ▶ The recycled paper use rate for paper products improved to 51%. (mass ratio) ▶ FSC certified recycled paper "FSC NB Copy Paper" was put on the market. 			Proactive stage
<ul style="list-style-type: none"> ▶ Data collection method for environmental impact in the processing of parts was reviewed, and preparation for trial calculation began. ▶ Some suppliers began replacement tests for chloric organic solvents used in the manufacturing process. 			Responsible stage
<ul style="list-style-type: none"> ▶ Activities are being conducted to achieve the goals for fiscal 2004. The green purchasing rate in fiscal 2002 was 72.6% in terms of money value. 			Proactive stage
<ul style="list-style-type: none"> ▶ Sustainable management indicators (proposals) were established. 			Responsible stage
<ul style="list-style-type: none"> ▶ The effectiveness of internal environmental auditing was confirmed at 15 business sites that acquired ISO 14001 certification. 			Responsible stage
<ul style="list-style-type: none"> ▶ Data required as environmental management indicators are reviewed to expand data collection areas and locations. 			Responsible stage
<ul style="list-style-type: none"> ▶ New projects that started in fiscal 2002 Europe: Forest preservation and restoration project 1 China, Hong Kong, and Taiwan: Forest restoration project 1 Asia* and Oceania: Forest preservation project accompanied by environmental education 1 * Excluding Japan, China, Hong Kong, and Taiwan 			Proactive stage

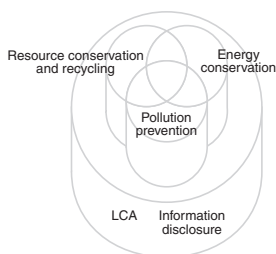
Environmental Technologies and Products Development

Providing customers with user-friendly and eco-friendly products

The development of environmental technologies is one of the most important activities in the promotion of sustainable management. In order to contribute to society by reducing the environmental impact of its products and ensure profitability by marketing products with less environmental impact, the Ricoh Group needs to develop user-friendly environmental technologies that will be accepted by more consumers. To market products that have less environmental impact throughout their life cycles, from manufacturing and use to recycling, each division is engaged in the development of new environmental technologies, and through LCA* reduce the environmental impact of products from the following three aspects: energy conservation, resource conservation and recycling, and pollution prevention.

* LCA, or life cycle assessment, quantifies the environmental impact of products from the procurement of materials to manufacturing, transportation, marketing, use, maintenance, collection, recycling, and disposal. LCA can target the whole process or only a part of it.

* See page 16, for the development of products with high environmental performance based on LCA.



Development of Environmental Technologies

To provide customers with products that enable them to reduce their environmental impact simply by choosing to use them, it is necessary to develop underlying environmental technologies. In April 2002, Ricoh established the Environmental Technology R&D Center as a division to drive environmental technologies and improve sustainable management. The center is committed to dramatically improve Ricoh's resource and environmental efficiency and create unique values to be provided to the public. Specifically, the center makes medium- and long-term technological development plans in the following four areas: reduction in paper use in printing/copying, energy conservation, resource conservation and recycling, and pollution prevention.

Reduction in Paper Use in Printing/Copying

To help our customers reduce the use of paper in printing/copying, we promote the development and practical use of rewritable paper* and electronic paper. In this area, we are developing new technologies that would reduce the use of paper or use paper in a way that causes less environmental impact.

* See page 40.

Energy Conservation

To further conserve energy in the office equipment domain, which is one of the Ricoh Group's existing business domains, we are promoting the development of technologies that do not require the use of energy and technologies for the efficient use of energy. Also, as a new business domain, research is conducted for the development of new energy technologies, including fuel cells.

Resource Conservation and Recycling

Research is also conducted on the 3Rs* (reduce, reuse, and recycling) of products.

To promote reduce design in products, medium- and long-term plans are made to prolong the life of products. Under the medium-term plan that ends fiscal 2010, the focus is placed on the establishment of a production system that recirculates resources. This system facilitates the reuse of products by introducing a platform and module design*.

* See page 41.

Pollution Prevention

In the area of pollution prevention, technological research is being conducted under the following two themes: the complete suspension of polyvinyl chloride (PVC) use and improving the office environment by reducing the dust and noise office equipment emits when in use.

Quantification of Environmental Impact and Disclosure of Relevant Information

The Ricoh Group conducts research on LCA to quantify the environmental impact of products throughout their life cycles and develop products with higher environmental performance based on the quantified data. Also, we actively disclose relevant data through Type I Environmental Labels, Type II Environmental Labels, and Type III Environmental Declaration. In the industry, the Ricoh Group is a leader in the establishment of criteria for Environmental Labels and the timely and reliable disclosure of relevant information.

LCA Research

The LCA Group, which was founded by Ricoh in 1994, conducts research on practical methods of utilizing LCA. In conducting various field surveys, the LCA Group discovered the importance of setting clear goals when using LCA and found it difficult to collect data and set appropriate assessment criteria. The know-how obtained by the LCA Group is effectively utilized in the use of LCA by Ricoh Group companies and manufacturing subsidiaries. Also, to contribute to the devel-

opment of LCA Ricoh participates in external committees to conduct joint research on LCA with scholars and representatives from other companies. In fiscal 2002, the Company did an LCA for the imagio Neo 220 and imagio MF4570RC and MF3570 RC (reconditioned digital copiers) and disclosed the results on its Web site* and in product brochures. The Company also uses LCA as a method of examining technological themes.

* <http://www.ricoh.co.jp/ecology/e-/label/type3/index.html>

Type I Environmental Labels

Type I environmental labels have been established in countries and regions pursuant to ISO 14024 standards. These labels, which are placed on products and shown in brochures, help customers decide which

product to buy. Such labels include the Eco Mark (Japan), Blue Angel Mark (Germany), Environmental Choice Program (ECP) (Canada), and Green Label (Thailand). Ricoh's criteria for product design used to promote global green marketing are severer than those set by the international Type I environmental label. Moreover, the Company actively contributes to establishing Type I environmental label criteria in various countries. In Thailand, Ricoh Thailand Limited was the first company to obtain Green Label certification for the Aficio 1022 (imagio Neo 220) copier in September 2002. Ricoh plans to obtain Type I environmental label certification for all its digital copiers.

Type II Environmental Labels

Type II environmental labels are given to products that satisfy standards independently set by each company. The Ricoh Group set its own standards for recyclable designs, the reuse rate of parts, and environmental safety. The Group established the Recycle Label and, as of March 2003, has given it to the Spirio 5000RM, Spirio 7210RM series, Spirio 8210RM, Spirio 105BB, imagio MF6550RC, imagio MF3570RC, and imagio MF4570RC.

* The imagio MF6550RC, imagio MF3570RC, and imagio MF4570RC are available only for rent in Japan.

International Environment Labels for Which the Ricoh Group Qualifies

<http://www.ricoh.co.jp/ecology/e-/label/type1/index.html>

* Type I Environment Labels

● Eco Mark*/Japan

The Eco Mark is a labeling system that the Japan Environment Association uses. Ricoh was awarded this mark for its copiers, printers, and office paper and other printed paper materials.



待機・使用時のエネルギーが少ない、部品を再使用・再資源化する、廃棄物が少ない複写機

An example of the Eco Mark on an imagio Neo 220/270 series model (certification no. 01117005)

● Green Label*/Thailand

Green Label was launched jointly by the Thailand Environment Institute and the Ministry of Industry in August 1994. Ricoh's copiers were awarded this label in September 2002 for the first time in the industry.



● International Energy Star Mark/Japan, the United States, Europe, etc.

Only products with power consumption below a certain level while in standby mode can be sold with the International Energy Star Mark. Almost all of Ricoh Group's applicable products have been awarded this mark.



● Energy Efficiency Labeling Scheme (EELS)/Hong Kong

EELS is a labeling scheme that certifies energy efficiency. Only machines that satisfy the energy conservation standards established by the Hong Kong government are allowed to have the label placed on them. Ricoh has been granted the use of this label since September 2002.



● Blue Angel Mark* (BAM)/Germany

BAM certification standards are specified in detail by the German Federal Environment Agency throughout the production process, from manufacturing to the disposal of applicable products. Ricoh's facsimiles, copiers, and printers are all BAM certified.



● Environmental Choice Program (ECP) Mark*/Canada

ECP is a national program established in Canada in 1995 and operated by a private company called Terra Choice Environmental Services Inc. Ricoh's facsimiles, copiers, and printers are certified under this mark.



● Criteria for the Ricoh Recycle Label (Summary)

Newly Manufactured Machines



1. The product satisfies Ricoh's recyclable design standards.
2. Reused* parts account for 40% or more of the product's mass (mass ratio).
3. Toner cartridges used in the product are recyclable, and a system for recycling them has been established.
4. A system for collecting and processing used products as well as collecting used cartridges and containers has been established.
5. At least 90% of the product's mass (mass ratio) can be recovered and recycled in Ricoh's recycling system.
6. Consideration is given to environmental safety, as stipulated in Ricoh's standards.

* Reuse means to use something for the same purpose in its original form.
Reuse rate (%) = Maximum mass of parts reused/mass of products in which reused parts are used

Reconditioned Machines

1. Reused parts account for 80% or more of the product's mass (mass ratio).

Type III Environmental Declaration

A worldwide trend in green purchasing is the growing importance of timely and global information disclosure so that consumers can choose products and the Ricoh Group can improve its sustainable management. The Ricoh Group, following Type III Environmental Declaration, quantifies the environmental impact of products through LCA and discloses the information globally. In addition, the Ricoh Group is making efforts to promote Type III Environmental Declaration.

● Timely Disclosure of Reliable Information

Ricoh, following its participation in the Japan Environmental Management Association for Industry's (JEMAI's) initial environmental labeling program, aggressively participates in the association's subsequent EcoLeaf environmental labeling program, which started in April 2002.

In September 2002, Ricoh was granted a System Certification by a system auditor qualified by JEMAI for the Company's copiers and laser printers and quickly disclosed the environmental impact information concerning the Aficio 1022 (imaggio Neo 220) digital copier and the Aficio AP 3200 (IPSiO NX810) laser printer. Likewise, Tohoku Ricoh Co., Ltd., disclosed information about the environmental impact of the Priport N500 digital copier. The information was independently verified and certified under the EcoLeaf labeling program. Under the Environment Product Declaration (EPD) program implemented in Sweden, the environmental impact information of the Aficio 650 (imaggio MF6550) and Aficio FAX5000L (RIFAX ML4500) was registered and disclosed through an independent third-party certification by BVQI. Thus, Ricoh is aggressively conducting activities that would disclose more reliable information.

● Contributing to Global Compliance with Environmental Criteria

In February 2002, Ricoh made a draft standard for a Type III Environmental Declaration management system based on ISO 9001 standards and the EcoLeaf environmental labeling program. The draft standard will be applied to management systems to follow Type III Environmental Declaration, the quality of which should be assured by an appropriate certification body. To check the effectiveness of a system established according to the standard, Ricoh asked an international certification body to do the verification on a trial basis. Based on the results, the Ricoh Company will disclose the environmental impact information on more products and make proposals to international certification system-related bodies in order to contribute to global compliance with environmental criteria.

LCA Information on the Aficio1045 (imaggio Neo 450) (Type III Environmental Declaration)

Product Classification	Multifunctional copier equipped with electrostatic copier, facsimile, and other functions			Product Name	Aficio 1045		
PSR-No	PSR-001	Weight of Product (kg)	78.0	Weight of Packaging, etc. (kg)	11.73	Total Weight (kg)	89.7

Stage of Product's Life Cycle Input and Output Items			Unit	Preliminary Process	Manufacturing		Trans- portation	Use			Maintenance		Recycling and Disposal		
							Preliminary Process	Manufacturing of Supplies		User					
Input	Energy resources	Electric power	MJ	46884	75.3		—	2139	645		1659		1952	20.6	
		Fossil fuel	MJ		93.4		159		202		0			—	
	Water resources	Tap water	m³	—	0.309		—	—	0		0		—	—	
		Industrial water	m³	—	0.0675		—	—	0		0		—	—	
		Underground water	m³	—	0.0835		—	—	0.664		0		—	—	
	Resource input into products		kg	—	Iron and iron alloys	44.2	0	—	—	Copy paper	4072	Maintenance parts	0.835	—	
					Copper and copper alloys	0.817				Toner	23.5				
					Aluminum and aluminum alloys	0.609				Photosensitive materials	0.817				
					Other metals	2.88				Developer	1.50				
					Plastic	26.0				Packaging and others	8.18				
					Glass	3.05									
					Rubber	0.382									
					Wood	0									
					Paper	9.80									
					Electronic parts	2.02									
Chemical substances			g	—	204		0	—	513		0		—	—	
Output	Emissions into air	CO ₂ (electric power/other)	kg	3771	7.96	5.60	12.2	317	68.3	10.3	175		4.06	2.18	
		SO _x (electric power/other)	g	60740	4.70	0.0715	14.6	646	40.3	0.00	104		21.7	1.29	
		NO _x (electric power/other)	g	4224	5.64	4.16	37.5	202	48.4	9.1	124		5.05	1.55	
		Chemical substances	g	—	7.96		0	—	405.4		0		—	—	
	Emissions into water	BOD	g	18120	0.0607		0	3376	0.364		0		15.4	—	
		COD	g	12166	0		0	3098	0		0		27.5	—	
		Chemical substances	g	—	0		0	—	0		0		—	—	
	Emissions into soil	Product	Recycled	kg	—	0		10.7	—	—		11.2		—	74.1
			Waste	kg	—	0		0.0700	—	—		0.0661		—	3.90
		Site	Recycled	kg	—	0.621		0	—	3.21		—		—	—
Final disposal			kg	—	0		0	—	0		—		—	—	

How the above data is shown:

1. In principle, numerical data is shown in more than three digits consisting of numbers other than 0.
2. "0" is shown when data is calculated or estimated as 0.
3. "—" is shown when data cannot be calculated or estimated.

Environmental Technologies and Products Development (Energy Conservation)

Products that are not easy to use will not be chosen by consumers even if their environmental performance is good. Such products cannot contribute to environmental conservation. To do its part in preventing global warming, Ricoh constantly strives to introduce user-friendly, energy-saving functions to its core products, which will be used by more people and lead to a decrease in environmental impact caused by the use of products in general. Also, the Company is highly committed to reducing environmental impact caused by paper used in printing/copying, which is the largest cause of impact¹ to the environment in the life cycle of a printer/copier. Ricoh helps decrease environmental impact caused by consumers' paper consumption by offering a duplex copying function, promoting the use of electronic paper, and aggressively marketing recycled paper².

1. See page 27.
2. See page 55.
* See page 17, for contributions made by energy-saving products.

User-Friendly, Energy-Saving Technologies

To make copiers and printers more energy efficient, it is necessary to develop technology that minimizes the machine's electricity consumption while in standby mode and enables it to quickly recover from energy-saving mode as required. Even if a copier/printer that consumes almost zero energy while in standby mode is marketed, consumers will not use the energy-saving function if it takes too long to recover from Energy-Saving mode. If such a copier/printer is not chosen by customers, it will not be able to contribute to reducing the general consumption of electricity. Therefore, Ricoh developed quick start-up (QSU) technology, which enables machines to save energy and recover quickly from energy-saving (off/sleep) mode when needed. The technology was first used in the Aficio 1035/1045 (imaggio Neo 350/450) series digital multifunction copier, which was marketed in 2000. The technology

was subsequently used in the Aficio 1022/1027 (imaggio Neo 220/270) series, one of Ricoh's core models sold in large quantities; the Aficio AP4510 (IPSiO NX920) printer in fiscal 2001; and the Aficio 2035/2045 (imaggio Neo 351/451) series digital



IPSiO NX850

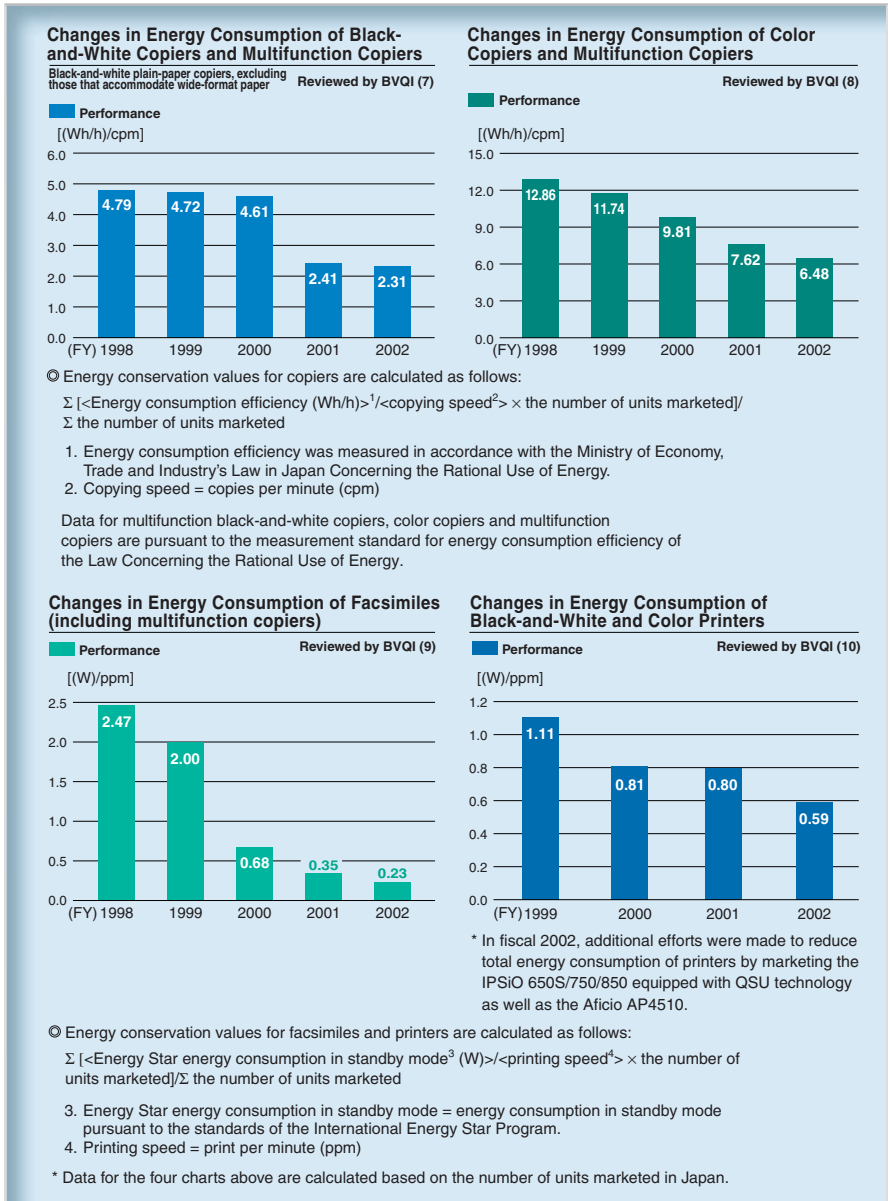


Aficio 2035/2045 (imaggio Neo 351/451) (Model 765 with optional functions)

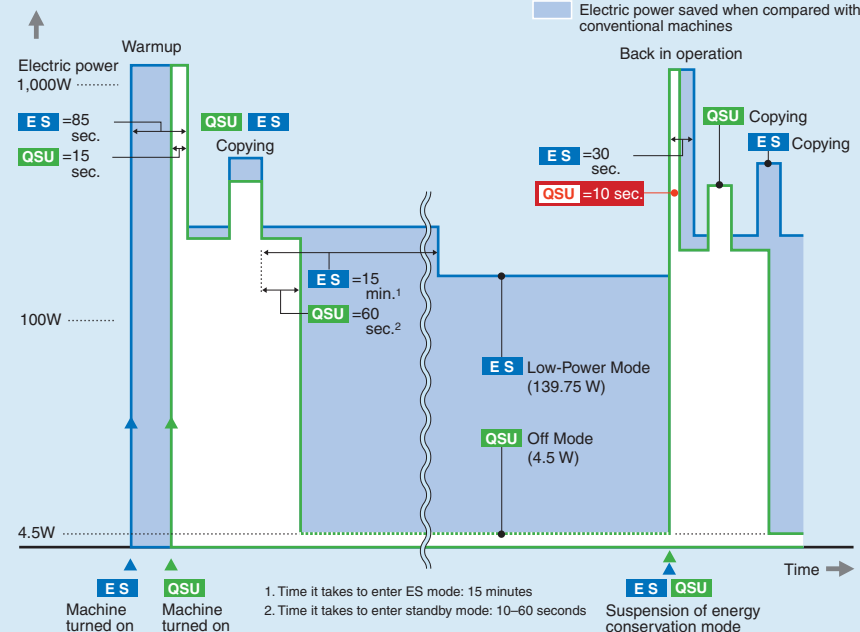
multifunctional copier and IPSiO NX650S/750/850 printer in fiscal 2002. Thus, Ricoh is committed to reducing energy consumption.

Ricoh will further improve its QSU technology to gain more consumer support for its products.

* The Aficio 1035 (imaggio Neo 350) series won the first Copier of the Future Award from the International Energy Agency. The series was the first to win the Minister of International Trade and Industry Prize at the Energy Conservation Grand Prize competition in fiscal 2000. The Aficio 1022/1027 (imaggio Neo 220/270) series received the Energy Conservation Chairman's Prize at the Energy Conservation Grand Prize competition in fiscal 2001.



Comparison of Energy Consumption of Copiers (Copying Productivity: 35 copy/min.)



By introducing a power-saving controller and high-efficiency power supply unit (PSU), the power consumption of the Aficio 2035/2045 (imaging Neo 351/451³) while in off mode was reduced from 7 W⁴ to 4.5 W. The Aficio 2035/2045 requires only 10 seconds to begin operating from off mode, enabling users to start copying immediately. An energy-saving fusing unit and toner that allow ink to be fixed at low temperatures realize low energy consumption while in operation as well.

3. The Aficio 2045 (imaging Neo 451) requires 15 seconds to begin operating because of its high copying productivity of 45 copy/min. (continuous copying of A4-size paper, bypass).
4. Electric power consumption of the Aficio 1035/1045 (imaging Neo 350/450), in which QSU technology was first incorporated
5. The rule stipulates that the time it takes to enter Low-Power mode or off mode may be 15 minutes or less if the warmup time is 30 seconds or less.

Standard Values Set by Laws and Regulations and Values Achieved by Ricoh Machines (Copier with Copying Productivity of 35 copy/min.)

Items governed by law		Standard values of laws and regulations	Aficio 2035
Law Concerning the Rational Use of Energy (Japan)	Energy consumption efficiency (Wh/h)	2006 standard value 125 Wh/h	33 Wh/h
	Low-Power Default Time	15 minutes	60 seconds ⁵
International Energy Star	Low-Power Mode	139.75 W or less	4.5W ⁶
	Recovery Time from Low-Power Mode	30 seconds or less	10 seconds

6. Low-Power mode for the Aficio 2035/2045 (imaging Neo 351/451) is the same as off mode or sleep mode thanks to the use of QSU technology.
7. Copying productivity (copy/min., continuous copying of A4-size paper, bypass)

Energy-Saving Capabilities of the Latest Copier, the Aficio 2035 (imaging Neo351)

Japan's Energy Saving Law stipulates that all copiers capable of 35 cpm⁷ must satisfy the energy consumption efficiency (average electric power consumption per hour) requirement of 125 Wh/h by 2006. The Aficio 2035 (imaging Neo 351) has surpassed the requirement and achieved 33 Wh/h. This was possible because the amount of time required to warm up the Aficio 2035 was significantly shortened to 15 seconds or less, as opposed to the 85 seconds required by conventional machines, and the time it takes to begin operating from off mode was shortened as well, to 10 seconds.

According to the rule for measuring energy consumption efficiency, energy-saving mode is not to be entered for 15 minutes (see Low-Power mode in the figure) after copying. This is to avoid a long waiting time before resuming copying. The rule, however, has an exception in that a machine may enter Low-Power mode or off mode in 15 minutes or less only when its warmup time is 30 seconds or less. Because the Aficio 2035 requires only 15 seconds to warm up, it is able to enter off mode within the 15-minute restriction⁸.

The Energy Star standards stipulate that the time required to begin operating from Low-Power mode should be 30 seconds or less for copiers capable of 20<cpm⁷≤44 and that electric power consumption in Low-Power mode should be 139.75 W or less for copiers capable of 35 cpm. It can be said that, compared to these standards, the specifications for the Aficio 2035 (10 seconds for start of operation and 4.5 W of electric power consumption in Low-Power mode) represent extremely high energy-saving capabilities.

8. If the time it takes to enter off/sleep mode is too short, the settings in the machine while operating may be cancelled. Ricoh set such time to one minute in consideration of user friendliness.

User-Friendly Duplex and N-Up Copying Functions

To provide more consumers with user-friendly duplex and n-up copying (copying multiple pages on one sheet of paper) functions and reduce environmental impact caused by the use of paper, Ricoh developed faster duplex and n-up copying technologies that are more user friendly. To speed up the duplex copying of two-sided documents (the printing function that takes the longest amount of time complete), the Aficio 1060/1075 and imaging Neo 601/751 digital printer series simultaneously reads both sides of a document with a single scan. Also, touchscreens were improved so that the duplex and n-up

copying functions would be more comfortable to use. The Aficio 1060/1075 and imaging Neo 601/751 series achieved nearly 100% duplex productivity* while in continuous operation. Many of our other products achieved high duplex productivity as well.

* Duplex copying productivity (%) = (Time spent on simplex → duplex copying) / (Time spent on simplex → simplex copying) × 100. Time is measured from the moment the desired number of copies is entered and the "Copy" button is



imaging Neo601/751
(Model T with optional functions)

Contribution Made by Duplex Copying

The duplex copying function of the Aficio 1035 (imaging Neo 350) and Aficio 1075 (imaging Neo 750) series saves users 408 kWh and 2,550 kWh of energy per unit/year, respectively. This is equivalent to a 145 kg and 910 kg reduction in CO₂ emissions*.

* The figures were calculated assuming that the Aficio 1035 (imaging Neo 350) uses an average of 10,000 sheets of paper per month for copying and the Aficio 1075 (imaging Neo 750) uses an average of 50,000 sheets per month, reducing the use of paper by 2,000 sheets (20%) and 12,500 sheets (25%), respectively, by duplex copying, and based on the conversion coefficient (1 kWh = 0.357 kg – CO₂) used in Japan.

Reducing Paper Consumption by Computerization

Ricoh provides customers with an ideal printing environment with its high-value-added products, including multifunctional printers (printers that can also be used as copiers and facsimiles). In addition, by scanning and digitizing paper documents and showing them on a networked PC screen, Ricoh printers provide customers with an efficient electronic document management system. For easy duplex and n-up printing, the Ricoh has developed a unique printer driver called RPCS.

Reducing Environmental Impact by Manufacturing P × P Toners

Ricoh developed the industry's first polyester polymerization toner (P × P toner)*, which is chemically manufactured using polyester resin materials, coloring agents, and wax to ensure higher copying/printing quality. Compared with traditional toner particles made by crushing materials, the energy (in CO₂) required to manufacture P × P toner is reduced approximately 35%. Also, thanks to the uniform thermal properties obtained by the use of polyester resin, the fixing temperature can be lowered which, in turn, contributes to energy conservation while the toner is used.

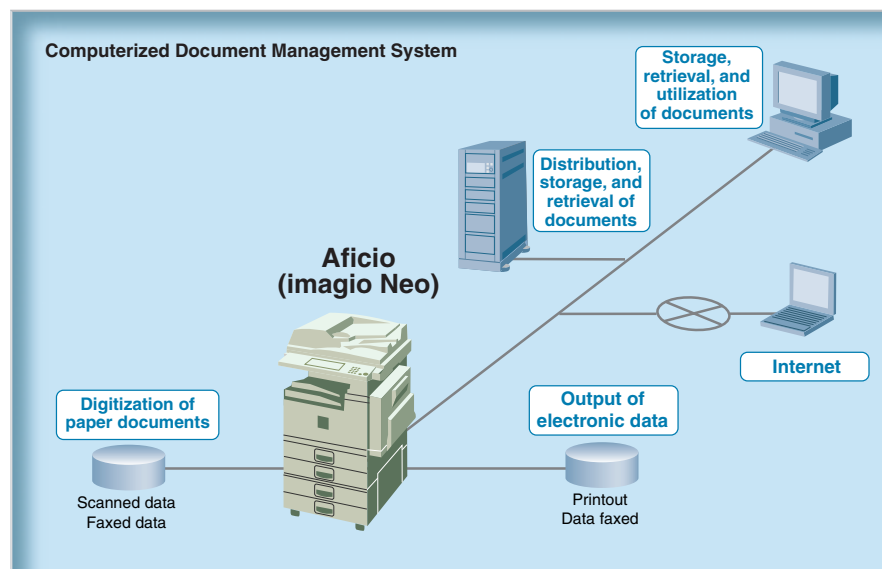
* P × P toner was developed using Ricoh's unique polymerization method. P × P stands for polyester × polymerization. Traditional polymerized toner is made from styrene and acrylic resins while P × P toner contains polyester resins.

Rewritable Printer & Paper

According to a survey, 70% of the paper used in offices will never be used again, which means only 30% is stored for a long time after being printed on. Ricoh, making the most of its exceptional thermal paper



Rewritable Printer & Paper



technology, developed a rewritable printer and paper that can be reused more than 200 times. The rewritable paper is very similar in texture to ordinary paper and can be written on using an exclusively developed red-colored pen.

Energy-Saving Digital Cameras

Ricoh strives to improve the performance and multiple functions of digital cameras while promoting their energy-saving capability. The Caplio RR30, which was marketed in fiscal 2002, can use lithium batteries or two AA batteries. The previous model required four AA batteries. The new model reduces electricity consumption approximately 59% compared with the previous model marketed in fiscal 2001.

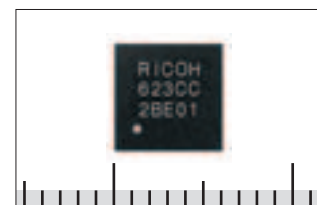


Caplio RR 30 digital camera

Analog One-Chip Energy-Saving LSI for Cellular Phones

In the area of cellular phones, which are increasingly being downsized and added with more functions, it is very important to prolong the life of the batteries the phones use. Ricoh developed an analog one-chip LSI, which can halve the electricity consumed by a cellular phone by effectively controlling the electricity. The LSI is equipped with a voltage regulated power supply in ECO mode*. The product is supplied to cellular-phone manufacturers. In fiscal 2002, the product contributed to reducing CO₂ emissions by 1,000 tons on an annual basis.

* Patent registered in the United States and applied for in Japan



Analog one-chip LSI for cellular phones

Environmental Technologies and Products Development (Resource Conservation and Recycling)

In an effort to improve profitability in the recycling business on a global scale, the Ricoh Group is promoting its product platform and module design and refining its recyclable designs. For example, decreasing the number of parts used will help reduce costs, mechanical failure, and environmental impact and improve customer satisfaction. It will also help in the more-efficient reuse and recycling of used products. Ricoh manufactures products based on the 3R concept of reduce, reuse, and recycle, taking the following into consideration: product design, capital investment, marketing, maintenance, and more efficient recycling.

* See page 16, for Reconditioned digital copiers.

The Ricoh Group's Concept of Product Development, Manufacturing, and Recycling

Reduce

Environmental impact is reduced if products are made smaller, lighter, and longer lasting.

Reuse

The reuse of products is possible long after the product's life has ended thanks to the use of modular designs and more-advanced recyclable designs.

Recycle

Promoting the recycling of parts and materials as much as possible within the Ricoh Group.

Product Platform and Module Design

Ricoh is introducing a product platform and module design to next-generation products in order to develop and market products with less environmental impact in a more efficient and timely manner. The purpose of this design scheme is to aid decision making on the product platform (structure), modules mounted on and sharing the platform, and modules used throughout the product line and across generations. This plan is best suited for "the era of the environment" because it allows products to keep up with the changes of the times by simply having the necessary modules updated.

Recyclable Design

More-efficient reuse and recycling can be realized by improving the disassembly and sorting of products collected after use and choosing materials that contain less chemical substances and are easily recyclable. In 1993, Ricoh announced its policy on recyclable designs for significantly reducing the time and cost it takes for recycling (e.g., fewer screws used in the machine and standardizing plastic materials). Ricoh also expanded its policy on recyclable designs and product assessment system to cover its entire line of copiers, facsimiles, laser printers, and multifunctional copiers.

Provisions for Recyclable Designs

1. Provision for the entire product line
2. Provision for reuse
3. Provision for recycling
4. Provisions for the recycling of chemicals and the recovery of energy
5. Provision for supplies (e.g., toner cartridges)
6. Provision for packaging

Recyclable Design Policy

● Level 1 (1993)

- The use of insert molding prohibited
- The number of parts and screws to be removed when changing main components set
- The use of E-rings prohibited
- The adhesion of resin materials to different materials prohibited
- The amount of packaging reduced
- The use of heat caking prohibited
- The use of toxic chemical substances prohibited
- Grading for outer packaging set (New)
- Indicating material grades on labels made mandatory (New)

● Level 2 (1994)

- Grades reorganized pursuant to the completion of the Comet Circle concept
- Provisions for reusable designs extended
- The use of resin that contains chlorine prohibited (dioxin prevention)
- The reduction in the number of parts and screws to be removed when changing main components

● Level 3 (1996)

- New provisions for recycling supplies added
- New provisions for harness layouts added
- New provisions for the restricted use of nitrous resin added
- The use of nylon clamps restricted
- Articles revised, taking economic benefits into consideration

● Level 4 (1999)

- Appropriate design items for process cartridges added
- New provisions for recyclable printed circuit board designs added
- The number of screw types reduced
- The use of nonhalogenous, fire-retardant resin introduced
- An overall revision for set values of allowable change in speed for machine's shock resistance has been made.

● Level 5 (2001)

- New provisions for the reuse of general parts added
- The use of electronic counters prohibited, and the mounting of nonelectronic counters made mandatory
- Regulation on environmentally sensitive substances (e.g., batteries, hexavalent chromium, and lead) tightened
- Polyethylene terephthalate added to materials used in making toner bottles
- New provisions for logos added to the Container Packaging Recycle Law

Recycling of Toner Cartridges

Ricoh started the full-scale collection of all office supplies, such as toner cartridges, in 1998 and completed the establishment of a nationwide recovery and recycling network in fiscal 2001. The network started operations in fiscal 2002. Collected toner cartridges are recovered and shipped according to Ricoh's quality standards. Cartridges that satisfy these standards are disassembled, sorted, cleaned, inspected, and supplied to production lines as parts while others that do not satisfy are recycled into raw materials.



Recovered toner cartridge

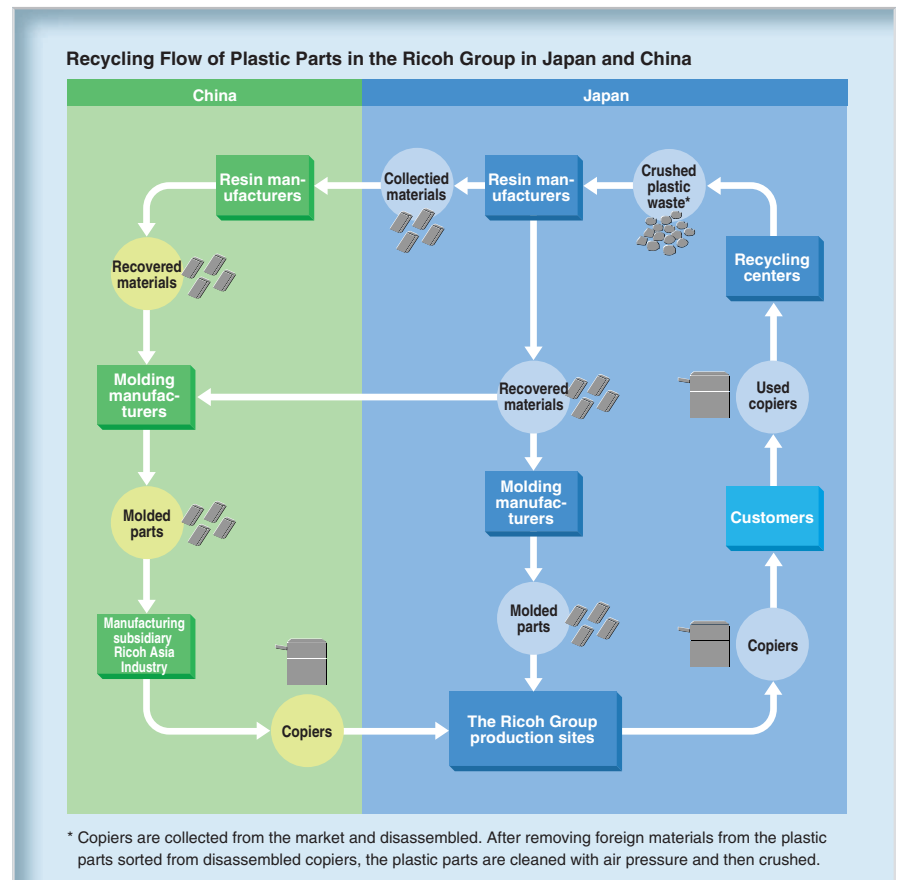
Further Recycling of Materials

In fiscal 2002, Ricoh Group companies in Japan collected end-of-life products and recycled 90% or more of the materials used in them, including metals and plastics. This activity was based on the idea of "Priority on Inner Loop Recycling."* Compared with the recovery of energy by incineration, the recycling of materials is more useful in the cost-efficient reduction of environmental impact.

* See page 12.

Recycling of Plastic Parts

In 1994, Ricoh began indicating the grade and type of plastic materials used in each part of a product on labels according to the Company's recyclable design policy. Since then, labeling has been conducted to ensure the better recycling of plastic materials. The plastic parts of end-of-life products are sorted and crushed by grade and mixed with virgin plastics to be reused in Ricoh products. Ricoh's recycled plastic parts contain up to 20% to 30% recycled materials. In Japan, in fiscal 2002 Ricoh collected approximately 200 tons of six different types of plastics and processed them into approximately 600 tons of re-



cycled materials by adding virgin materials to them. Recycled materials are reused in Ricoh products manufactured in Japan and China. Ricoh has thus achieved a closed recycling of plastic materials on a global scale.

* See figure above.

Recyclable Design for Toner Cartridges

To reduce the environmental impact caused by toner cartridges throughout their life cycles, Ricoh independently developed a soft toner cartridge. Under this system, only the soft cases housed within hard cases need to be replaced with new ones when refilling toner cartridges. The hard cases can be used continuously. The system is used in the Aficio CL7000 (IPSiO CX7200/8200) color printer and other products. The system reduced the environmental impact caused by toner cartridges throughout their life cycle 70% or more

compared with that caused by replacing old cartridges with new ones*. Also, the system reduced cost approximately 10%. Because toner can be replenished easily by inserting the cartridge downward, it is very attractive to users.

* When reused five times (environmental impact calculated in terms of CO₂ emissions)
Ricoh has filed more than 150 patent applications (as of March 2003) in Japan for the soft toner cartridge refilling system.



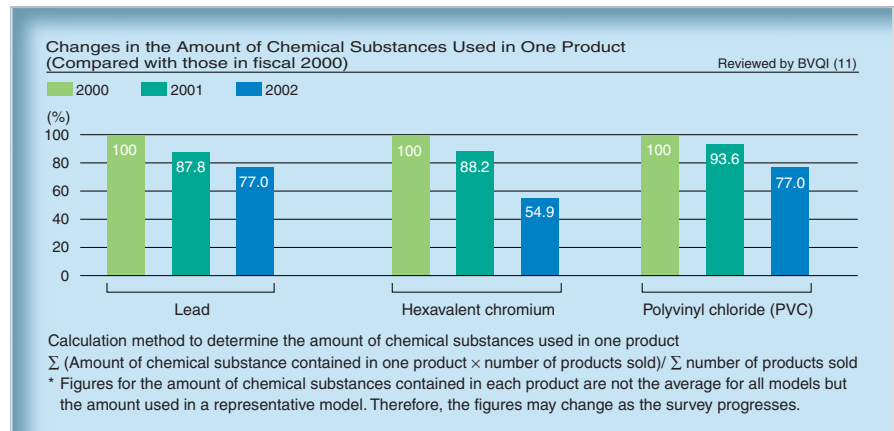
Soft case for the soft toner cartridge refilling system

Environmental Technologies and Products Development (Pollution Prevention)

Aiming to reduce the impact on the global environment, particularly at the end-user stage, the Ricoh Group is tackling important issues, specifically reduction of environmentally sensitive substances contained in its products and reduction of noise, ozone, dust, and styrene emissions at the end-user stage. To reduce the amount of environmentally sensitive substances in products, the Ricoh Group worked together with suppliers in adopting lead-free solder, reducing the use of hexavalent chromium in steel plates, and reducing the use of PVC in wire coating, with the goal of completely eliminating these substances by the end of fiscal 2004. Environmentally sensitive substances do not affect the environment when customers use them properly, but they may cause harm when they are mined or improperly disposed of. Reducing the use of these substances will ultimately lessen recycling costs as well as the environmental impact a product has during its life cycle. The Ricoh Group has taken on these challenges as part of its sustainable management activities. The imagio Neo 601/751 series multifunctional copiers marketed in Japan in December 2002 significantly reduced lead, hexavalent chromium, and PVC content. They ranked the first¹ in the copier division of Green Purchasing Network (GPN)² in Japan.

1. As of end of March 2003

2. GPN provides information on eco-friendly products to promote green-purchasing approaches.
<http://www.gpndb.jp> (Japanese only)



Reducing the Amount of Environmentally Sensitive Substances Contained in Office Equipment (Japan)
(As of end of March 2003)

Products	GPN Database Rating		Use of chromate-free steel plates (in parts designed by Ricoh)
	Lead-free Soldering	Use of PVC in wire coating	
imagio Neo351/451 Series	A	II	90% or more
imagio Neo600/750 Series	A	II	85% or more
imagio Neo601/751 Series	A	II	85% or more
imagio Neo900Pro/1050Pro	A	II	60% or more
imagio Neo220/270 Series	A	III	90% or more
imagio Neo C380	A	II	70% or more
imagio Neo C240/320 Series*	B	II	95% or more
IPSIO CX7200/8200	A	II	70% or more
IPSIO NX650S/750/850	A	III	95% or more
IPSIO Color 6000/6500	C	IV	100%
RIFAX SL3400	A	II	20% or more
RIFAX ML4600	A	II	80% or more

* Usage rate of chromate-free steel plates in model 765 is approximately 90%.

Reducing the Amount of Environmentally Sensitive Substances Contained in Office Equipment
(outside Japan) (As of end of March 2003)

Products	Classification according to GNP standards in Japan		Use of chromate-free steel plates (in parts designed by Ricoh)
	Lead-free Soldering	Use of PVC in wire coating	
Aficio 2035/2045 Series	A	III	95% or more
Aficio 1060/1075 Series	C	IV	85% or more
Aficio 2090/2105	A	II	60% or more
Aficio 1022 ¹ /1027 ² /1032 Series	A	III	90% or more
Aficio 1224C/Aficio 1232C Series	B	IV	90% or more
Aficio CL7000	A	II	70% or more
Aficio 1013/RICOH FAX3310L Series	C	IV	100%
RICOH FAX4410L/4410NF	A	II	100%
Aficio CL5000	C	IV	100%
RICOH FAX 5510L	A	III	80% or more
RICOH FAX 5510NF	A	III	80% or more

1. Measures not taken for products sold in the North American and European markets.


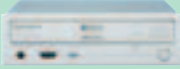
2. Measures not taken for products sold in the European market.

GPN Standard

Lead-free Soldering		Use of PVC in Wire Coating	
• Solder used to fix parts onto printed wiring boards (solder contained in parts are excluded.) Lead-free rate = weight of lead-free solder/total weight of applicable solder		• PVC used to coat wires for copiers PVC replacement rate = weight of non-PVC wire coating/total weight of wire coating	
AA	100% lead-free	I	100% none use
A	50% or more is lead-free.	II	50% or more is replaced by other materials.
B	10% or more is lead-free.	III	Replacement rate is 10% or more.
C	Less than 10% is lead-free.	IV	Replacement rate is less than 10%.

* As of end of March 2003, there is no copier designated as AA or I.

Reducing Environmentally Sensitive Substances Contained in Personal Equipment

Caplio RR30 (Digital camera)		<ul style="list-style-type: none"> PVC and solder used for main PWB* have been reduced 99.9% and more than 45%, respectively, compared with those in fiscal 1999. Hexavalent chromium is not used. * Printed wiring board
MP-5125 A (disk drive)		<ul style="list-style-type: none"> Hexavalent chromium is reduced more than 65% compared with that in fiscal 1999. Chromate-free steel plates are used for the first time in Ricoh drives manufactured in China.

Reducing Emissions of Noise and Environmentally Sensitive Substances

In order to make copiers or other machines more comfortable to use, the noise emitted from them must be reduced. These machines also emit ozone and dust, albeit in small quantities. Ricoh is improving its designs to reduce the emission of noise, ozone, and dust.

The Noise Measurement Laboratory Obtained ISO/IEC 17025 Certification

The noise measurement laboratory at Ricoh's Ohmori Office obtained ISO/IEC 17025 certification from the National Institute of Standards and Technology (NIST) in November 2002. ISO/IEC 17025 sets standards for laboratory performance, especially for advanced laboratory technologies used in laboratories, including traceability of measurement methods and error control. This certification guarantees the data on noise emissions by Ricoh products meets international standards.

Working Together to Reduce Environmentally Sensitive Substances in Components

Ricoh works with parts manufacturers to promote development of parts free of lead, PVC, and hexavalent chromium. These partnerships have earned Ricoh products a high rating on the GPN database in Japan, which promotes green-purchasing. Ricoh Group's overseas production sites are also a part of this effort.

● Lead-Free Solder

Ricoh and Orion Electric Company, LTD. worked together to develop a power supply device using lead-free solder, making use of Ricoh's technology and know-how in lead-free solder, as well as Orion's original production technology. There are about 600 products¹ registered in the copier division of the GPN database. Of the 54 products receiving an "A" rating,² 28 are Ricoh products. In the category of color copier, Ricoh imagio Neo C380 has received an "A" rating.

1. As of end of March 2003
2. See table at left.

● Reducing Use of PVC in Wire Coating

Ricoh and Kyoto Electric Wire Corporate LTD. jointly developed a power cable free of PVC and lead. The Company also worked with manufacturers of wire, connectors, and harnesses to develop PVC- and lead-free wire harness. All 28 products rated II* in the copier division of the GPN database are Ricoh products, including the Aficio 1224C/1232C (imagio Neo C240/320) series and imagio Neo C380 color copiers.

* See table at left.

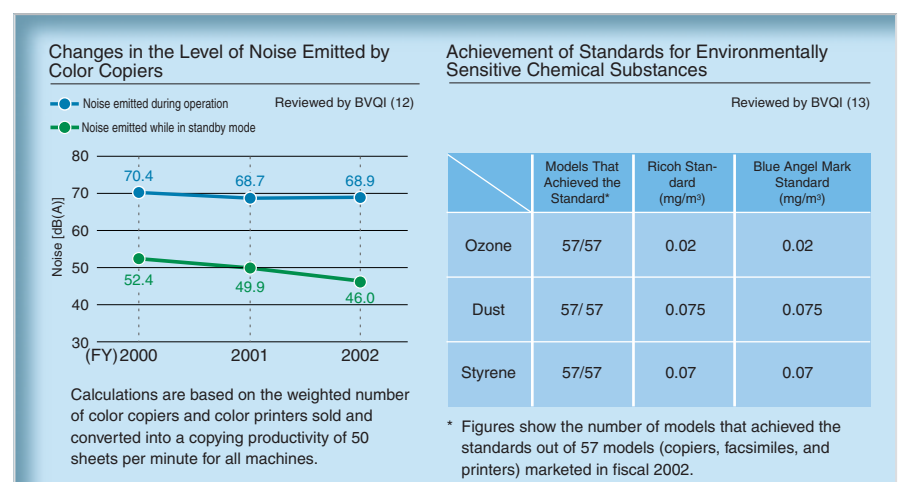
● Reducing Use of Hexavalent Chromium in Steel Plates

Ricoh worked with JFE Steel Corporation (the former NKK) to develop galvanized steel plates free of hexavalent chromium. One product marketed in Japan and three overseas products use exclusively Chromate-free steel plates* in their manufacture.

* Refers only to parts designed by the Ricoh Group and does not include parts purchased from subcontractors.



imagio Neo C380
(with optional model 75
attached)



Procurement

We are promoting Green Partnership with suppliers and customers.

In order to reduce the environmental impact of our activities, it is vital to establish Green Partnership among suppliers, the Ricoh Group, and customers for the benefit of all. The Ricoh Group supports environmental management systems (EMS's) for suppliers and, in return, asks them to

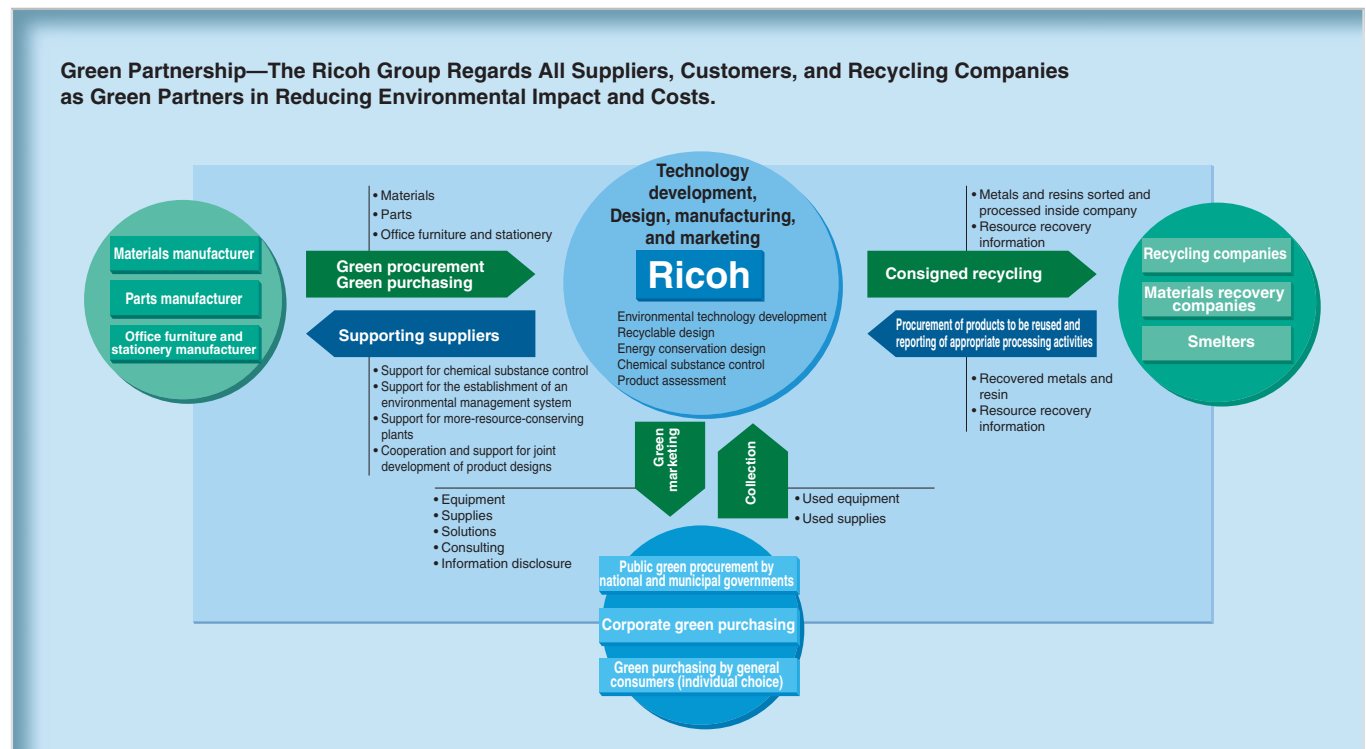
provide the Ricoh Group with raw materials and parts that have less environmental impact. Suppliers are thus able to develop and manufacture parts that have less environmental impact at more environmentally sound plants, while the Ricoh Group is able to manufacture products for customers that have less environmental impact.* The Ricoh Group is continuing its efforts to develop the Green Partnership at production sites in Japan, the Americas, Europe, and

China as a part of our global sustainable management program.

* See page 55 for details on the Green Partnership with customers.
** See page 17 for details on recycling waste from other industries and elimination of specified chemical substances.

Definition of Ricoh Group Green Purchasing

- **Green procurement**
(green purchasing of materials and parts)
- **Green purchasing**
(green purchasing of office furniture and stationery)
- **Green marketing**
(green purchasing by customers)



International

Supporting Suppliers

The Ricoh Group established Green Procurement Guidelines to procure raw materials and parts from more environmentally sound plants, and it is promoting this effort worldwide. The guidelines are aimed at helping small- and medium-size suppliers to efficiently establish EMS's. Under the guidelines, Ricoh's internal auditors visit

suppliers to better understand their operations, thus streamlining the preparation of management materials. Additional efforts include work by the Ricoh Group's highly experienced engineers to improve supplier quality, meetings to share technologies with suppliers and introduce the Ricoh Group's activities, and promotion of awareness of environmental impact through reports on successful green procurement. Although ISO 14001 certification usually takes 10 to 12 months, these efforts have

shortened the time needed for EMS implementation to only four to six months.



The Ricoh Group Green Procurement Guidelines (French)

<http://www.ricoh.co.jp/ecology/guideline>
(available in Japanese, English, and Chinese)

Japan

Green Procurement of Paper

NBS Ricoh Co., Ltd., which provides printing paper as well as recycling services for office paper, encourages paper manufacturers to procure pulp made from trees grown on plantations rather than harvested from virgin forests and use elemental chlorine free (ECF) bleaching. The company also promotes procurement of pulp taken from forests certified by the Forest Stewardship Council (FSC).*

* See page 55.

Green Purchasing

Recognizing green purchasing as a Group-wide effort, the Ricoh Group has developed a green purchasing list to promote efficient green purchasing for fiscal 2001. The list includes office automation (OA) equipment, supplies, stationery, sales promotion giveaways, and gifts. In October 2002, a new online purchasing system was implemented for the ordering of green products that is expected to cut costs by ¥2 billion per year.

Europe

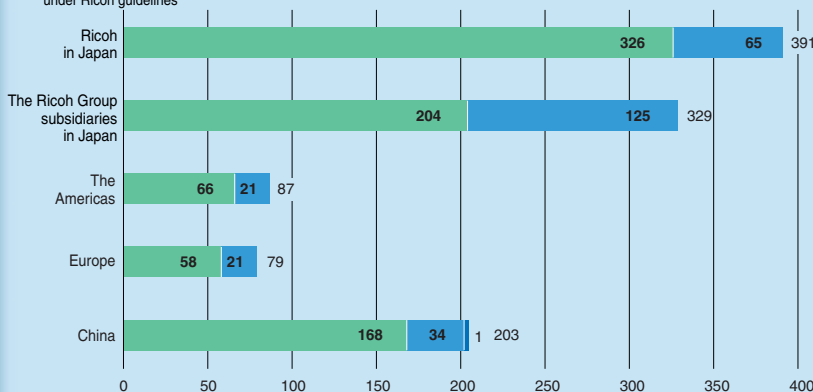
Green Purchasing

Ricoh Europe B.V., the regional sales headquarters for Europe, drew up its own detailed guidelines for the green purchasing of office supplies, paper, and ink used in the making of sales promotion tools such as brochures. The guidelines also cover selection of banks, cleaning companies, and airline companies for business trips, and are to be adopted by Lanier and NRG, which are Ricoh Group sales companies, as well as by all Ricoh European Sales companies.

Results of Global Green Procurement Activities (Status of Environmental Management Certification of Suppliers)

As of end of March 2003

- ISO 14001 certification acquired
- Certification under Ricoh guidelines acquired
- Preparing to acquire ISO 14001 certification or certification under Ricoh guidelines



Promoting Green Procurement

In order to provide customers with products that have less environmental impact from an LCA standpoint, it is important to reduce the environmental impact of both suppliers' manufacturing processes and production of raw materials and parts. With this in mind, the Ricoh Group is developing its business activities in partnership with its suppliers.

● Reducing environmental impact in manufacturing processes

To reduce environmentally sensitive substances at the manufacturing stage, the Ricoh Group has requested leading suppliers to completely eliminate the use of chlorofluorocarbons (CFCs) and chloric organic solvents by the end of fiscal 2004.

● Reducing environmental impact in production of raw materials and parts

To reduce environmentally sensitive substances (e.g., lead and hexavalent chromium) in the production of raw materials and parts, the Ricoh Group requests suppliers to submit certification showing they do not use banned substances; it conducts surveys of the chemical substances contained in parts and materials; and it en-

courages suppliers to switch to the alternative substances wherever possible. Our green procurement standards¹ (in Japanese, English, and Chinese) are available to the public on the Ricoh Web site, and we actively solicit proposals from suppliers in the development of these standards. A briefing was held in Japan on purchasing policies, during which the Ricoh Group presented specific goals, namely, reducing environmentally sensitive substances in products, promoting reuse of parts, and reducing power consumption in products. In fiscal 2002, a supplier submitted a proposal to develop parts² made from PET bottle materials, and this proposal was successfully put into practice. At the 2nd Ricoh Group Green Procurement Meeting held in February 2003, a case study was presented on the significant reduction of environmental impact resulting from the partnership between the Ricoh Group and one of its suppliers. The Group will continue working to strengthen such partnerships.

1. <http://www.ricoh.co.jp/ecology/guideline/02.html>

2. See page 17.

Production (Preventing Global Warming)

Endorsing the Kyoto Protocol, Ricoh promotes a reduction in total greenhouse gas emissions.

In July 2001, Ricoh joined e-mission 55, a signature-collecting campaign that was conducted by companies supporting the Kyoto Protocol. Ricoh was the first leading manufacturer in Japan to sign the document and make a commitment to the environment. In fiscal 2002, increased production of supplies and semiconductors, the manufacture of which requires significant amounts of energy, was the primary reason for Ricoh's higher energy consumption. The Ricoh Group, however, has set a number of energy conservation goals to help prevent global warming and it will continue working to reduce energy consumption. Greenhouse gases other than CO₂ are expected to be cut 10% from their 1995 level by the end of fiscal 2010.

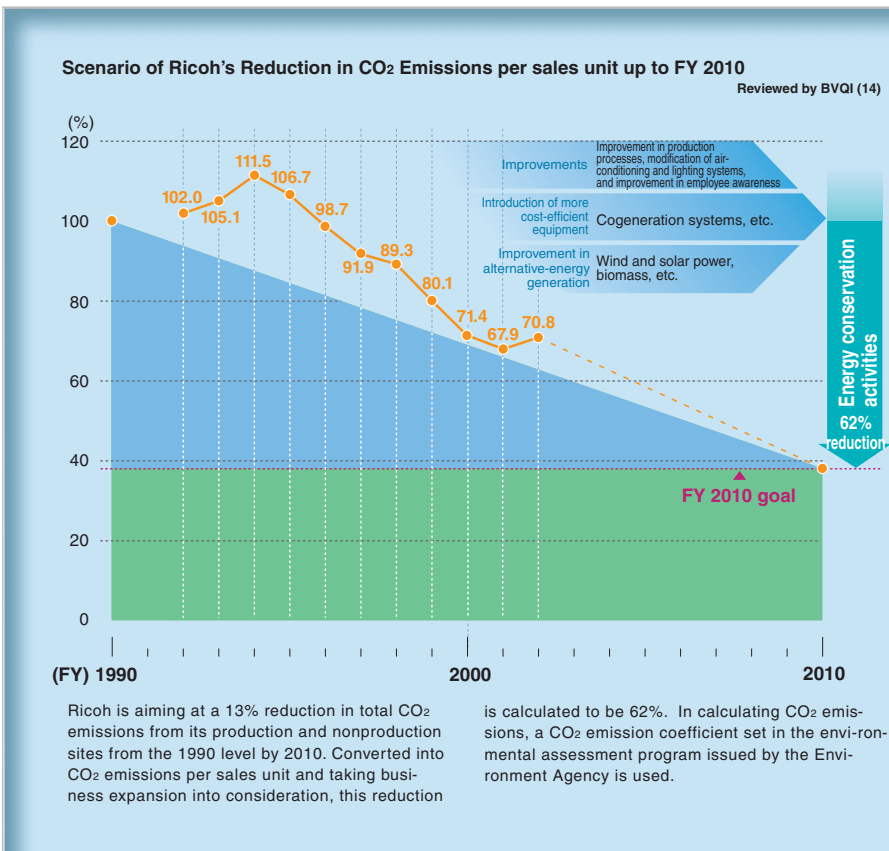
The Ricoh Group's Goals for Reducing CO₂ emissions (Total Amount Emitted)

		Goal for fiscal 2004 (compared to fiscal 2000 figures)	Goal for fiscal 2010
Japan	Ricoh and Ricoh Group manufacturing subsidiaries	2% reduction	12% reduction * 13% reduction for Ricoh (compared to fiscal 1990 figures)
	Ricoh Group nonmanufacturing subsidiaries	2% reduction	—
Outside Japan	Ricoh Group manufacturing subsidiaries	2% reduction	10% reduction (compared to fiscal 1996 figures)

Japan

Installation of New Air-Conditioning Systems

Much of the equipment at Ricoh Micro-electronics Co., Ltd. plants produces heat, making 24-hour air conditioning indispensable. Air conditioning accounts for more than half the total energy consumption at these plants. In May 2002, the company installed new air-conditioning systems that combine an ice thermal storage system and a chilled water system for improved environmental performance and economic efficiency. The systems enable 24-hour operation by making ice and chil-



led water at night. Compared to the heavy oil thermal power generation system previously in operation, the new systems reduce annual CO₂ emissions by 60%, or 1,000 tons, and annual operating costs by 45%, or ¥10.1 million.



Brine screw chiller



Ice thermal storage tank

Achieving Environmental Conservation and Cost Reduction Simultaneously through TPM

Ricoh's Fukui Plant* is engaged in environmental conservation activities under the slogan, "Environmental conservation is a mission we should accomplish." Extending to environmental conservation the goal of improving its total productive maintenance (TPM), whereby all employees pay continuous attention to their daily activities, the plant achieved Zero-Waste-to-Landfill through such efforts as saving raw materials, avoiding waste in manufacturing, and streamlining business activities. Fukui Plant also worked to reduce CO₂ emissions and drew up plans for each production

Estimated Costs Efficiency of an Ice Thermal Storage/Chilled Water System in Environmental Conservation (Segment Environmental Accounting)

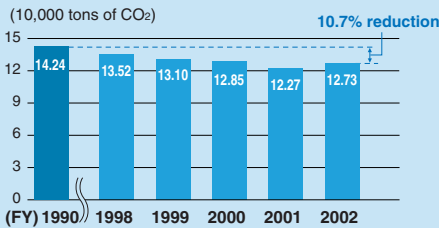
Costs			Effects			
Item	Main costs	Amount	Economic benefits		Effect on environmental conservation	
			Item	Amount reduced	Item	Amount reduced
Business area costs	Investment	34.45 (millions of yen) (Difference from the conventional method)	Reduction in heat and light expenses	12.9 (millions of yen)	CO ₂ emission	866 (t)
			Reduction in water expenses	1.4 (millions of yen)	Water consumption	10.9 (t)

* Effects are calculated through a comparison to fiscal 2000 figures.

Calculated from total investment (¥169 million)

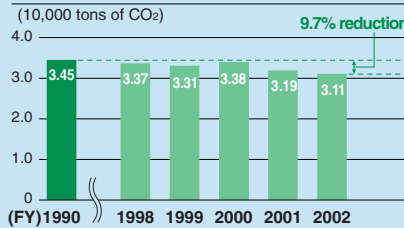
Japan

Ricoh's Energy Consumption (CO₂ conversion¹) Reviewed by BVQI (15)



1. Calculated using a CO₂ emissions coefficient taken from an examination on greenhouse gas emission calculations issued by the Ministry of the Environment

Energy Consumption at Production Sites in Japan Other Than Ricoh's (CO₂ conversion¹) Reviewed by BVQI (16)



Energy Consumption at Nonproduction Sites in Japan Other Than Ricoh's (CO₂ conversion¹) Reviewed by BVQI (17) (100 tons of CO₂)

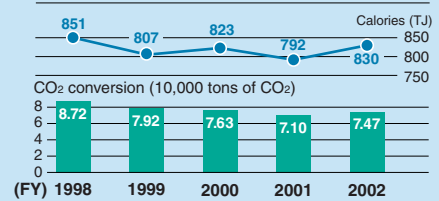
	FY 2002
Sales	346
Maintenance and Services (Ricoh Technosystems)	138
Logistics (Ricoh Logistics System)	37
Finance (Ricoh Lease)	5
Total	526

Changes in Ricoh's Major Energy Consumption Reviewed by BVQI (18)

	FY 2000	FY 2001	FY 2002
Kerosene (kℓ)	7,811	6,624	7,273
Heavy oil A (kℓ)	171	183	188
Town gas (1,000 m ³)	11,958	11,809	12,677
Electric power purchased (1,000 kWh)	228,935	222,169	224,983

Energy Consumption outside Japan

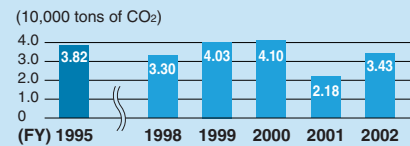
Energy Consumption at Production Sites (CO₂ conversion² and calories) Reviewed by BVQI (19)



2. In order to increase accuracy, data was revised based on the CO₂ conversion coefficient and power generation condition of each country. Therefore, the figures listed are different from those in the Ricoh Group Sustainability Report (Environment) 2002.

The Ricoh Group Worldwide

Greenhouse Gas³ Emissions Other Than CO₂ at the Ricoh Group Worldwide (CO₂ conversion) Reviewed by BVQI (20)



* The following formula was used to determine the greenhouse gas emissions.
Emission = \sum (amount emitted into the atmosphere \times global warming coefficient)
3. NF3 and substances that have a global warming effect and designated in the Kyoto Protocol.

line, aiming to maximize energy efficiency throughout the plant. This has enabled the plant to achieve environmental conservation and cost reductions simultaneously, resulting in savings equivalent to 900 tons of CO₂ emissions and ¥16 million yen in power and kerosene costs in fiscal 2002.

* <http://www.ricoh.co.jp/fukui-plant/> (Japanese only)

Improvement of Lighting Equipment

As a part of the renovation project at Ricoh's Atsugi Plant, the water tower was painted in organic fluorescent paint, and spotlights were replaced with black lights, resulting in a reduction of CO₂ emissions by 11.3 tons and savings of ¥440,000 per year. Replacing the footlights along sidewalks outside the plant with solar-powered lamps reduced CO₂ emissions by one ton and electricity charges by ¥20,000 per year. Photocatalytic reaction in the paint is able to break down 5.7 kilograms of NO_x in the air annually.

The Americas

United States: Optimizing Air-conditioning Control

At the California plant of Ricoh Electronics, Inc. (REI) chillers are used to prevent molding devices from overheating. If the room temperature is too low, however, condensation occurs, which means the room must be heated. By conducting tests to optimize the operation of heaters and chillers, the plant was able to reduce power consumption in air conditioning and heating by 80%.

China

Shenzhen: Energy Conservation at RAI

Ricoh Asia Industry (Shenzhen) Ltd., which is facing increased production demand, is making earnest efforts at environmental conservation. Examples include replacing conveyor belts used to manufac-

ture leading models with those that operate intermittently, improving air conditioning refrigerants, and making effective use of insulation to maintain the appropriate temperature for molding devices. In these ways, RAI is promoting an approach to sustainable management in which all employees participate in reducing energy consumption, thereby helping to prevent global warming and cut costs.



Intermittent operation production line

Production (Resource Conservation and Recycling)

The Ricoh Group takes the lead in establishing a resource-recirculating society by further promoting Zero-Waste-to-Landfill.

The Ricoh Group promotes Zero-Waste-to-Landfill activities as a part of its environmental management system by efficiently using resources—particularly water, improving the efficiency of production, reducing waste disposal costs, and improving corporate quality by promoting employee awareness of environmental conservation. These activities are also carried out at non-manufacturing sites. Based on the excellent results achieved in the Zero-Waste-to-Landfill effort, the Ricoh Group is actively working to establish a resource-recirculating society through local community efforts.

* See page 56 for Zero-Waste-to-Landfill at non-manufacturing sites.

Promoting Zero-Waste-to-Landfill

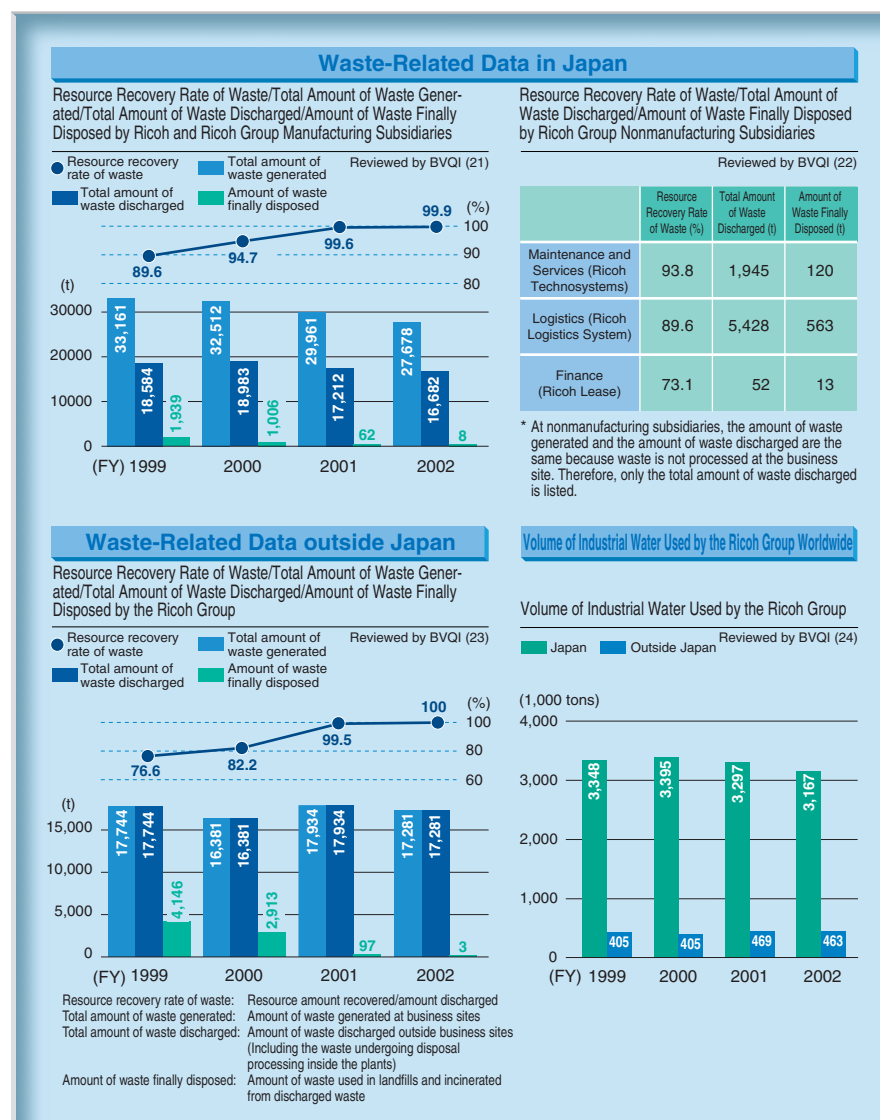
Zero-Waste-to-Landfill cannot be achieved through waste recycling alone. Regardless of the intensity of the recycling effort, the massive amount of materials produced inhibits effective environmental impact reduction. The Ricoh Group therefore promotes Zero-Waste-to-Landfill activities, primarily by limiting the production of waste through the “5Rs” described below.

The Ricoh Group's 5Rs

- 1. Refuse:** Avoid buying anything that may become waste.
- 2. Return:** Return what can be returned to suppliers.
- 3. Reduce:** Reduce waste.
- 4. Reuse:** Reuse products.
- 5. Recycle:** Recycle products.

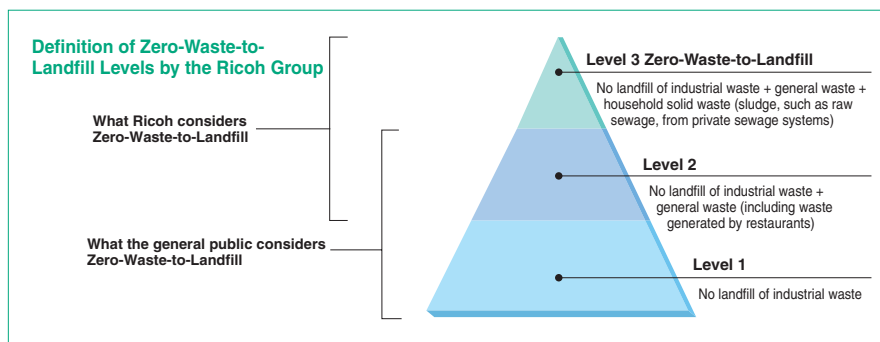
Zero-Waste-to-Landfill by the Ricoh Group

Ricoh classifies zero waste (100% resource recovery rate and no waste used as landfill) into three levels. Although zero waste is roughly defined as no industrial waste being generated (level 1), the Ricoh



Group aims at also eliminating general waste (level 2) and household solid waste, such as sludge (e.g., raw sewage), from private sewage systems (level 3). We regard cases in which waste is not utilized as an energy resource and simply inciner-

ated as mere disposal of waste. The Ricoh Group aims at achieving complete resource recycling by reducing, reusing, and recycling resources, as well as engaging in thermal recovery of waste.



Japan

“Welcome” Recycling

Ricoh Elemex Corporation's Okazaki Plant conducts a “welcome recycling,” campaign in which waste produced at the company is reused. As a part of this effort, the company has produced buffers, binders, and toilet paper from used paper; soap from used edible oil from the cafeteria; and non-fired bricks from purified plating sludge. The bricks are used for sidewalks at the plant site.

Collection of Information through PDAs

Ricoh's Atsugi Plant collects data on 3,000 items, including power meters, water meters, and the status of equipment in the plant. Work routines were streamlined through the use of personal digital assistants (PDAs), which cut paper consumption (previously 500 sheets per week) and reduced the number of data entries required.

Hot Runners for Injection Molding Equipment

Ricoh's Atsugi Plant replaced the runners of the 350-ton injection molding equipment (which are used to align the position of materials in molds) with hot runners. This resulted in a reduced discharge of waste plastic and lower materials costs. The old runners were crushed for recycling, but some parts had to be disposed of due to their composition. Hot runners, by contrast, produce no waste because parts can easily be broken down and reused. From September 2002 through

March 2003, the plant reduced waste plastic by 19.2 tons and costs by ¥21 million.

Toner Recycling

In fiscal 2002, Ricoh worked with Shinko Flex Inc. to develop a method to use waste from the toner production process to make flux for steelmaking (patent pending). The flux was sold to iron mills, creating a savings of ¥6 million annually in toner waste disposal costs at Ricoh's Numazu and Fukui Plants. An experimental project aimed at collecting toner from used cartridges is underway at recycling centers* in Japan.

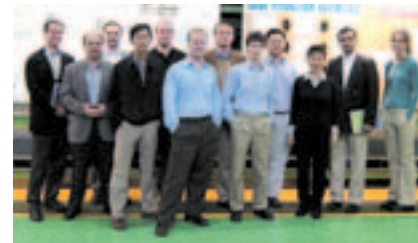
* See page 60.

The Americas

Promoting Zero-Waste-to-Landfill in U.S. Communities

Ricoh Electronics, Inc., (REI) a U.S. manufacturing subsidiary, achieved Zero-Waste-to-Landfill in fiscal 2000. Its plant in California regularly engages in activities to raise awareness of Zero-Waste-to-Landfill in the local community. In April 2002, REI worked with a local environmental business support center to hold a zero-waste seminar. At the seminar, it talked about its own efforts to achieve Zero-Waste-to-Landfill with more than 20 participants, including local businesses, citizen organizations, representatives from local assemblies, and the California Integrated Waste Management Board. The plant also invites MBA students from the University of California, Irvine (UCI) Graduate School of Management, and

students from the University of California, Los Angeles (UCLA) to visit the plant.



UCLA students who participated in the Zero-Waste-to-Landfill/waste reduction seminar

China

Shenzhen: Progress in Zero-Waste-to-Landfill

Ricoh Asia Industry (Shenzhen) Ltd. (RAI), which achieved Zero-Waste-to-Landfill in fiscal 2001, worked to promote awareness of Zero-Waste-to-Landfill by inviting 117 visitors from 17 companies to tour its zero-waste plant in fiscal 2001. In November 2002, more than 1,600 employees picked up garbage in a wide area, both inside and outside the plant site, further raising employees' awareness of environmental conservation issues. Employees also volunteered to clean up downtown Shenzhen. Through these environmental conservation activities,* RAI was certified as the first green company in Shenzhen.

* See page 48.



More than 1,600 employees participate in an extensive garbage collection project.



Cleaning up downtown Shenzhen.

Costs and Effects of Hot Runners for Injection Molding (Segment Environmental Accounting)

Costs			Effects			
			Economic benefits		Effect on environmental conservation	
Item	Main cost	Amount	Reduction	Amount	Reduction	Amount
Business area cost	Design and production cost	¥2.56 million	Waste disposal expenses	¥1.86 million	Amount of waste discharged	19.2 (t)
			Material cost, etc.	¥21.77 million		

* Effects are calculated for seven months, starting from September 2002.

Production (Pollution Prevention)

A global approach to identifying and reducing the use and transfer of chemical substances is being taken.

The Ricoh Group established the Ricoh Environmental and Chemical Safety Information System (RECSIS), which categorizes substances that fall under Japan's Pollutant Releases and Transfer Register (PRTR*) Law, as well as environmentally sensitive substances that are regulated in other parts of the world, according to whether they are to be prohibited, reduced, or controlled, in line with the Group's internal regulations, which are

stricter than the legal requirements set by most countries. The Ricoh Group endeavors to control as well as reduce the amount of chemicals used, emitted, discharged, and disposed of by setting goals to reduce the dichloromethane and ozone-depleting substances used and emitted by the end of fiscal 2004. The Group is striving to establish a system that will provide prompt answers to inquiries from customers, original equipment manufacturers (OEMs), and civil organizations around the world regarding their use of chemical substances. In fiscal 2002, the Group conducted surveys on soil and groundwater contamination in Japan and reported its findings to relevant local governments. Similar

surveys are underway at relevant sites in other regions than Japan.

* Under the PRTR system, the release of potentially harmful environmental pollutants into the air, water and soil; product contents; and the transfer of waste are collected by enterprises and then assessed/disclosed by third party. The results are tabulated and released by an independent organization. Member countries of the Organization for Economic Cooperation and Development (OECD), such as the United States, Canada, the U.K., the Netherlands, and Japan, have adopted this system. The PRTR Law in Japan was based on this system. In fiscal 1997, Ricoh participated in the PRTR system that the Federation of Economic Organizations (Keidanren) independently started prior to its legislation by giving a summary of the PRTR data of all Ricoh business sites. We started supplying PRTR data from all Ricoh Group companies in fiscal 1998 and began reducing the consumption and emission of PRTR substances in 1999.

* See page 19 for surveys on and remediation of soil and groundwater contamination.

Survey Results of PRTR Substances in the Ricoh Group in Fiscal 2002¹ Reviewed by BVQI (25)

Substance No.	Substance*	Environmental impact coefficient ³	Amount	Amount emitted into air	Amount discharged into public water supply	Amount transported into sewers	Amount transported out of plants	Amount consumed	Amount treated ⁴	Amount recycled
1	Zinc chloride ²	10	31.4	0.0	—	—	—	29.6	0.0	1.7
29	4, 4-isopropylidenediphenol	1	8.5	—	—	—	—	7.9	—	0.6
43	Ethylene glycol	1	302.7	2.3	0.0	—	—	270.1	1.8	28.4
63	Xylene	10	9.9	8.5	—	—	0.0	0.1	—	1.3
101	2-ethoxyethyl acetate	100	1.4	0.1	—	—	0.5	0.2	—	0.5
144	Dichloropentafluoropropane (HCFC-225)	100	1.6	1.6	—	—	—	—	—	—
145	Dichloromethane	100	51.6	29.3	—	—	—	4.9	—	17.4
172	N, N-dimethylformamide	1	31.4	1.5	—	—	—	—	—	29.8
181	Thiourea	1	26.5	—	—	—	—	25.7	—	0.8
227	Toluene	10	1,346.6	226.4	—	—	0.0	130.1	413.6	576.4
230	Lead	100	264.4	0.0	—	—	0.0	190.6	—	73.7
232	Nickel sulfate ²	100	5.5	—	—	—	0.0	3.2	—	2.2

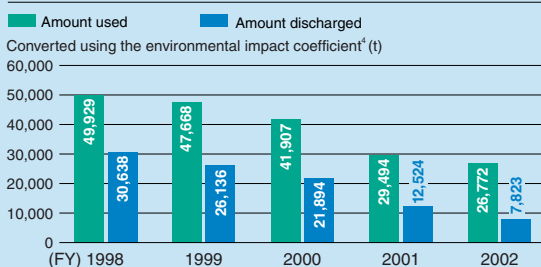
* Substances listed are those amounting to at least 1 ton per year. "—" indicates no entry.

- Pursuant to the PRTR Law
- The amount of metallic compounds is converted into metal.
- The environmental impact coefficient is set by Ricoh, taking toxicity, carcinogenicity, and the possibility of ozone depletion into consideration.
- The amount of Ricoh Group's target substances for reduction used and discharged is calculated using the following formula.

$$\text{Amount used} = \Sigma \{(\text{amount} - \text{amount consumed}) \times \text{environmental impact coefficient}\}$$

$$\text{Amount discharged} = \Sigma \{(\text{amount emitted into air} + \text{amount discharged into public water supply} + \text{amount discharged into soil}) \times \text{environmental impact coefficient}\}$$

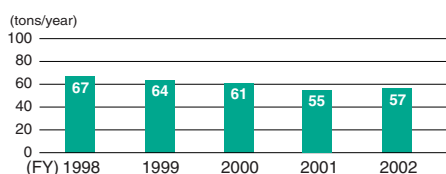
Changes in the Amount of the Ricoh Target Substances for Reduction* Used and Discharged Reviewed by BVQI (26)



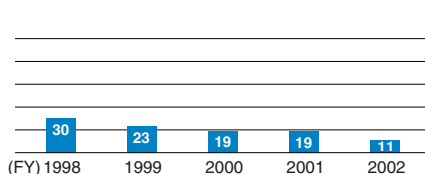
* The Ricoh target substances for reduction are defined as the PRTR substances designated by four Electric/Electronic Industrial Associations in Japan between fiscal 1998 and fiscal 2000. Coverage of chemical substances by Ricoh may differ slightly from those provided by the PRTR Law.

Changes in the Amount of Substances Discharged Following the Ricoh Group's Implementation of Pollution Prevention Measures

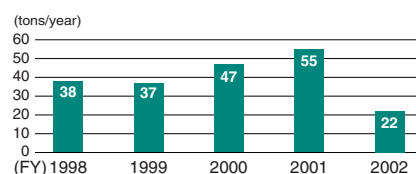
Air (NOx)



Air (SOx)



Water (BOD)



* The previously inaccurate figures for NOx have been revised.

International

Ricoh Environmental and Chemical Safety Information System (RECSIS)

The Ricoh Group established RECSIS to monitor data on chemical substances used, discharged, and disposed of at business sites. RECSIS is designed to reduce use of chemical substances, to prepare materials for PRTR reporting, and to respond to inquiries from outside the Ricoh Group. RECSIS, a part of the Ricoh Group's environmental impact information system, contains data on more than 2,000 types of listed chemical substances and environmental hazards.

PCB Storage

Seven Ricoh Group business sites in Japan store polychlorinated biphenyl (PCB) pursuant to the Law Concerning Special Measures for Promoting Appropriate Disposal of Waste Containing Polychlorinated Biphenyl, enforced in 2001. These facilities prevent PCB from splashing, spilling out, permeating the soil, or leaking due to mice or insects. The substances are kept in double-lined metal containers, placed on a leak-proof concrete floor, and stored in locked buildings. Appropriate disposal is expected to be completed by the end of 2010 as the infrastructure for PCB disposal is established in Japan.

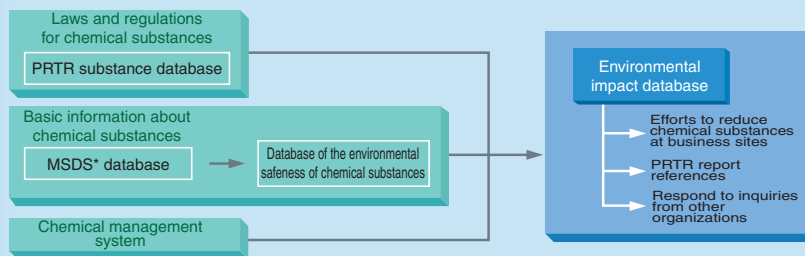
Penalties and Fines

No penalties or fines have been imposed on the Ricoh Group due to insufficient environmental safeguards.

Penalties and Fines (Rico Group)

	FY 2000	FY 2001	FY 2002
Number of cases	0	0	0
Amount	0	0	0

Environmental and Chemical Safety Information System for Business Sites



* Material safety data sheet

Japan

Information Disclosure to Communities and Local Governments

In a 1999 survey, Ricoh Elemex Corporation's Ena Plant discovered the soil and groundwater had been contaminated with trichloroethylene. The plant immediately reported the contamination to the relevant government authority, conducted the appropriate clean-up measures, and gave a thorough explanation to local residents. Its efforts to establish transparency and a favorable relationship with the local community were highly appreciated. Since then, other companies have visited the Ena Plant on the recommendation of government authorities, who regard the facility as a benchmark for pollution prevention.



A groundwater purification facility at Ricoh Elemex Corporation's Ena Plant

Europe

Abolishment of Solvent-Based Paint

Ricoh Industrie France S.A. has developed a water-based paint to replace its organic

solvent-based paint. The use of the water-based paint reduced emissions of volatile organic compounds into the air by 83%, resulting in total cost savings of ¥121,500, since the second half of 1998.

China

BOD Reduction at Ricoh Asia Industry (Shenzhen)

In fiscal 2001, in response to increased production and staffing at Ricoh Asia Industry (Shenzhen) Ltd. (RAI), a production base in Shenzhen, China, the company installed wastewater purification equipment to dispose of wastewater from the cafeteria and other facilities. As a result, biochemical oxygen demand (BOD) from wastewater was reduced from 36.4 tons in fiscal 2001 to 2.7 tons in fiscal 2002.



Installation of wastewater purification equipment at RAI

Costs and Effects of Water-based Cleaning of Ink-Fixing Rollers at RIF (Segment Environmental Accounting)

Costs			Effects			
			Economic benefits		Effect on environmental conservation	
Item	Main cost	Amount	Reduction	Amount	Reduction	Amount
Business area cost	Investment cost	452 EURO	Solvent cost	121,500 EURO	Amount of organic solvent used	1.32 (t)

* Effects are calculated for the period starting from the second half of fiscal 1998.

Transportation

From “cradle to cradle”
The Ricoh Group promotes establishment of a resource-recirculating logistics system.

To achieve a resource-recirculating society, one important issue is the establishment of a logistics system for transportation of products. The Ricoh Group, led by Ricoh Logistics System Co., Ltd., is striving to create a resource-recirculating logistics system, in which arterial and venous logistics are integrated. Successful examples in Japan will be introduced around the world as examples of global supply chain management (SCM). A similar system was established in France in April 2003. These efforts will be further developed in the Americas, China, and the Asia-Pacific region.

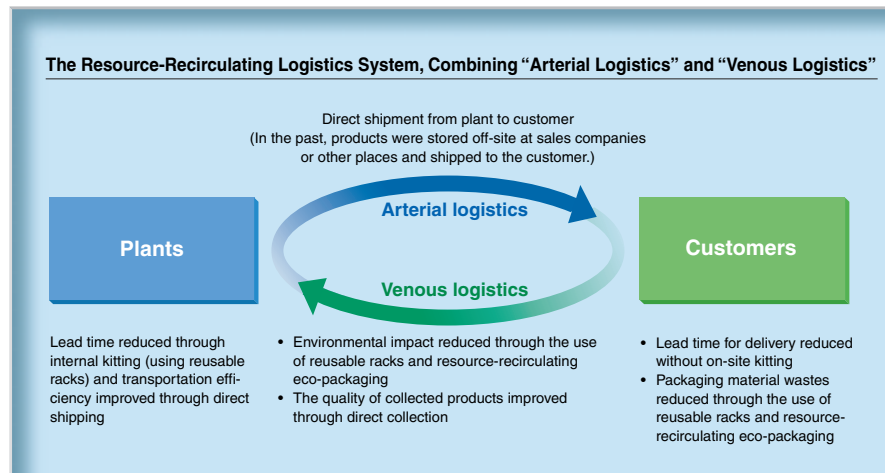
* See page 18 for “From ecosystem to ecosystem: A new concept.”

* See the environmental impact data for transportation bases (page 48 for CO₂ emissions and page 49 for resource recovery rates and other information).

Japan

Establishing a Resource-Recirculating Logistics System

Reflecting a shift from the traditional “cradle to grave” LCA concept, Ricoh Logistics System Co., Ltd. is working to create a resource-recirculating, “cradle to cradle” logistics system in which arterial and venous logistics are integrated. To reduce the environmental impact of product delivery, which predominates in arterial logistics, a direct delivery system from plants to customers is being set up. To make the recycling business more profitable, a nationwide system* of green centers (collection centers) must be established, as well as systems for direct delivery to customers and collection systems. Aiming to collect used products directly from customers, Ricoh Logistics obtained a permit to collect and transport industrial waste in 98 administrative districts around the country to improve the quality of the



resource-recirculating logistics system.

This system, as a new business model, received the Japan Institute of Logistics Systems’ Logistics Grand Prize for technology.

* See page 59.

Identifying and Reducing Environmental Impact

Ricoh Logistics System has obtained ISO14001 certification at a total of nine business sites including the Tokyo head office, as well as sites in Tohoku (Miyagi), Atsugi, and Osaka. Of the company’s 80 business sites in Japan, 46 are scheduled for certification by November 2003. Aiming to reduce the environmental impact from vehicle use, 30 out of 250 company vehicles were switched to natural gas. Further efforts include semi-annual training programs in economical driving and company-produced video education programs on eco-driving. The company is also making efforts to reduce waste, which has a significant environmental impact, in addition to fuel consumption. The company has achieved Zero-Waste-to-Landfill* at

five business sites as of the end of fiscal 2002. As a result of these proactive efforts in air pollution prevention, resource conservation, and recycling, Ricoh Logistics received the Logistics Environmental Award from the Japan Federation of Freight Industries.

* See page 49 for Zero-Waste-to-Landfill.

NOx and SOx Emissions Produced by Transportation of Ricoh Logistics Vehicles (Fiscal 2002)

Reviewed by BVQI (28)

NOx	SOx
4.1 (t)	0.4 (t)

Modal Shift

Aiming to reduce the environmental impact and cost of product transportation, Tohoku Ricoh Co., Ltd., a manufacturing subsidiary, entered into partnership with Japan Freight Railway Company to promote a modal shift from truck to railway transportation. The first step was to shift shipments to Sapporo, Osaka, and Kyushu, which together account for 7% of total product transportation, from truck to railway transportation. This cut CO₂ emis-

Costs and Effects of a Modal Shift from Trucks to Railways (Segment Environmental Accounting)

Costs			Effects			
			Economic benefits		Effect on environmental conservation	
Item	Main cost	Amount	Reduction	Amount	Reduction	Amount
Business area cost	Investment cost	0 yen	Transportation cost	¥57.4 million	CO ₂ emission	117 (t)

* Effects are calculated for the period starting from October 2001. There was no initial investment.

sions for these shipments by 85% and transportation costs by 18%, as well reducing lead times, by making use of a direct delivery system from plants. In Tokyo, however, which accounts for 93% of all product transportation, the modal shift to railway transportation may raise costs. However, by sharing 30-foot containers with other companies from April 2002, it is estimated that CO₂ emissions will be reduced by 70% and transportation costs cut by 9%. To further encourage use of railway transportation and to promote Japan Freight Railway's green logistics business, Tohoku Ricoh is publicizing improvements, as well as soliciting comments and proposals from relevant parties.

Improvement of Packaging for Copiers and Other Equipment

The Ricoh Group has developed reusable packaging materials for copiers and other products, including resource-recirculating eco-packaging for copiers made of re-



Resource-recirculating eco-packaging is available for eight models of copiers.



Reusable racks enable products to be delivered with the optional devices attached.



New-type mini reusable racks

cycled plastic, and pipe-framed reusable racks for printers. At present, 7,500 sets of resource-recirculating eco-packaging are used for eight copier models. New mini reusable racks are also on the market. At the end of fiscal 2002, more than 70% of the products manufactured at Gotemba Plant, which is a major copier manufacturing plant, were shipped in resource-recirculating eco-packaging. Using such packaging materials and bringing the waste produced at the customers' offices back for recycling help cut waste at the customer end to zero.

International

Improvement of Packaging for Digital Cameras

In order to reduce the environmental impact of digital cameras in transportation, a review was conducted to reduce packaging and enclosures including manuals. Previously, 16 enclosures, including five manuals, were included in a single package. By creating simple, user-friendly manuals the number of enclosures was cut to four, including one manual and one CD-ROM. For products shipped to Europe, where a variety of languages are spoken, a new packaging method was developed whereby only English and German manuals are packed at the Ricoh Group production sites in China. Enclosures in seven other European languages are packed locally. The Caplio RR30, marketed in September 2002, has a packaging volume of 1,978cm³, a significant reduction from the 5,830cm³ of the previous model, the Caplio RR10. The same concept was applied to the Caplio 300G/G3/G3 Model M/G3 Model S.



Packaging of the Caplio RR30, a new product (right), and packaging of the Caplio R10, an earlier product (left)

Europe

The Netherlands: European Service Parts Center

The European Service Parts Center (ESPC) stores and distributes the parts for countries in Europe, the Middle East, and Africa. In its efforts to improve efficiency and customer satisfaction, ESPC provides overnight deliveries to England, Germany, Italy, Benelux countries and France. To reduce the environmental impact of the upstream and downstream supply chain, ESPC asks parts suppliers to reduce their use of packaging materials, such as plastic bags, used in shipping goods. As well as using duplex printed delivery slips for outbound shipments.



ESPC shipment and packaging line

Contributing to reducing the environmental impact that affects the whole world in cooperation with customers

In order to reduce the environmental impact to society as a whole, and to establish a sustainable society, it is vital to form green partnerships with customers that allow them choose products and services with a smaller environmental impact. The Ricoh Group provides a green solution system as well as products that have less environmental impact in areas such as Japan, North America, and the E.U., which show a growing trend toward green purchasing. The Ricoh Group is also working to promote customers' environmental awareness in order to encourage them to select products that have less environmental impact. In other regions, the Ricoh Group strives to improve the awareness of environmental conservation among sales representatives and maintenance service personnel by obtaining the ISO14001 certification at sales and service companies, and providing personnel opportunities to promote environmental awareness among customers. The Group strives to offer customers products that deliver superior price and performance, allowing them to reduce the environmental impact of their purchases without having to make a conscious decision to do so.

* See the environmental impact data of the Ricoh Group's sales and service companies (page 48 for CO₂ emissions).

Japan

Using Offices as Showrooms

In December 2001, the Ricoh Group obtained ISO14001 certification at 410 business sites of 49 sales companies. Mie Ricoh Co., Ltd., Aichi Ricoh Co., Ltd., and Kanagawa Ricoh Co., Ltd. achieved computerization of their offices, which are also

used as showrooms. Customers are invited to see an example of a paperless office in actual operation, as well as experience simulated cost reductions that result from computerization. In October 2002, Ricoh's Major Accounts Marketing Division also opened a showroom to demonstrate its environmental conservation activities to visitors and its efforts to establish information security and support the creation of intellectual property.



Knowledge Live Plaza: An evolving office (Major Accounts Marketing Division)

Green Solution for Offices

In addition to manufacturing products with user-friendly, energy-saving technologies, as well as technologies for duplex copying and document computerization,* the Ricoh Group promotes green solutions to assist customers in their environmental management efforts. These solutions include reducing environmental impact and costs through energy efficiency and computerization, and assisting customers with ISO 14001 certification by sharing Ricoh's environmental management know-how.

*See page 38.

Resource-Recirculating Office Paper Recycling Service

NBS Ricoh Co., Ltd., which sells primarily printer paper, launched a resource-recirculating recycling service for used office paper. NBS collects used paper at customers' offices, recycles it, and returns it to the same customers' offices for reuse.

The company has already won a number of customers and is continuously striving to establish a resource-recirculating society in the wider community by working in partnership with local companies, governments, and NGOs.

Promoting Sales of Recycled Paper and FSC-Certified Paper

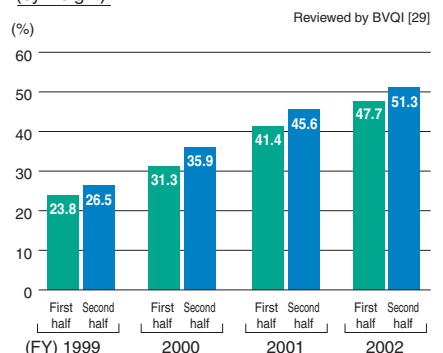
To contribute to the creation of a resource-recirculating society, the Ricoh Group included raising its paper recycling rate in its environmental action plan and succeeded in raising its recycling rate significantly in fiscal 2002. NBS Ricoh, which mainly sells printer paper, obtained Chain-of-Custody (CoC)¹ certification for distribution and marketing of FSC-certified paper², and began marketing this paper in August 2002.

1. Chain-of-Custody (CoC) certification guarantees that products are controlled to prevent foreign materials from being mixed with certified materials at every step in the production process from manufacturing to processing to distribution.
2. Paper containing pulp from forests certified by the Forest Stewardship Council (FSC)
 - 1) Certified pulp comprises at least 17.5% of all pulp materials by weight.
 - 2) Certified pulp comprises at least 30% of virgin pulp by weight.FSC-certified forests must be properly managed in terms of ecosystem conservation to ensure social benefits as well as economic sustainability.



Environmental conservation staff of NBS Ricoh

Recycled Pulp as a Share of Marketed Paper (by weight)



Green Solution for Production Lines

Ricoh Elemex Corporation, a clock, watch, and water and gas meter manufacturer and distributor, has developed systems to compress swarf produced in metal parts processing and to collect machinery lubricants. These systems are being marketed to companies. Ricoh Elemex has also developed a separator for water-soluble oils.

Electric Vehicles

Ricoh Technosystems Co., Ltd., a product maintenance company, encourages drivers of company vehicles to switch off their engines while stopped, aiming to reduce gasoline consumption. And in fiscal 2002, 24 company vehicles were replaced by electric vehicles.



An electric vehicle used by Ricoh Technosystems

Zero-Waste-to-Landfill at Non-Manufacturing Sites

Ricoh achieved Zero-Waste-to-Landfill at six business sites, including its Aoyama Office. Among Ricoh Group companies in Japan, Ricoh Technosystems, a sales and service company, and Ricoh Logistics System Co., Ltd., a logistics company, are leading this effort and several business sites have achieved zero waste. Ricoh Technosystems works to raise community awareness of environmental conservation by participating in the local zero-waste forum.



A Ricoh Technosystems representative giving a speech at the local zero-waste forum

The Americas

United States: The Establishment of Green Partnerships

For society to have less environmental impact, it is necessary to establish green partnerships by providing sales and maintenance personnel of Ricoh Group companies and sales companies with awareness promotion activities. In fiscal 2002, Ricoh Corporation, the regional sales headquarters for the Americas, opened a large environmental conservation section in its showroom, Ricoh's Technology Portal, on Fifth Avenue in New York City. In addition, the company held a seminar for its government clients and large-business customers and participated in such exhibitions as International CES.* Ricoh Corporation made further efforts by providing environmental training to Ricoh Group companies and sales companies at four sales service personnel training centers around the United States, engaging in awareness promotion activities at service personnel meetings throughout the country and organizing recycling center visits.

* See page 70.



Environmental station at the Technology Portal
(Fifth Avenue, New York City)

Uruguay: Establishment of the Environmental Management System

Ricoh Latin America, Inc. (RLA), a sales company, promotes establishment of the environmental management system within its business area. In November 2002, Ricoh South America Distribution Center S.A. worked with RLA to obtain ISO 14001 certification.

Europe

Improving the Environmental Database

In fiscal 2002, Ricoh Europe improved its environmental database, which now includes information on the environmental performance of products, packaging materials for supplies, and the MSDS* of toners. The database receives approximately 600–800 inquiries from Ricoh Group sales companies throughout Europe. 92–95% of these inquiries can probably be solved by searching the database. The MSDS information on copiers (supplies) is also available on the company's own Web site.

* Material Safety Data Sheet

New chemical Substance Management System for Supplies

In Europe, permits for new materials used in products must be acquired before the supply (product) is launched. In fiscal 2002, Ricoh Europe began setting up a new chemical substance management system that will evaluate the safety of new supply (products) and their compliance with related laws and regulations.

Europe: Zero-Waste-to-Landfill Promoting Program (Waste Management System) at Sales Companies

Ricoh Europe B.V., the regional sales headquarters for Europe, is working to reduce waste through such means as encouraging reuse of copy paper, monitoring the type and quantity of waste produced by division, and establishing a waste management system in cooperation with recycling companies. In addition, the company aims at reducing costs by sorting waste and achieving level 2.*

* See page 49 for the definition of Zero-Waste-to-Landfill.

Austria: Ricoh Austria

Ricoh Austria GmbH, a sales and service company in Austria, develops its activities based on the concept to connect environmental conservation with business development. The company makes earnest efforts to promote public awareness that Ricoh is leading the world in environmental conservation activities. In January 2002, it started the “minus 10% CO₂ action” to reduce gasoline consumption by 60 vehicles owned by the company. Lecturers were invited from Austria Drivers Association and the car industry for the seminars. Furthermore, an energy-saving driving competition based on the mileage was held every three months for the employees. As a result, 10% reduction in energy consumption was achieved (in other words, fuel efficiency improved by 10%) in the January-March quarter in 2003. These achievements brought Ricoh Austria the Vienna Eco Business Plan award organized by Vienna Province.



The president and environmental conservation staff of Ricoh Austria

The Netherlands: Ricoh Nederland

Hoping to get as many people as possible to understand the Ricoh Group's attitude toward environmental conservation, Ricoh Nederland B.V., a sales and service company in the Netherlands, supports Vereniging Natuurmonumenten, an NPO that promotes ecosystem conservation in the Netherlands. The company prepared a brochure stating the Ricoh Group's philosophy of environmental conservation, its activities, and the environmental performance of its products to promote awareness among customers and sales companies for green partnerships. And Ricoh Nederland is making efforts to reduce its own environmental impact by taking advantage

of such opportunities as the eco-driving competition for sales representatives and maintenance service personnel.



Environmental conservation staff of Ricoh Nederland

Belgium: Brussels and Ricoh Europe (Belgium Branch)

The Brussels City Authority, which is currently preparing green procurement guidelines, conducted a trial environmental screening for copiers it plans to use. Ricoh Europe B.V. (Belgium Branch), a sales and service company in Belgium, made a successful bid for this project and is working with the city to draw up guidelines on energy- and space-saving and reduced paper consumption by making use of the document-reading and storage functions enabled by Ricoh's new product technologies.



Environmental conservation staff of Ricoh Europe (Belgium Branch)

Italy: Poste Italiane, NGR Italia, and Ricoh Italia

To get an edge over the competition, NRG Italia S.p.A., the Ricoh Group's sales and service company, carries out sales promotion activities in which it proposes to build an outstanding environment. The company, working with Ricoh Italia S.p.A., has made a successful bid for Poste Italiane, S.p.A. to establish a collection and recycling system for toner cartridges. Toner cartridges are collected, cleaned, and sent to Ricoh Industrie France S.A. and Ricoh UK Products Ltd., the Group's production



The President of NRG Italia and environmental conservation staff displaying the Ecohitech plaque

sites, to be recycled. Such efforts were recognized with the Ecohitech Award, which is sponsored by the Ministry of the Environment. The award ceremony was aired on television.

The Asia-Pacific Region

Thailand: Ricoh Thailand

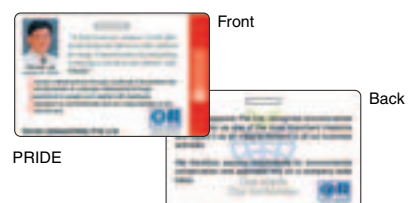
Ricoh Thailand Ltd., a sales company in Thailand, markets used digital copiers. The products have a high reputation among customers thanks to the user-friendliness and reasonable price of the machines. Customers, without even knowing it, can contribute to environmental conservation by using these copiers.



The president and environmental conservation staff of Ricoh Thailand

Singapore: Ricoh Singapore

Ricoh Singapore Pte. Ltd., a sales company, promotes employee awareness of environmental conservation by using PRIDE cards and posters in the office, while striving to reduce costs through energy conservation activities and duplex copying.



Recycling

The Ricoh Group aims at securing profitability in the global recycling business.

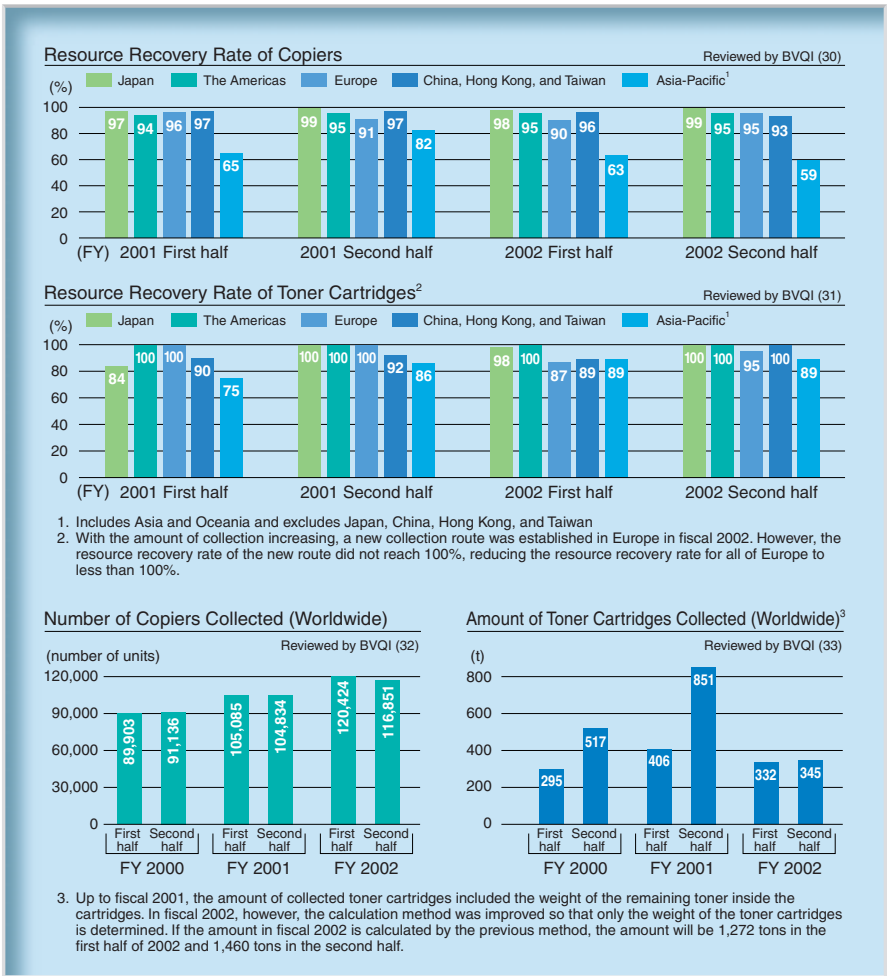
The Ricoh Group aims at securing profitability* in the recycling business in Japan by the end of fiscal 2004. The Group plans to do the same in the Americas, Europe, China, and the Asia-Pacific region. Efforts made in Japan include improving the quality and reducing the costs of collection, recovery, and recycling by making use of a recycling information sharing system and a nationwide recycling system, as well as by expanding sales of reconditioned machines. For regions other than Japan, it was decided that used products will be collected, re-covered, and sold within the same region. Efforts are being focused on establishing the recycling information sharing system, collecting a significant volume of recyclable resources, and expanding recycling sites. The recycling business conducted by sales companies in Europe has already turned profitable.

* Defined as a surplus in operating income, excluding social benefit.
* See page 16 for "Reconditioned digital copiers."

International

Global Development of the Recycling Information Sharing System

In the recycling business, used products are regarded as raw materials. It is therefore very important to collect a significant volume of recyclable resources as well as improve the quality of collection. To promote efficient collection, recovery, and recycling, the Ricoh Group plans to promote global development of the recycling information sharing system¹ by establishing and operating a worldwide infrastructure for recovered machines. The recycling information sharing system was



Environmental Conservation Costs and Effects in the Recycling Business in 2002 (Segment Environmental Accounting)

Costs		Effects			
Item of cost	Amount	Economic effects		Effects on environmental conservation	
		Item	Reduced Amount		
Product recycle cost	¥918 million	Sales amount	¥1,421 million	Resources recovered 26,422 t	Final disposal 37 t
Collection/resource recovery cost	¥2,772 million			A 498-t increase from the previous year	A 313-t decrease from the previous year
Total cost	¥3,690 million	Social effect	¥2,114 million		

* Data is for Japan only. The figure for "Social effect" is the amount that customers saved on the cost of waste disposal.

established as a part of the environmental management information system² to help users understand information on environmental impact and costs. Recovery and recycling centers can share information on the amount and rate of used products collected. Accurate information can be obtained simply by entering the model code of the product to be collected from customers. Collected information on costs is also useful for business management and environmental accounting. Aiming to streamline the PDCA cycle to improve

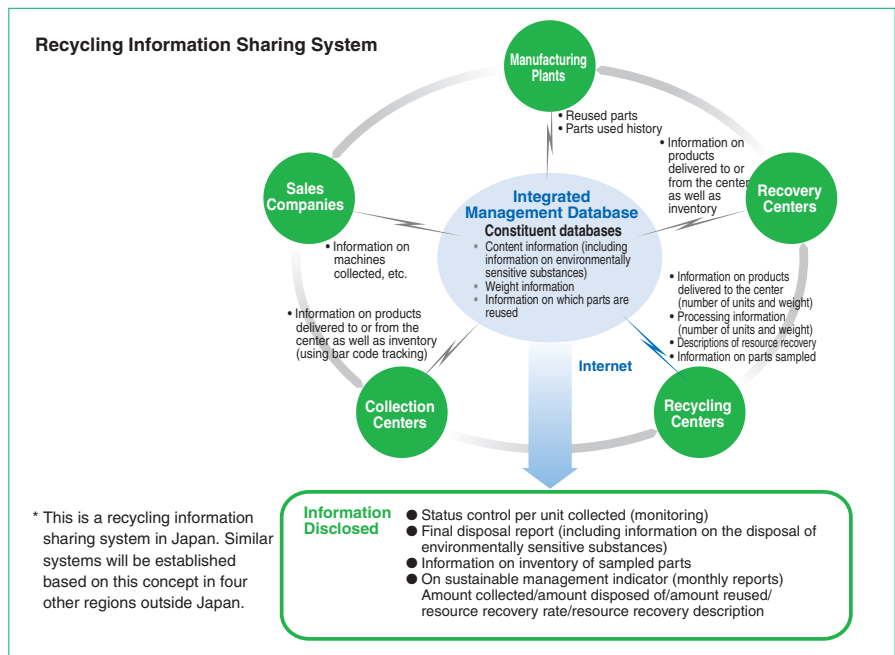
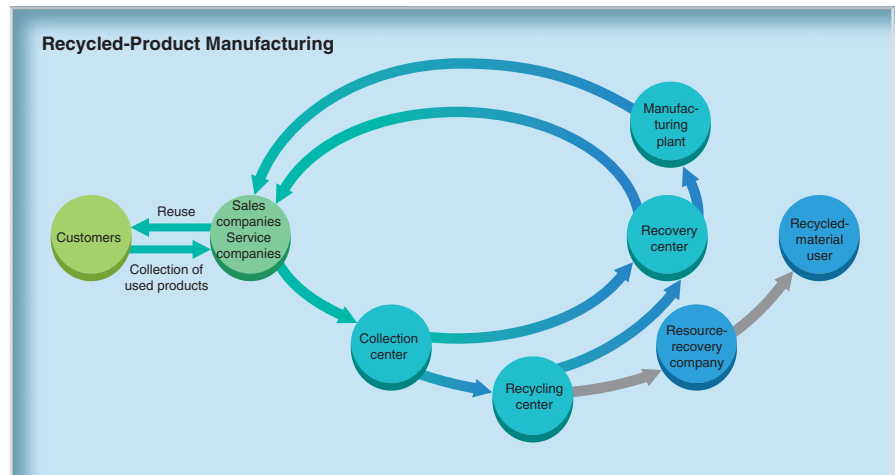
business activities in relevant regions and for the Ricoh Group as a whole, the recycling information sharing systems began operation in the Americas, Europe, and the Asia-Pacific region in fiscal 2003. These systems will identify monthly collection and recycling information as well as the environmental impact produced by the collection, recovery, and recycling activities of the Ricoh Group as a whole.

1. See page 59.
2. See page 25.

Japan

In Japan, a nationwide system for collection, recovery, and recycling of used products was put in place in fiscal 2001. As a result, Ricoh collected a significant volume of recyclable resources and achieved a high level of resource recovery for used copiers and toner cartridges. Development and mass production of reconditioned digital copiers* began in fiscal 2001 and the number of models available was expanded in fiscal 2002. Prior to that, in 1998, Ricoh began full-scale collection of used toner cartridges. Depending on their condition, recovered cartridges are either reconditioned and resold, or disassembled, sorted, cleaned, and inspected for reusable parts. Some cartridges are recycled for raw materials. In addition, parts replaced for maintenance are also collected for recovery and recycling. Ricoh continues its efforts to collect a significant volume of recyclable resources and improve the quality of collected parts so as to provide customers with more reconditioned machines and recycled toner cartridges.

*See page 16.



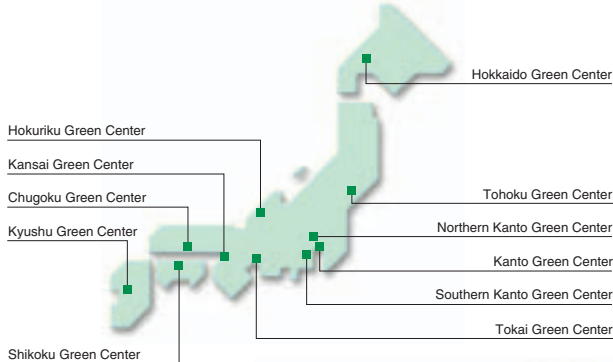
Nationwide Recycling System

A well-run nationwide recycling system is needed to efficiently collect and recycle Ricoh products, which are used throughout the country. Ricoh has begun collaborating with green centers (collection centers), recovery and recycling centers, and plastic parts manufacturers to establish a nationwide network that will facilitate more economically efficient recovery and recycling of used machines, toner cartridges, and parts collected from around Japan.

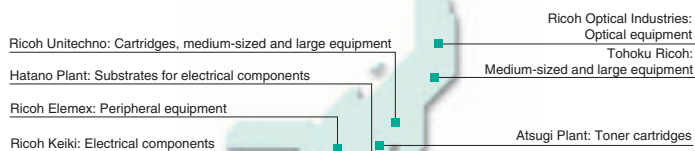
● Green Centers (Collection Centers)

Based on customer collection order information, personnel are dispatched from the nearest green center to pick up products and/or toner cartridges from the customer's office. The products and toner cartridges collected at 80 green centers throughout the country are sent to 11 major green centers, and then sent to recovery centers or recycling centers according to selection standards.

● Major Green Centers (Collection Centers) in Japan



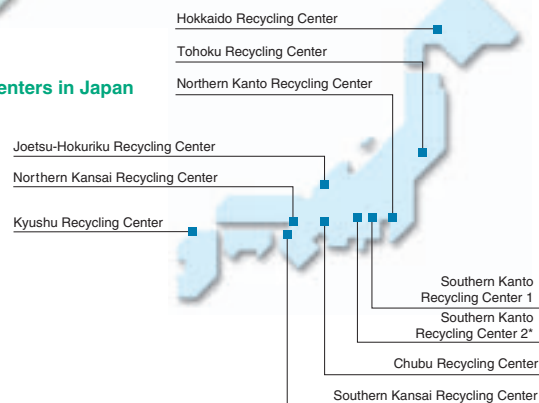
● Recovery Centers in Japan and Products Handled



● Recycling Centers in Japan



Kyushu Recycling Center



* Only supplies

● Recovery Centers

At recovery centers, used machines and toner cartridges are disassembled, cleaned, reassembled (with some parts being replaced), and inspected before being shipped as recovered products. In addition, centers sort reusable parts. Ricoh Group companies and plants that have manufacturing lines for targeted products serve as recovery centers.

● Recycling Centers

Used products and toner cartridges forwarded to recycling centers are disassembled, and the parts and units that can be reused or recycled are sorted out. Those that can be reused are sent to recovery centers to be used in manufacturing new or recycled products. Aiming to reduce the final disposal amount, three recycling centers achieved a 100% resource recovery rate. Recycling centers in Japan also achieved a 90% material recycling rate (except for energy recovery) for machine bodies.

Recycling of Replaced Parts

Ricoh Technosystems Co., Ltd. collects all the replaced parts and waste produced by equipment maintenance at customers' offices. The replaced parts are collected and recycled through the Ricoh Group's nationwide system. The company thus promotes the Zero-Waste-to-Landfill* activities, considering the customer's office, as well as company sites, as a part of its responsibility.

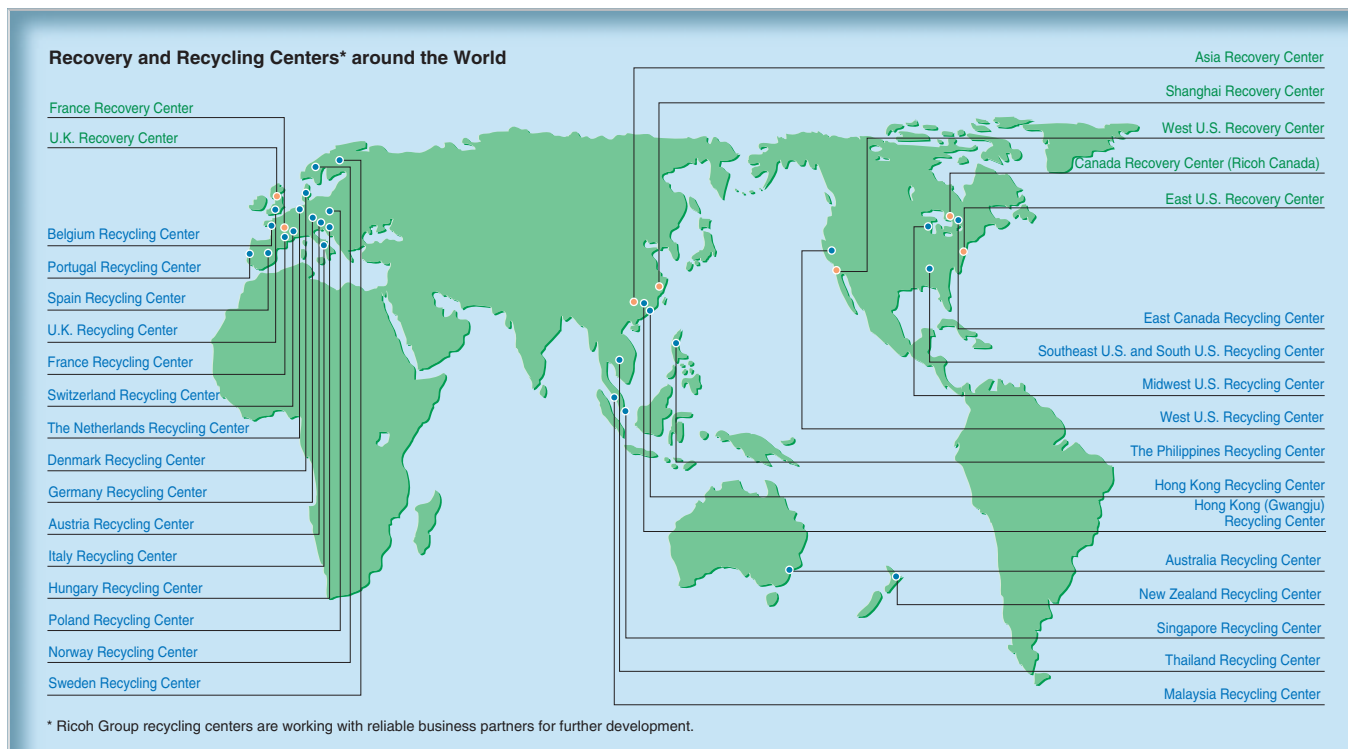
* See page 49 for the definition of Zero-Waste-to-Landfill.

The Americas

The manufacturing plants of Ricoh Electronics, Inc., (REI) in California and Mexico are used as recovery centers for toner cartridges and other products. The collecting of toner cartridges for recovery began in 1995. REI conducted joint research into recovery methods and quality assurance with Ricoh Corporation, a regional sales headquarters, to promote more eco-friendly recycling activities that focus on the reuse of parts. Furthermore, REI engages in activities that improve employee awareness of resource collection and recovery rates.



Toner cartridge recovery line at REI



Europe

In order to collect used toner cartridges efficiently on a Pan-European basis, RICOH Europe B.V., the European Headquarters of RICOH Group sales companies has entered into a partnership with Spring*—a cross border mail joint venture between TPG, Royal Mail Group and Singapore Post. In the meantime, RICOH Group sales companies are also keeping their efforts to collect used toner cartridges from their customers locally. The recyclable toner cartridges collected by Spring and local sales companies are sent to Ricoh UK Products Ltd. and Ricoh Industrie France S.A., where they are basically recycled into new products. To cope with the Directive of the European Parliament and the Directive of the Council on Waste Electrical and Electronic Equipment (WEEE), which came into effect on February 13, 2003, the two companies started recycling printed circuit boards and photo-sensitive materials, both of which are used in copiers and other machines. A number of sales companies are engaged in the recovery of products at their service/ maintenance divisions.

* Spring is a joint venture between the TNT Post Group (TPG), Royal Mail Group plc, and Singapore Post.



Product recovery line at Ricoh UK Products



Toner cartridge recovery line at Ricoh Industrie France

The Netherlands: NRG Benelux

In 1987, NRG Benelux B.V., a sales company, began the collection, recovery, and marketing of used products by making use of the expertise of its service/maintenance division. Working in close cooperation with its sales division, NRG Benelux continued to expand its operation, selling several thousand recovered products in fiscal 2002. In addition to the low level of environmental impact, the attractive prices of the products contributed to the company's favorable results. For this, the company won the Ricoh Sustainable Development Award.*

* See page 15.



A product recovery line and recovered products

UK: Keymood UK and NRG Group

NRG Group Headquarters together with the NRG Group UK Ltd sales company, are working with Keymood UK Ltd. to promote the sorting, recycling and disposal of used office equipment. As of January 2003, Keymood recycled 86% (mass ratio) of the products collected, to comply with the forthcoming regulations pursuant to the requirements in Waste Electronic and Electrical Equipment (WEEE) .

China

In China, Ricoh Asia Industry (Shenzhen) Ltd. (RAI), a manufacturing plant, also works as a recovery plant for toner cartridges. To improve economic efficiency in its business operations, RAI is making efforts to collect a significant volume of recyclable resources. Ricoh Electronic Technology Ltd. (RET), a Shanghai service company, has also begun product recovery operations.

China: Asia-Pacific Enterprise (Japan) Co., Ltd.

Working with Asia-Pacific Enterprise (Japan) Co., Ltd. recycling and recovery of toner cartridges collected in Hong Kong has begun at the Asia-Pacific Enterprise (Japan) Co., Ltd. plant in Guangzhou. A new facility was constructed that stresses health and safety and prevents explosions caused by scattered toner dust. These efforts helped the plant achieve a 100% resource recovery rate: 99.7% in materials recycling and 0.3% in energy recovery.



Asia-Pacific Enterprise (Japan) Guangzhou plant

Asia-Pacific Region

Sales companies in the Asia-Pacific region used brochures to ask customers for their cooperation in collecting a significant volume of used toner cartridges. The parts recovery and reuse rate can be improved by enhancing the quality of collected parts.

Australia: Ricoh Australia

Ricoh Australia Pty. Ltd. provides collection boxes at its customers' offices to boost the recovery rate of toner cartridges and bottles. The company formed a partnership with Commonwealth Bank, one of its major clients, to collect cartridges and bottles from all the bank's branches across Australia. This also contributes to improving the bank's image.

Australia: Close the Loop Ltd. and Ricoh Australia

Close the Loop Ltd., in cooperation with Ricoh Australia, a sales company, developed the Green Machine, which crushes collected toner cartridges and bottles and sorts the materials for recycling. The Green Machine began operating at Close the Loop's Melbourne plant in July 2002. The machine can crush and sort at least 400 toner cartridges an hour. The sorted plastic is used in various products, including rulers, pliers, and frames.

Singapore: Ricoh Singapore

Ricoh Singapore Pte. Ltd., a sales company, started a gift-giving campaign for customers who cooperate in the collection of toner cartridges. Collected toner cartridges are sent to Citiraya Industries Pte. Ltd. for recycling.



Environmental conservation staff of Ricoh Singapore

Thailand: Ricoh Thailand

Ricoh Thailand Ltd., a sales company, carries out a campaign in which the company asks its customers to send back their used toner cartridges. When customers return cartridges they receive coupons that can be exchanged for prizes. As a result, by the end of fiscal 2002, approximately 2,000 facsimile toner cartridges were collected and reused at the China plant. In addition, Ricoh Thailand restores Ricoh machines at its service division and sends those that cannot be repaired to Good Morning Inc. to be disassembled and sorted into such raw materials as aluminum, iron, and plastic to be recycled by subcontractors. Good Morning Co., Ltd. sends Ricoh Thailand a report noting the quantity of materials obtained after sorting.



Disassembling and sorting at Good Morning Co., Ltd.

Social Contribution of Environmental Conservation

Contributing to a sustainable society around the world

To establish the sustainable society, it is essential to establish partnerships with companies, governments, and citizen organizations, aiming at preserving the global environment and creating a society that is at ease with itself. The Ricoh Group, based on the Sprit of Three Loves¹ (love your neighbor, love your country, and love your work), as a business enterprise, endeavors to enthusiastically communicate with local governments and citizens the world over as well as to promote partnerships, through each employee's activities. From fiscal 2002, the Ricoh Group began setting targets for social contribution² in terms of environmental conservation, according to which the Ricoh Group's regional sales headquarters is responsible for environmental conservation activities. Ricoh established a system in which a social contribution reserve is created to sustain social contribution activities. With the approval of shareholders at their general meeting, the Ricoh reserves an amount equal to 1% (maximum 200 million yen) of its annual profit after dividends to fund its social contribution activities. In fiscal 2003, the reserve was used for a forest ecosystem conservation project and the Ichimura School of Nature.

1. See page 5.
2. See page 33.

International

Forest Ecosystem Conservation Project

We are now in an era of large-scale wildlife extinction. Among the approximately 4,620 species of mammals, 1,130 are approaching extinction. The increase in the number of endangered species must, at least in part, be attributable to a decrease in the size of their habitat. The world's wildlife forms a vital part of ecosystems around the globe, including forests, savannas, lakes and ponds, coral reefs, and

oceans. The destruction of the ecosystem inevitably leads to the destruction of the water systems, air, climate, soil, and other parts of the natural environment that humans depend on for life. Ricoh is developing forest ecosystem conservation projects that focus on forest ecosystems, which are especially blessed with a large variety of wildlife. Having started in fiscal 1999, projects are well underway at 11 sites in eight countries in fiscal 2002.



Restoration of satoyama (community forest) on Tama Hill, Tokyo

Activities Funded by the Ricoh Group's "Social Contribution Reserve"

Country	Project		NPO		
	Name	Purpose	Name	Description	Web site
Philippines	Restoration of forests in the Ecoregion 200 area	Conservation of forests where the Philippine Eagle can live	Conservation International	Using funds and human resources for the conservation of biodiversity (1,200 members in 32 countries)	http://www.conservation.org/xp/CIWEB/home
Malaysia	Conservation and restoration of forests in environmental hot spots	Establishment of forests where orangutans can migrate	WWF	The world's largest nature protection NPO makes diverse efforts to conserve biodiversity, from ecosystem conservation to the prevention of global warming.	http://www.wwf.or.jp/(World Wide Fund for Nature Japan) (Japanese only)
China	Restoration of forests in the Eco-region 200 area	Establishment of forests where pandas can live	WWF	Same as above	Same as above
Japan	Restoration of satoyama (community forests) in Tama hills, Tokyo	Conservation of forests where loaches and salamanders can live	Wild Bird Society of Japan	Conducting activities to protect wild birds and to conserve their habitats based on the idea that mankind must share the earth with wild birds	http://www.wbsj.org/(Japanese only)
Japan	Conservation of the Afan forest in Kurohime, Nagano	Establishment of forests where dormice can live	C.W. Nicol Afan Forest	Conducting research and study of the forest ecosystem as well as environmental conservation activities on the idea of establishing a forest where the mankind can live without harming the natural environment	http://www.afanomori.com/(Japanese only)
Japan	Conservation of the forest of Yanbaru in Okinawa	Conservation of forests where the Yanbaru kuina can live	Yanbaru Branch, Wild Bird Society of Japan	Established in 1992 to protect wild birds and other valuable creatures living in the forest of Yanbaru in the northern part of Okinawa Main Island	—

* The flag species of the area are listed under "purpose." The above projects strive to conserve the forest ecosystem in the areas as well as the flag species.

Activities Funded by the Ricoh Group's Expenses

Country	Project		NPO		
	Name	Purpose	Name	Description	Web site
Sri Lanka	Conservation and restoration of forests in world heritage areas	Conservation of forests where the Sri Lankan long-tailed fowl can live	Field Ornithology Group of Sri Lanka	Research of birds in Sri Lanka and domestic and international environmental conservation activities through the protection of wild birds	—
Brunei	Conservation of virgin mangrove forests	Conservation of virgin mangrove forests, which are rare and valuable worldwide	Ramsar Center Japan	Conducting activities to promote the ratification of the Ramsar Convention (on Wetlands) in Asia and the appropriate utilization of wetlands	http://homepage1.nifty.com/rcj/menu-english.htm
Bangladesh	Restoration of satoyama (community forests)	Education of children and creation of work for afforestation and raising seedlings	Bangladesh Poush	Providing environmental education, especially to children, and promoting afforestation activities	—
Malaysia	Restoration of river-head forests	Afforestation of riverheads to restore natural forests	OISCA	Promoting the independence of local communities and environmental conservation through rural development and greenery activities in the Asia-Pacific region	http://www.oisca.org/e/index.htm
Ghana	Restoration of the corridors of the cacao trees growing in the shades	Model project for promoting the development of the local cocoa industry while conserving natural forests	Conservation International	Using funds and human resources for the conservation of biodiversity (1,200 members in 32 countries)	http://www.conservation.org/xp/CIWEB/home

● Promotion of Activities through Partnerships

Forest conservation activities are almost impossible to carry out without the understanding and cooperation of local communities. With this mind, Ricoh is engaged in activities such as protection of virgin and natural forests, as well as management and conservation of satoyama (community forests) and thickets by forming partnerships with environmental NPOs, and by taking into careful consideration local communities where the projects are conducted. In fiscal 2002, Ricoh representatives visited projects in Malaysia and Sri Lanka, where they met officials from local governments and universities and local residents. Through these activities, local communities became more environmentally-aware, which greatly promotes social contribution. Local communities became more aware of the importance of the natural environment when they observed how determined Japanese companies are about conserving it. In Japan, descriptions of these activities are placed in magazine advertisements¹ and on Ricoh's ECO TODAY Web site² to encourage more people to pay attention to these activities and to become involved themselves.

1. See page 70.

2. http://www.ricoh.co.jp/ecology/ecotoday/index_h_eng.html



A visit to a project in Malaysia



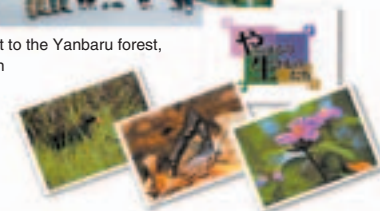
A follow-up visit to a project in Sri Lanka

● New Projects in Fiscal 2002

In July 2002, Ricoh worked with the Wild Bird Society of Japan, Yanbaru Branch to start a forest ecosystem conservation project in the Yanbaru forest in Okinawa. Ricoh supports related programs, including land purchases, for forest conservation, promotion of environmental conservation awareness, publication of brochures and postcards to raise such awareness, and arrangement of lodging for eco tours. At the Afan forest in Kurohime, Nagano, where a forest ecosystem conservation project was begun in fiscal 2001 with the cooperation of C.W. Nicol Afan Forest, the Company held a series of Ricoh Nature Seminars, in which children and their parents enjoy nature together. In the future, similar seminars are scheduled to be held at the satoyama (community forest) in Tama hill, Tokyo.



A visit to the Yanbaru forest, Japan



Yanbaru forest postcards



Ricoh Nature Seminars for children and their parents (at the Afan forest)

Japan

[Partnerships with Administrations, NPOs, and Local Communities]

Ricoh

Ricoh worked with the Keidanren Committee on Nature Conservation, which promotes protection of biodiversity, to draw up the Nature Conservation Declaration.

The Company also makes contributions to Kanagawa Prefecture (for establishment of headwater forests in Kanagawa), as well as NPOs, including the Nature Conservation Society of Japan¹, the Ecosystem Conservation Society—Japan², Green Earth Network³, OISCA, Oak Village, and the Bird Life Asia District Committee

1. <http://www.nacsj.or.jp/> (Japanese only)

2. <http://www.ecosys.or.jp/eco-japan/>

3. <http://www.member.nifty.ne.jp/gentree/> (Japanese only)

The Ricoh Group Production Sites

The Ricoh Group has achieved Zero-Waste-to-Landfill at all production sites throughout the country. This know-how is readily disclosed to relevant administrations and enterprises.

Number of People to Visit Major Plants (FY 2002) (people)

Ricoh Fukui Plant	Ricoh Numazu Plant	Ricoh Gotemba Plant	Ricoh Unitechno
1,617	2,223	2,304	2,020

Ricoh Fukui Plant

Fukui Plant employees pick up cans around the plant once a month. The plant works with the Sakai-cho community to clean up parks and stations in the neighborhood twice a year. Making use of the biotope within the plant site, nature seminars were held for children from kindergarten through junior high school, as well as weekend seminars for children and their parents. In fiscal 2002, 289 children in all attended the seminars. In addition, an environmental conservation employee at the plant joined the editorial team of the Fukui Prefecture Environmental Guidebook. The plant also asked the prefectural industrial waste disposal plant to open its facility to local children participating in a plant-sponsored, "eco tour" environmental seminar for children. These are just a few examples of our partnerships with local governments.



A nature seminar organized by Ricoh Fukui Plant

Ricoh Keiki

Ricoh Keiki Co., Ltd. strives to promote community awareness of environmental conservation, as well as to develop close ties with these communities. Examples include partnerships with Saga City and Saga University, which encouraged as many as 40 Ricoh Keiki employees to give speeches at the Saga City Environmental Forum and to participate in the hometown cleanup campaign jointly organized by Saga Prefecture and Saga City. In addition, three Ricoh Keiki employees were designated “environmental supporters” by Saga Prefecture, which asked them to give guidance on environmental conservation and global warming prevention measures to schools, companies, and community authorities. In August, the company held a seminar on environmental conservation to teach children the importance of the natural environment. At the seminar, the children raised stag beetles. Besides being fun, the seminar taught the children about ecology. Some of the young participants remarked, “The stag beetles must be happy if we save energy and protect nature.”



A seminar on environmental conservation and raising stag beetles

Ricoh Gotemba Plant

Local schoolchildren can observe wildlife at a biotope called “hometown forest” on the plant site. The plant, working with Gotemba City, is working to gradually expand the wildlife habitat.

Ricoh Elemex Corporation

Ricoh Elemex Corporation’s Ena Plant began hosting eco seminars in fiscal 2000. In fiscal 2002, Ricoh Elemex registered the learning delivery program conducted by Ena City, and held eco seminars at local government facilities and junior high schools. In September 2002, the company’s Okazaki Plant invited four groups of the local fifth-grade elementary school students to its fourth eco seminar. Employees regularly par-

ticipate in volunteer activities to preserve the Kitayama wetland in Okazaki City.



An eco seminar at Okazaki Plant

Ricoh Unitechno

Ricoh Unitechno Co., Ltd. began raising killifish in fiscal 2000, using industrial wastewater. The company shows the killifish to children as a part its plant tours, encouraging them to understand the value of living things. In fiscal 2002, 400 elementary and junior high school students visited the plant. The company also took an active part in efforts to protect the nearby Ohsone wetland biotope.

The Ichimura School of Nature (Sound Education of the Young)

The Ichimura School of Nature is an NPO that aims at helping children learn how to earn a living from mother earth through growing crops and other experiences. Children from the 4th grade (10 years old) of elementary school to the 2nd grade (14 years old) of junior high school, visit the school in separate groups of boys and girls, for two nights and three days every other weekend. The course consists of 18 units in total. March 2002 saw the opening of the Ichimura Kanto School of Nature, from which its first class of 30 students graduated. In March 2003, led by Coca-Cola West Japan Co., Ltd., a Ricoh San-ai Group company, the Ichimura Kyushu School of Nature opened in Saga Prefecture, where Kiyoshi Ichimura was born.

* The Ichimura School of Nature was inaugurated in fiscal 2001 as a project commemorating the 100th anniversary of the birth of Kiyoshi Ichimura, the founder of the Ricoh San-ai Group.
<http://www.szj.jp>



Rice harvesting (Ichimura Kanto School of Nature)

[Promoting Employee Awareness and Activities Conducted by Employees]

Nurturing Volunteer Leaders

For the purpose of resolving environmental issues, the Ricoh Group believes that it is important for employees to volunteer for both company-run and outside environmental conservation and social contribution activities. However, at present, in comparison to the United States or Europe, very few people in Japan participate in citizens’ groups or volunteer activities. To encourage employees to participate in such volunteer activities, it is important, among other things, that companies promote awareness among their employees. It is also effective to ask for assistance from environmental conservation NPOs, which are pioneers in environmental conservation, in order to conduct training programs that motivate employees and continually remind them to preserve nature. In June 1999, the Ricoh Group launched a leadership-training program for Ricoh employees to promote environmental conservation activities. In fiscal 2001, the program was expanded to include the Ricoh Group’s employees and retirees. By the end of fiscal 2002, as many as 196 employees and directors of Ricoh and the Ricoh Group became environmental volunteer leaders. The leadership-training program consists of Ricoh Nature Seminars and Ricoh Company Meetings for Environmental Volunteer Leaders, which also promote post-training activities. Following the training at nature seminars, each leader develops environmental volunteer activities in close cooperation with relevant divisions or with the local community.

● Ricoh Nature Seminars

Ricoh nature seminars aim at turning employees into environmental volunteer leaders by teaching them how to enjoy the natural environment and implement environmental conservation activities. Each seminar lasts for two days and is attended by approximately 15 participants. The seminars are usually held at The WBSJ Center for Wild Birds and Nature of the Globe (WING), of Wild Bird Society of Japan (WBSJ), an NPO. In fiscal 2002, an

introductory course at a Ricoh nature seminar was held at Ikeda Plant, Osaka. Intermediate courses are held for employees that have completed introductory courses, in order to nurture leaders who can provide children with opportunities to experience nature. In fiscal 2002, as many as 14 employees became environmental volunteer leaders. Also in fiscal 2002, Ricoh held a Forest Seminar to train leaders in forest ecosystem conservation. Twelve of the participants went on to become leaders.



The 12th Ricoh nature seminar (introductory course) (RicoH Ikeda Plant)



The 1st Ricoh Forest Seminar (Afan Forest)

● Ricoh Company Meetings for Environmental Volunteer Leaders

The aim of Ricoh Company Meetings for Environmental Volunteer Leaders is to update environmental volunteer leaders on each other's activities. The leaders report on the environmental volunteer activities that they organized, exchange information with each other, and learn how to improve the quality of their activities. Three Ricoh Company Meetings for Environmental Volunteer Leaders were held in fiscal 2002.



The 10th Ricoh Company Meeting for Environmental Volunteer Leaders (The biotope at Ricoh Gotemba Plant)

Environmental Volunteer Activities

In fiscal 2002, there were 32 activities and a total of 744 participants. One of the characteristics of recent activities is the increase in continuing activities.



Thicket conservation in satoyama (community forest) (Lake Shinsei, Hatano)

About once a month, volunteer leaders engage in such activities as taking care of thickets that shelter many wildlife species, going on nature walks, and growing mushrooms.



Cleaning around historic buildings at Saseragi Park

Volunteer leaders assess historic buildings and peripheral areas in the park in Yokohama for damages every two months and carry out repairs, if needed.



Cleaning around Ohori Park, Fukuoka

Volunteers from Ricoh Kyushu and other Ricoh Group companies and their families participated in the cleaning of areas in and around the park in Fukuoka City, collecting a large volume of garbage.



Cleaning up Zaimokuza Beach, Kamakura

Every year, volunteer leaders and their families and friends get together at the beach in Kamakura to clean up and enjoy building sand sculptures.



Conservation of riverhead forests (Yadoriki riverhead forests)

In cooperation with the riverhead forest conservation plan of Kanagawa Prefecture, volunteer leaders participate in such activities as conservation of riverhead forests, going on nature walks, and afforestation.



Participation in an environmental event (Tsurumi River)

Volunteer leaders participated in the River and Wind Festival organized by the Green, NPO, and Wind Group, a local environmental NPO. At the festival, they cleaned up the riverbed and taught children how to make bamboo flutes.



Climbing up and cleaning up Mt. Fuji

Volunteers from Hatano Plant climbed Mt. Fuji and cleaned up the mountaintop areas and trails.

* Mt. Fuji was not designated as a World Heritage site because it was littered with garbage.

The Americas

The United States and Mexico: Employee Volunteer Activities

Ricoh Electronics, Inc., (REI) a manufacturing company in the United States, and Ricoh Industrial Mexico, its subsidiary, established an employee environmental volunteer team called HOPE (Helping Others and Protecting Our Environment). The team's activities in fiscal 2002 included creek cleaning in California, road cleaning in Georgia, and reforestation in Mexico.



Creek cleaning in California



Road cleaning in Georgia



Reforestation (Toluca in Mexico)

Mexico: Forest Ecosystem Conservation Project

Ricoh Corporation, the regional sales headquarters for the Americas, and Ricoh Latin America, Inc., a Latin American sales company, work with WWF*-US, an NPO, in a project to preserve the forests, water resources, and the ecosystem of

Tarahumara in Mexico. Ricoh Corporation, the U.S. company, decided to support this project in Mexico because it believes it important for corporate entities to engage in social contribution activities in the places where they do business.

* World Wide Fund for Nature (WWF)

Canada: Contribution to Environmental Conservation in the Local Community

Ricoh Canada Inc. worked with Wilson's Business Solutions, an Ontario-based sales agency, to promote recycling of cans in Thunder Bay, Ontario. Cans collected from 300 bins throughout Thunder Bay were sent to a local recycling company and the funds generated from this effort were donated to a local charity. In July 2002, 26 Ricoh Canada employees participated in the Clean Air Commute, a competition sponsored jointly by the City of Toronto and the Environmental Research Office, taking cleaner modes of transportation to and from work for one week.

Costa Rica: Forest Ecosystem Conservation Project

Lanier de Costa Rica, S.A., a sales company, worked with an NPO on an reforestation project in Los Alpes. Employees as well as their families participated in this project. Lanier de Costa Rica also donated copiers to the NPO.

Europe

Green Activities with Green Funds

Ricoh Europe B.V., the regional sales headquarters for Europe, Middle East and Africa is developing "green activities" that reduce environmental impact and costs, as well as promote environmental conservation. The costs saved, or "green funds," are then used to pay for additional activities. In fiscal 2002, the company was engaged in energy conservation activities to reduce CO₂ emissions by approximately 275 tons, the equivalent of that absorbed by 469 m² of forest. The company also reduced costs by about ¥1.8 million by con-

serving energy and reducing paper use (compared to fiscal 2000). In March 2003, the company signed an agreement with the Woodland Trust, the UK's leading woodland conservation charity, to support UK woodland biodiversity for three years. Funds for future activities will be allocated from cost savings generated by environment impact reduction. The Woodland Trust, an NPO, was established in 1972 and now has over 1,100 sites in its care covering approximately 19,000 hectares.

* <http://www.woodland-trust.org.uk>

Belgium: CO₂ Emissions and Forest Conservation

Ricoh Europe B.V. (Belgium Branch), a sales company, put the "green activities with green funds" proposed by Ricoh Europe into practice and reduced the energy consumed by 91 company vehicles. Moreover, the company started the zero CO₂ emission plan to comprehensively reduce CO₂ emissions to zero through reforestation and other efforts with funds obtained from related activities. In addition to drawing up policies for environmental conservation and safe driving, the company worked toward reducing CO₂ emissions through such efforts as alleviating traffic congestion by introducing flex-time and improving the company's vehicle dispatch control system.

UK: Forest Ecosystem Conservation Project

NRG Group PLC, based in London, a regional sales headquarters that handles the Nashuatec, RexRotary, and Gestetner brands, supports the commercial marketing activities of NRG Group companies. The company has engaged in the activities in partnership with Future Forests*, a U.K. environmental protection organization that makes investments in forest and environmental conservation projects around the world. Future Forests publishes an easy-to-understand conversion of CO₂ emissions to the number of trees that needed to be planted in order to remove the emissions. For example, one tree is needed to absorb



Future Forests members and environmental conservation staff of NRG Group PLC and Ricoh Europe

the amount of CO₂ emitted by one person for one year, and it takes two trees to absorb the amount of CO₂ emitted by energy required by one person for office heating, lighting, and PC operation for one year. In December 2002, NRG Group PLC decided to support Future Forests' reforestation efforts, asking all employees to donate £10 per tree planted. The employees paid for the planting of 24 trees, each dedicated to a loved one, and with the company matching that number a total of 48 trees have been planted.

* <http://www.futureforests.com>

China

Shenzhen: Tree Planting

On World Environment Day, June 5, 2002, 26 employees of Ricoh Asia Industry (Shenzhen) Ltd. planted 18 trees as a part of an effort to improve the environment and the appearance of a seaside park in Shenzhen. On March 11, 2003, employees also participated in company tree-planting activities commemorating China's Planting Day (March 12).



Planting trees on World Environment Day

The Asia-Pacific Region

Australia: Supporting an Environmental Education Program for Children

As a part of its social responsibility project, Ricoh Australia Pty. Ltd. supports Earth Keeper™, an environmental education program conducted by Warrimoo Public School in a suburb of Sydney. The program is for five- and six-year-olds and designed to teach them about ecosystems and environmental issues in Australia. The ribbon-cutting ceremony for the four classrooms used by the program was held in March. Ricoh Australia donated A\$10,000 to buy saplings, finance text printing, and purchase digital cameras to record the children's activities.



An opening ceremony at Warrimoo Public School

New Zealand: Employee Volunteer Activities

Ricoh New Zealand Ltd., a sales company, carried out a forest trail maintenance project in Waitakea under the instruction of forest rangers over two weekends, a total of four days, in October and November. Signposts were repaired and narrow, muddy roads were widened and covered with gravel for hikers. The company is planning to become further involved with reforestation, among other activities. It was also



The volunteer group of Ricoh New Zealand

decided to donate money to install decks and stairs for the trails.

Hong Kong: Supporting Forest Restoration

Since 2001, Ricoh Hong Kong Ltd. has supported the restoration of a forest in Sai Kung, Hong Kong, that was destroyed in a fire. Also, the company participates in an afforestation project in which 10,000 trees will be planted over three years until fiscal 2003.

Thailand: Protection of Elephants

In Thailand, elephants—the national symbol—are decreasing in number due to the destruction of the forests where they eat and live. Ricoh Thailand is deeply concerned about forest conservation, and has pledged its support to the Thailand Elephant Conservation Center, which is developing activities in Lampang, in northern Thailand, by donating copiers, printers and other economic assistance.



Elephants in Lampang, in northern Thailand

Thailand: Employee Volunteer Activities

The central Thailand region was struck by a flood in September 2002. Ricoh Thailand employees donated food and clothing to the flood victims.



Donations to flood victims

Environmental Communication

Making earnest efforts to disclose information on the Ricoh Group's goals

The Ricoh Group, in partnership with customers, client companies, and other business partners, aims to implement environmental management systems. However, this is not sufficient to attain a sustainable society. The Ricoh Group strives to contribute to the establishment of such a society by disclosing information useful to a variety of stakeholders, including know-how obtained from its own activities throughout the world. Making earnest efforts at information disclosure, the Ricoh Group promotes communication with the stakeholders to improve its business activities and its methods of information disclosure.

Stakeholders and Information Disclosure Measures

Items to be Disclosed = ●	Environmental Reports	Web Sites	Environmental Advertisements	Environmental Lectures	Exhibitions
Customers	●	●	●	●	●
Communities	●	●	●	●	●
Clients	●	●	●	●	●
Shareholders and investors	●	●	●	●	●
Evaluation organizations	●	●	●	●	●
Environmental specialists	●	●	●	●	●
Persons in charge of environmental issues in companies	●	●	●	●	●
Administrations	●	●	●	●	●
NPOs	●	●	●	●	●
Students	●	●	●	●	●
Employees	●	●	●	●	●

Sustainability Reports

The Ricoh Group's environmental report has been issued annually since its first publication in April 1998, which disclosed fiscal 1996 data. Starting with the fiscal 2002 edition, published in July 2002 under the new name, "sustainability report," the Ricoh Group has presented concepts and performance reports on its environmental management systems. The fiscal 2003 Japanese edition was published in June.

Number of Copies Issued

	Language	Date of Issue	No. of Copies	No. of Pages
Ricoch Group Environmental Report 1998	Japanese	Jan. 1999	26,200	30
	English	Jan. 1999	500	
Ricoch Group Environmental Report 1999	Japanese	Sept. 1999	51,300	32
	English	Sept. 1999	8,375	
Ricoch Group Environmental Report 2000	Japanese	Sept. 2000	45,950	60
	English	Dec. 2000	6,800	
Ricoch Group Sustainability Report 2001	Japanese	Sept. 2001	25,950	74
	English	Dec. 2001	7,000	
Ricoch Group Sustainability Report 2002	Japanese	Jul. 2002	18,850 (As of April 30, 2003)	84
	English	Sept. 2002	6,000	

Interactive Communication

To improve information disclosure, the Ricoh Group worked with Seiko Epson Corp. to organize a meeting for reading environmental reports in December 2002. The purpose of the meeting was to share information with a variety of people. The Ricoh Group also exchanged opinions with the Valdez Society, a citizens' group working in partnership with citizens and businesses for environmental conservation, and with Sustainable Asset Management (SAM), a Swiss organization that conducts ratings based on the Dow Jones Sustainability Indexes (DJSI)*.

* See page 71.



A meeting for reading environmental reports
(at General Press Corporation)

Environmental Reports Issued by Business Sites

Several Ricoh Group production sites, namely Ricoh Fukui Plant, Ricoh Unitech Co., Ltd., Tohoku Ricoh Co., Ltd., Ricoh Atsugi Plant, and Ricoh Industrie France S.A. issue their own environmental reports. In fiscal 2002, Ricoh Numazu Plant, Ricoh Electronics, Inc. in the United States, as well as the non-production sites, namely, Ricoh Technosystems Co., Ltd., and Ricoh Logistics System Co., Ltd. began publishing such reports. Guidelines* were drawn up in fiscal 2001 to encourage as many business sites as possible around the world to issue their own reports.

* <http://www.ricoh.co.jp/ecology/report/site.html> (Japanese only)



Environmental reports of Ricoh business sites and Ricoh Group affiliates

Environmental Web Site

Ricoh's environmental Web site focuses on timeliness and accessibility of information so that visitors can easily find the information they want, including bulletins and information on products covered by the Law on Promoting Green Purchasing. In fiscal 2002, a new section called "Global Information" was established on the English version of the Web site to facilitate access to information from the five Ricoh Group regions around the world. On the ECO TODAY¹ Web site for children, a section called the Tempel-Tuttle Story was set up. In it, forest ecosystem conservation activities are explained in an easy-to-understand way using the examples from China, Brunei, Malaysia, and Afan Forest

in Japan. Ricoh's environmental Web site had 1,340,885 visitors this year, approximately 270,000 more than the previous year. And in fiscal 2002, Ricoh won the Grand Prix of the Environment Goo Award from Japan's largest environmental information Web site, "Environment Goo²."

1. http://www.ricoh.co.jp/ecology/ecotoday/index_h_eng.html
2. <http://www.eco.goo.ne.jp/> (Japanese only)

Environmental Advertisements and Sponsored Publications

Ricoh produces environmental advertisements to introduce its activities to people in charge of environmental conservation in government, business enterprises, citizens, and other stakeholders, as well as to highlight the Ricoh Group's environmental conservation values. No business activities are allowed to be carried out in disregard of environmental issues. Ricoh thus began producing advertisements for business people in fiscal 2002. These efforts are being recognized. Ricoh received the Minister of Environment Award and the Environmental Advertisement Award in the magazine advertising division at the 12th Environmental Advertising Contest. Ricoh has also endorsed a photo anthology, *One Hundred Years of Idiocy*, serving as its sole sponsor.



A magazine advertisement explaining Ricoh's environmental management concept



A magazine advertisement explaining examples of environmental management



A magazine advertisement explaining ecosystem conservation activities



A newspaper advertisement explaining environmental management



One Hundred Years of Idiocy, a photo anthology sponsored by Ricoh

Exhibitions

The Ricoh Group actively takes part in environmental activities at such exhibitions as Eco-Products, held in Japan; CeBIT, held in Europe; and International CES, held in the United States, to draw attention to the environmental performance of its products and activities. At Eco-Products 2002, the Ricoh Group presented eco-friendly products under the theme of sustainable management as well as parts made from recycled PET bottles¹, a result of the Ricoh Group's environmental conservation activities. Additional presentations were given to explain the Ricoh Group's global activities. At the International CES² (Consumer Electronics Show), the Ricoh

Group focused on its efforts to reduce environmental impact through its quick start-up (QSU) technology³—a convenient, energy-saving technology—and high-speed duplex copying³. Ms. Marianne Lamont Horinko, assistant administrator of the Environmental Protection Agency (EPA), visited the Ricoh booth and gave a word of thanks and encouragement for the Ricoh Group's efforts, which includes its long-running awareness promotion of the Energy Star Program.

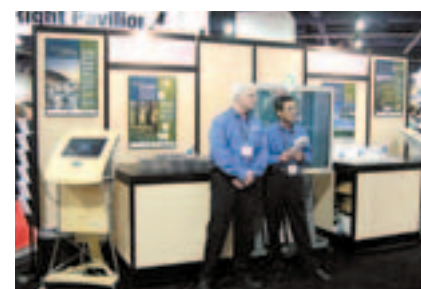
1. See page 17.
2. One of the largest exhibitions of electric and electronic products in the United States, CES is operated by the Consumer Electronics Association (CEA), a trade organization for office equipment and home appliances. This year, CEA organized environmental conservation activities with the Environmental Protection Agency (EPA).
3. See pages 38 and 39.



Eco Products 2002



CeBIT



International CES

A Neon Sign Using Natural Energy

Ricoh recently put up a neon sign in Osaka called the “solar/wind power sign,” which is powered by the hybrid system that combines photovoltaic and wind power. Over 10 years, it is estimated the sign will save some 30 tons in CO₂ emissions.

* See <http://www.ricoh.co.jp/ecology/history/2003/energy> for details. (Japanese only)



Environmental Lectures—Promoting Communication with Society

The top management of the Ricoh Group eagerly gives lectures of their own volition to explain the importance of environmental conservation and to provide an overview of the Company’s environmental management system. In fiscal 2002, Ricoh gave 59 presentations¹ outside the company. At the keynote speech for Eco Products 2002, Ricoh president Masamitsu Sakurai explained the Ricoh Group’s sustainable management practices. Ricoh Corporation, the regional sales headquarters for the Americas, holds frequent seminars for major customers and government authorities to explain the importance of environmental conservation, reduction of environmental impact in Ricoh products, as well as cost reductions resulting from energy conserva-



The keynote speech for Eco Products 2002

tion. In the same fiscal year, Ricoh vice president Haruo Kamimoto was appointed director of the Global Reporting Initiative Forum Japan².

1. The total number of major speeches in which Ricoh’s Corporate Environment Division was involved. Other company divisions carry out similar activities separately.
2. An organization established to gather opinions of Forum members and information on internationally-recognized environmental measures taken in Japan; the organization notifies the Global Reporting Initiative (GRI) about these opinions and measures, and notifies Forum members about GRI activities. Forum members include businesses, government officials, and NGOs.
<http://www.gri-fj.org/> (Japanese only)

Social Evaluation

The Ricoh Group earnestly promotes information disclosure, along with efforts to improve sustainable management. The reaction of society to our activities helps us understand the degree of progress achieved, and the strengths and weaknesses of our activities. It also helps us set new goals. Here is a sample of the reaction to Ricoh’s environmental efforts:

- In the World’s Most Respected Companies survey, an annual survey conducted by the *Financial Times*, a U.K. business newspaper, Ricoh was chosen by global CEOs as the world’s sixth most respected company in the “most environment-conscious” category (third place among Japanese companies).



The *Financial Times* (January 20, 2003)

- Ricoh ranked 17th in a survey of environmental, economic, and social sustainability conducted by the United Nations Environment Programme (UNEP)/Sustainability. (Ricoh also ranked number one among Japanese companies and number one in the electronics division.)

- Ricoh was ranked number one in the world among 16 nominees in environmental, social, and cultural aspects for office equipment and home appliances in a corporate responsibility rating conducted by Ökom GmbH, Germany.

- Ricoh has been included in the Dow Jones Sustainability Indexes (DJSI)* of Dow Jones & Company in the United States.

* The stock price indexes were developed jointly in 1999 by Dow Jones & Company and Sustainable Asset Management, a Swiss asset management company specializing in SRI funds. The indexes consist of 310 blue chip companies in 23 countries, which are recognized for their efforts in sustainability.



- Ricoh received the 12th Grand Prize for the Global Environment Award sponsored by the *Japan Industrial Journal*.

* The ceremony was held in April 2003.

- Ricoh received* the WEC Gold Medal for International Corporate Achievements in Sustainable Development from World Environment Center, the first Asian company ever to do so.

* See page 21, (Achievements in Fiscal 2002). The ceremony was held in May 2003.



Partnerships

Contributing to environmental impact reduction through better relationships with business partners

From the standpoint of global environmental conservation, we must abandon the idea of winners and losers in business because this creates inequality between the rich and poor, and results in destruction of nature, such as deforestation in developing countries. The Ricoh Group, in developing its global business activities, works to reduce its environmental impact on society as a whole by promoting awareness of sustainable management and supporting its partners in every stage of business: from suppliers, to logistics companies, to recycling companies.

Suppliers

The Ricoh Group provides sustainable management support to suppliers around the world through green procurement*. The Ricoh Group has drawn up ethics guidelines for purchasing and trains personnel in managerial positions at 15 production sites in Japan. Periodic audits are carried out by internal auditors at each supplier to ensure compliance with the Law on the Prevention of Delay in the Payment of Subcontracting Charges and Related Matters. These audits have been praised by the Fair Trade Commission and the Small and Medium Enterprise Agency.

* See page 45.

Logistics Companies

Ricoh Logistics System Co., Ltd., which is responsible for the Ricoh Group's logistics system, consigns about 70% of its domestic delivery and collection business to subcontractors. The company holds seminars on safe and economical driving and encourages drivers at its partner companies, as well its own drivers, to participate. The company also monitors the vehicles of major partner companies through a global positioning system (GPS). This ensures

safer transportation and reduces environmental impact.

Recycling Companies

In 1999, Ricoh Logistics System and Ricoh's Recycling Business Division began producing joint annual audits at 10 recycling centers and a secondary treatment company in Japan. These audits deal with such matters as compliance of treatment processes with relevant laws and regulations, health and safety management of employees' work environment, the effects of noise on the surrounding environment, and manifest traceability. The audits help improve business procedures at recycling centers and establish the environmental management system. As a result, all the recycling centers had acquired ISO14001 certification in June 2002.

Earnest Efforts on Patent Disclosure

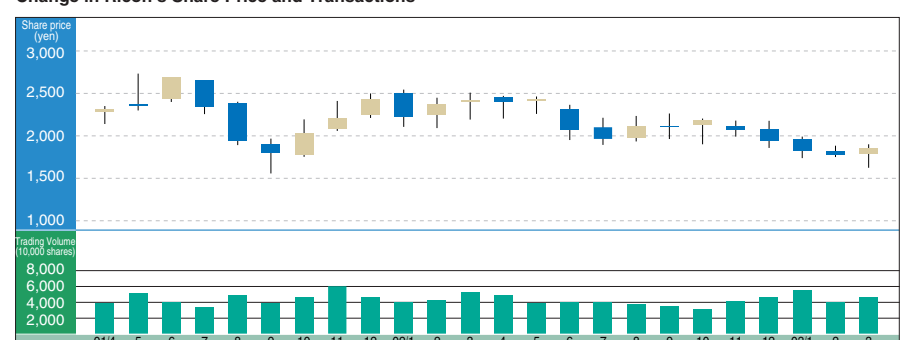
Encouraging more people to use products equipped with environmentally friendly technologies, including energy conservation technologies, can make a contribution to society. Ricoh's disclosure policy regarding its environment-oriented patent is geared toward such a contribution. To protect its sustainable management concept and to actively promote the concept in society, Ricoh has applied for a patent of its business model*.

*The patent application was filed in 2001 in the name of its inventor, Masamitsu Sakurai, the president of Ricoh. The concepts of sustainable management (see page 13) and the IT system-driven environmental accounting (see page 25) were combined in the patent application.

Shareholders and Investors

Given the emergence of eco funds and socially responsible investment (SRI), corporate evaluation in the stock market should be based on profit, environmental conservation, social responsibility, and other performance indicators. Ricoh is now listed on six stock exchanges including Tokyo, Amsterdam, Frankfurt, and Paris. To facilitate better communications with investors, Ricoh holds shareholders' meetings in Japan, issues Japanese-language business reports, English-language annual reports, and sustainability reports in both Japanese and English. In fiscal 2001, Ricoh received the Information Disclosure Award for Listed Companies from the Tokyo Stock Exchange for its easy-to-understand information disclosure. In light of the changes in securities markets, it is increasingly important to communicate effectively with individual investors. In fiscal 2002, Ricoh Leasing Company Ltd. received an award from the Tokyo Stock Exchange in recognition of its efforts to expand the number of individual investors in the company.

Change in Ricoh's Share Price and Transactions



Environmental Education and Awareness Promotion

Promoting employee awareness of environmental issues through environmental education and awareness promotion activities

In successfully implementing sustainable management, in which all employees participate, the aggressive promotion of environmental conservation activities by each division is needed, as are statements from top management on the need for perseverance in carrying out such activities. Urging individual employees to become more aware of environmental issues is equally important. Sustainable management activities may appear to be a corporate responsibility, but employees are the ones who actually conduct the activities. The success or failure of any activity depends upon the extent to which employees understand its importance. The Ricoh Group is promoting employee awareness of environmental issues as well as their behavior in a variety of ways, such as providing environmental education, sharing relevant know-how through IT networks, promoting Zero-Waste-to-Landfill efforts, and supporting the volunteer activities of employees through such means as nurturing environmental volunteer leaders and commending their actions. In these ways and others, the Ricoh Group strives to put its environmental principles into practice among its 74,000 employees around the world.

* See page 15, for award to promote sustainable management.

International

The Ricoh Group Environmental Conference

In December 2002, the people in charge of environmental issues from five regions gathered for the Ninth Ricoh Group Environmental Conference. Ricoh vice president Haruo Kamimoto gave a speech on the promotion of sustainable management. At the conference, the first Sustainable Development Award* was given.

* See page 15.



The Ninth Ricoh Group Environmental Conference

Zero-Waste-to-Landfill Activities

In fiscal 2001, the Ricoh Group achieved Zero-Waste-to-Landfill¹ at its production sites² worldwide and has nearly done so at its nonproduction sites as well. Such achievements can be obtained only if all

employees are closely united and are striving for the same goal, such as setting up detailed waste sorting.

1. Zero-Waste-to-Landfill has been achieved and maintained at business sites covered by the environmental action plan up to fiscal 2001, namely, all production sites in Japan, Ricoh Electronics, Inc. (USA), Ricoh UK Products Ltd. (UK), Ricoh Industrie France S.A. (France), Ricoh Asia Industry (Shenzhen) Ltd. (China), and Taiwan Ricoh Co., Ltd. (Taiwan)
2. See pages 18, 49, and 56.

ISO 14001 Certification

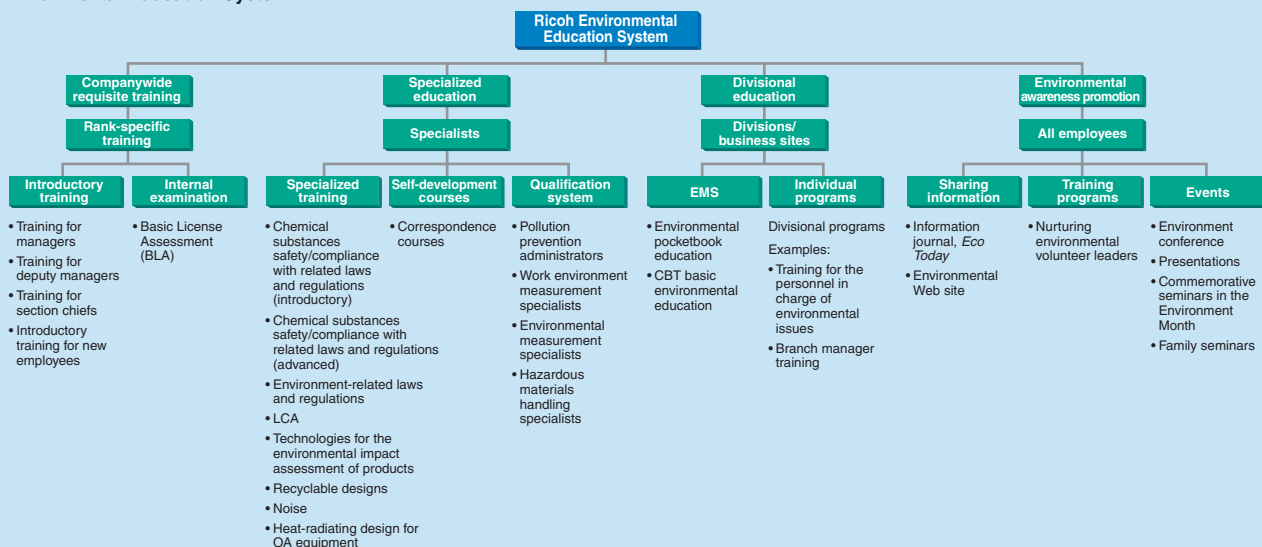
ISO 14001 certification significantly contributes to promoting employee awareness of environmental conservation. The Ricoh Group earnestly endeavors to obtain this certification at both its production and nonproduction sites.

Japan

Environmental Education

The Ricoh Group established an education system for Group companies in Japan to help employees become more environmentally aware professionals. Under this system, a variety of seminars and training sessions are held, including those for new employees and designers. Furthermore, employees are encouraged to obtain official qualifications as pollution control managers and other positions.

Environmental Education System



Environment-Related Seminars and Number of Participants

Name of Seminar	FY 2002
Recyclable Designs	41
Technologies for the Environmental Impact Assessment of Products	45
Environment-Related Laws and Regulations	47
LCA	32
Chemical Substance Safety/Compliance with Related Laws and Regulations (Introductory)	24
Chemical Substance Safety/Compliance with Related Laws and Regulations (Advanced)	18
Noise	33
Thermal Design of Office Equipment	14
Total Number of Participants	254

Nurturing Environmental Volunteer Leaders

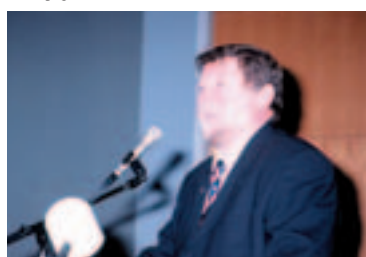
To support employee voluntary environmental conservation activities, Ricoh started a leadership-training program* in 1999. Environmental volunteer activities are indispensable tools in promoting employee awareness of environmental conservation. Employees can truly understand the importance of environmental conservation by actually taking part in volunteer activities and sharing what they have learned, rather than by simply reading about it in books.

* See page 65.

Promoting Awareness through Lectures

Ricoh started a month-long campaign to promote employee awareness of environmental conservation in fiscal 2001. In fiscal 2002, guests were invited from outside the company to give keynote speeches. Guests included Mr. C.W. Nicol of Afan Forest*, an organization supported by Ricoh, as well as Mr. Masahide Kashio, who promotes conservation of mangrove forests.

* See page 63.



A speech commemorating the month-long campaign

Europe

European Environmental Conference

In February 2003, Ricoh Europe B.V. in the Netherlands organized a European conference on the environment, the biggest in its history, with 80 participants from 18 countries. Participants included those in charge of promoting environmental conservation and recycling at Ricoh sales companies, NRG sales companies, Lanier sales companies in Europe, and European manufacturing companies. They enthusiastically took part in the question-and-answer sessions, especially the one following the WEEE (EU Directive of Waste Electrical and Electronic Equipment in effect, Feb., 2003) presentation on the 2006 European recycling regulations given by a lawyer. This clearly showed how keenly interested the participants were in WEEE.



European Environmental Conference (February 2003)

The Netherlands: Ricoh Europe

Ricoh Europe B.V., the regional sales headquarters for Europe, initiated the Star Award system to solicit proposals from employees as a means of promoting full participation in sustainable and CS management. The employees' proposals are evaluated according to seven criteria, such as Impact (for global development), Feasibility (the degree of difficulty in carrying out the proposal), segment environmental accounting*, Sustainability and Job relatedness. The company will donate ¥100 to any environmental conservation organization in the name of the employee who selects the best proposal every three months. In fiscal 2002, five proposals, including one for wind-generated power,

were adopted, and donations were made for those proposals. Ten employees who became aware of wind-generated power modified their homes so that they could run on wind-generated power.

* See page 29.

The Americas

U.S. Meeting on the Environment

Ricoh Corporation, the regional sales headquarters for the Americas, holds quarterly meetings on the environment for those in charge of environmental issues at sales companies for Ricoh, Savin, and Lanier. The meetings take place in the form of teleconferences to reduce time wasted and the environmental impact of traveling to a particular meeting site.

The United States: REI

Aiming to achieve Zero-Waste-to-Landfill, Ricoh Electronics, Inc. (REI), a U.S. manufacturing subsidiary, carries out an award program called Ideas for Excellence, in which it solicits proposals for 5R* from its employees. In the first half of fiscal 2002, 75% of the proposals were put into practice.

* See page 49.

The United States: Ricoh Corporation

Ricoh Corporation, the regional sales headquarters for the Americas, and Savin Corporation, a sales company, collected electronic devices from the homes of their employees to be recycled on America Recycles Day (November 15). The collected products were recycled at the Ricoh Group's Midwest U.S. Recycling Center* in Chicago.

* See page 61.

Health and Safety

Promoting activities to protect employee health and safety as part of corporate social responsibility (CSR)

Ricoh, in line with its management policy, promotes people-oriented management. Moreover, this philosophy is always applied to occupational health and safety activities. The Ricoh Group positions occupational health and safety activities as an important part of CSR, diligently promotes employee health and safety, and works to create healthy and comfortable workplaces. As a part of these efforts, the Ricoh Group establishes occupational health and safety management systems in compliance with the laws of countries and regions where the Ricoh Group operates. For example, at present, establishment of a Ricoh Groupwide system based on the OHSAS 18001 is underway, led by Ricoh in Japan. Mental health care is also enthusiastically promoted at research and development divisions, not only at production sites.

OHSAS 18001 Certification Awarded

In March 2003, Ricoh's Numazu and Fukui Plants obtained the JISHA-method OSHMS* certification by Japan Industrial Safety and Health Association¹ (JISHA), a public organization affiliated with the Ministry of Health, Labor and Welfare. The Gotemba Plant obtained an occupational health and safety management certification² the first Ricoh Group facility to do so. The occupational health and safety management certification is a scheme to



An OSHMS certification ceremony

reduce, eliminate, or prevent hazards at the workplace. The system aims at the continual reduction of occupational hazards and disease.

1. Japan Industrial Safety and Health Association (JISHA) describes its system as the Occupational Safety and Health Management System (OSHMS) pursuant to ILO guidelines, focusing on the term "safety" prior to "health." This system differs from the Occupational Health & Safety Management System (OHSAS) used by certification organizations.
2. OHSAS 18001 certification was obtained in March 2002.

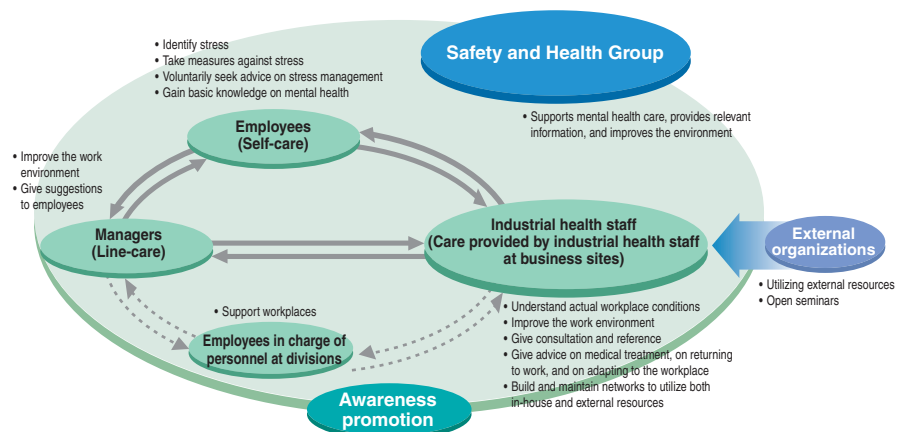


Mental Health Care

Ricoh considers mental health care a current issue to be included in its health and safety measures and is doing its best to protect each employee's privacy. Companywide support is given to employees under this system, which is based on the

Employee Assistance Program (EAP). Focusing on education in mental health care promotion activities, the Ricoh is planning to promote educational programs in stages for industrial mental health care staff and other relevant personnel in managerial positions. In fiscal 2002, basic training programs were conducted for managers in the research and development divisions to promote their awareness of changes in the mental health of their subordinates. During the next fiscal year, similar efforts are scheduled to be extended to relevant personnel divisions, based on the know-how developed through previous educational efforts.

Ricoh's Mental Health Care System



Making Use of an In-House Network

Ricoh characteristically took advantage of the digital network technology it has become so good at creating it its business to establish a database and network to disseminate information on health and safety. The database and network allows the Ricoh to quickly spread relevant information to employees and to promote the sharing of know-how throughout the Ricoh. The Gotemba Plant, taking advantage of its OHSAS 18001 certification, established the Gotemba OHSMS* navigation system to promote the sharing of know-how with other business sites. The in-house network is also used for the issuance of health management news to promote employee awareness of health and safety. In fiscal 2002, the information was opened to the employees of affiliates as well.

* OHSMS: Occupational Health & Safety Management System

Safety Management Activities

To reduce occupational hazards, Ricoh is promoting on-site voluntary safety activities for employees, especially at its production sites. Such activities include examining accident prevention measures* based on the near-accident experiences of employees, providing introductory training

on safety to new employees, promoting employee awareness of safety, and having industrial physicians visit the workplace. Moreover, should an accident occur, a careful examination will be made to establish measures to prevent reoccurrence. The site where the accident occurred will then be notified of the newly established measures to prevent reoccurrence in the future.

* Measures to prevent accidents from happening by looking at occurrences that came close to becoming an accident but that only frightened or surprised the employee(s) involved

Health Checkups and Complete Medical Examinations

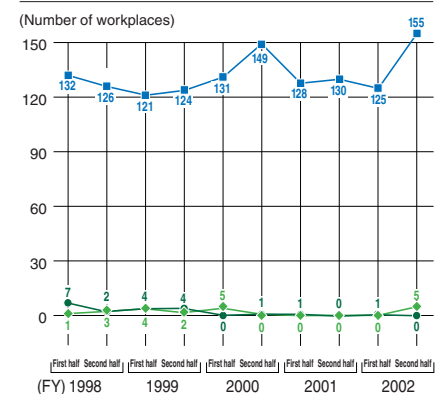
Ricoh offers health checkups and summary medical examinations to employees between the ages of 35 and 40. Ricoh requires a complete medical examination for employees 40 years old or older. For employees whose checkups or examinations have revealed health problems, the Company established a follow-up system for re-examinations, detailed examinations, continued observation, and medical treatment. Ricoh's health management system also covers the family members of employees, with complete medical examinations offered to employees' spouses. The checkup and examination results are compiled into the health checkup system. Such information is used in follow-ups for

employees whose checkups or examinations have revealed health problems, as well as for employees' own health management. All personal information is held according to strict confidentiality requirements.

Work Environment Measurement

The Ricoh Group continues to monitor its work environment to prevent work-related health problems. The Ricoh Group endeavors to improve the work environment by measuring not only those substances that are required to be measured by law but also those substances that are not required to be measured by law but may be hazardous to employees' health.

Work Environment Measurement (Ricoh and its affiliates in Japan)



1st control area

In most of the workplaces (95%), the concentration of toxic substances in the atmosphere does not exceed the controlled density.

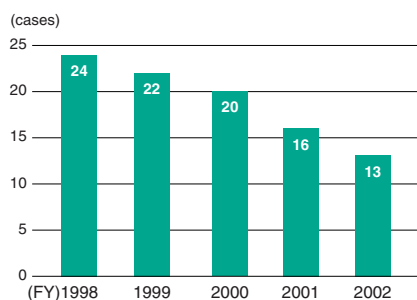
2nd control area

The average concentration of toxic substances in the atmosphere of the workplaces does not exceed the controlled density.

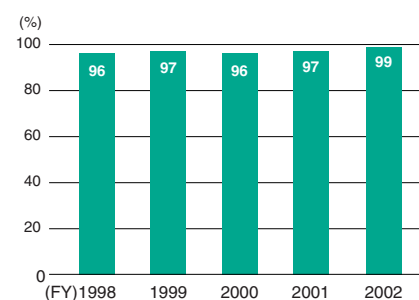
3rd control area

The average concentration of toxic substances in the atmosphere of the workplaces exceeds the controlled density.

Number of Occupational Hazards at Ricoh



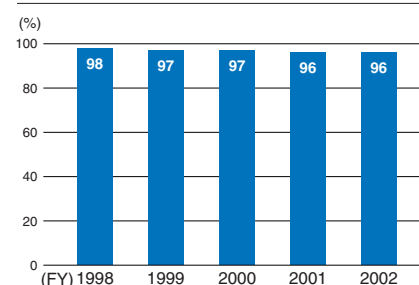
Health Checkup Rate



Records of Outstanding Accident-Free Operations

- Level 5 accident-free operations (23.8 million hours)
Atsugi Plant (May 1999)
- Level 4 accident-free operations (15.9 million hours)
Atsugi Plant (April 1996)
- Level 4 accident-free operations (15.9 million hours)
Ohmori Office (August 1991)
- Level 1 accident-free operations (6.9 million hours)
Numazu Plant (November 2002. This level is continuously being surpassed.)

Complete Medical Examination Rate



The Ricoh Group's Global Network

● Marketing and general operations

■ Production and R&D

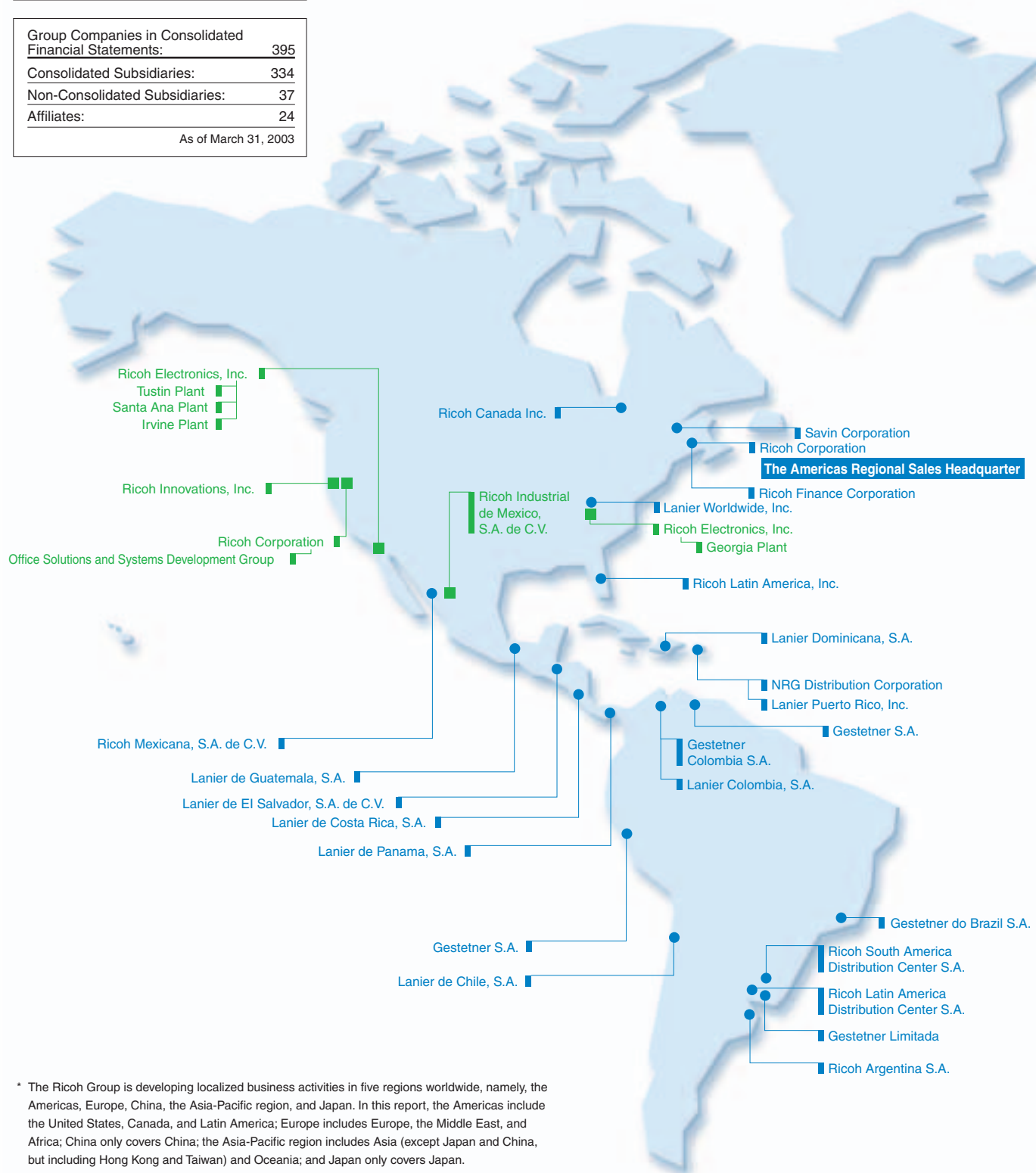
Group Companies in Consolidated Financial Statements: 395

Consolidated Subsidiaries: 334

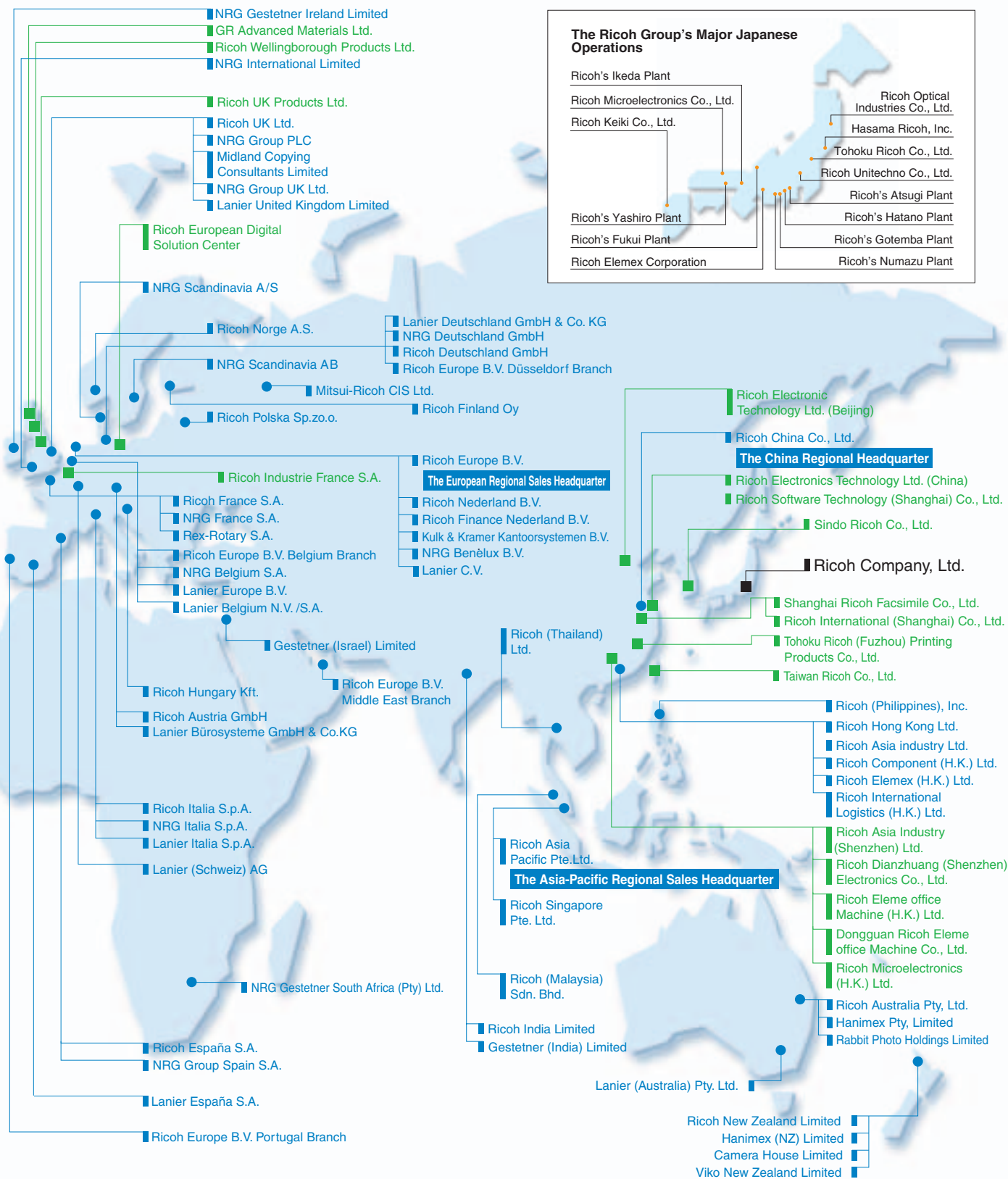
Non-Consolidated Subsidiaries: 37

Affiliates: 24

As of March 31, 2003



* The Ricoh Group is developing localized business activities in five regions worldwide, namely, the Americas, Europe, China, the Asia-Pacific region, and Japan. In this report, the Americas include the United States, Canada, and Latin America; Europe includes Europe, the Middle East, and Africa; China only covers China; the Asia-Pacific region includes Asia (except Japan and China, but including Hong Kong and Taiwan) and Oceania; and Japan only covers Japan.



Business Site Data

(Reviewed by BVQI [34])

Ricoh Production Sites

	Production (Resource Conservation and Recycling) (See pages 49 and 50.)				
	Waste recovery rate (%)	Total waste amount produced (t) ¹	Total waste discharge amount (t) ²	Final waste disposal amount (t)	Water consumption (10,000 tons)
Atsugi Plant —Office equipment and other products 1005 Shimo-Ogino, Atsugi, Kanagawa 243-0298, Japan	100	756	739	0.0	128
Hatano Plant —Printed circuit boards and electronic components 423 Hirasawa, Hadano, Kanagawa 257-8586, Japan	100	190	190	0.0	18
Numazu Plant —Supplies 16-1 Honda-machi, Numazu, Shizuoka 410-8505, Japan	100	8,673	3,228	0.0	1,805
Gotemba Plant —Copiers, fax machines, and data processing systems 1-10 Komakado, Gotemba, Shizuoka 412-0038, Japan	100	1,327	1,327	0.0	81
Fukui Plant —Supplies 64-1 Ohmi, Sakai-cho, Sakai-gun, Fukui 919-0547, Japan	100	7,273	1,747	0.0	166
Ikeda Plant —Electronic devices 13-1 Himemuro-cho, Ikeda, Osaka 563-8501, Japan	100	191	186	0.0	249
Yashiro Plant —Electronic devices 30-1 Saho, Yashiro-cho, Kato-gun, Hyogo 673-1447, Japan	100	521	521	0.0	141

The Ricoh Group's Manufacturing Subsidiaries in Japan

Tohoku Ricoh Co., Ltd. —Office equipment and parts for copiers 3-1 Shinmeido, Nakanomyo, Shibata-machi, Shibata-gun, Miyagi 989-1695, Japan	100	1,687	1,687	0.0	189
Hasama Ricoh, Inc. —Parts for copiers, and data processing equipment 86 Aza-Kitasanden, Sanuma, Hasama-cho, Tome-gun, Miyagi 987-0511, Japan	100	2,177	2,177	0.0	10
Ricoh Unitech Co., Ltd. —Fax machines, copiers, and microfilm equipment 713 Tsurugasone, Yashio, Saitama 340-0802, Japan	100	281	281	0.0	11
Ricoh Optical Industries Co., Ltd. —Photographic equipment 10-109 Ohata, Hanamaki, Iwate 025-0303, Japan	100	721	721	0.0	49
Ricoh Keiki Co., Ltd. —Parts for copiers and data processing equipment 3144-1 Aza-Ipponguri, Shimoizumi, Kubozumi-machi, Saga, 849-0903, Japan	100	146	146	0.0	5
Ricoh Microelectronics Co., Ltd. —Printed circuit boards 10-3 Kitamura, Tottori, 680-0911, Japan	100	535	535	0.0	20
Ricoh Elemex Corporation —Office equipment, clocks, watches, and educational equipment 2-14-29 Uchiyama, Chikusa-ku, Nagoya, Aichi 464-0075, Japan	100	1,101	1,101	0.0	104
Ena Plant 1218-2 Nakano, Nagashima-cho, Ena, Gifu 509-7205, Japan					
Okazaki Plant 3-69 Ida-cho, Okazaki, Aichi 444-8586, Japan					

The Ricoh Group's Manufacturing Subsidiaries outside Japan

Ricoh Electronics, Inc. (REI) —Office equipment and supplies One Ricoh Square, 1100 Valencia Avenue, Tustin, CA 92680, U.S.A.	100	6,869	6,869	0.3 ⁴	176
Ricoh UK Products Ltd. (RPL) —Copiers and supplies Priorslee, Telford, Shropshire TF2 9NS, U.K.	100	1,020	1,020	0.0	30
Ricoh Industrie France S.A. (RIF) —Copiers, fax machines, and supplies 144, Route de Rouffach 68920, Wettolsheim, France	100	7,617	7,617	0.0	64
Ricoh Asia Industry S.Z. Ltd. (RAI) —Copiers Color TV Industrial Zone, Futian District, Shenzhen, P.R. China	100	1,582	1,582	0.0	147
Taiwan Ricoh Co., Ltd. —Photographic equipment 34 Lane 200, Jwu Her Road, Fuh Shing Li, Chang Hwa, Taiwan	99	193	193	2.2 ⁵	46

1. **Total waste generation:** the amount of waste generated
When waste is generated after waste reduction processing during manufacturing, the total waste generation amount means the amount of waste at the point of generation. When waste is processed after manufacturing at a facility in a business site, the total waste generation amount means the amount of waste before the waste processing.

2. **Total waste discharge:** the amount of waste discharged outside business sites
This includes residual waste after the intermediate processing of waste at business sites.

3. **The Ricoh Group's target substances for reduction:** PRTR substances designated by four Electric & Electronic Industries Associations in Japan between fiscal 1998 and 2000. The figures are indicators multiplied by the environmental impact coefficient. (See page 51.)

Production (Preventing Global Warming) (See pages 47 and 48.)		Production (Pollution Prevention) (See pages 51 and 52.)				
Energy consumption		Emissions into air (NOx) (t)	Emissions into air (SOx) (t)	Water discharge (BOD) (t)	'Ricoh target substances for reduction' used ³	'Ricoh target substances for reduction' discharged ³
(t-CO ₂)	(TJ)					
13,763	157.6	1.872	0.022	1.765	72.9	16.2
1,501	15.6	0.039	0.001	0.502	762.6	159.6
30,998	549.6	15.260	0.000	4.321	12,534.4	4,740.0
3,444	40.9	0.739	0.009	0.041	0.0	0.0
19,190	237.5	6.004	0.139	0.880	7,768.2	860.0
10,557	122.4	1.428	0.000	0.857	183.6	90.2
27,053	296.1	3.293	0.061	0.278	432.5	272.3
10,500	123.5	3.259	2.171	6.359	1,770.3	365.8
2,051	24.2	0.441	0.278	0.102	38.5	32.7
1,199	14.1	0.120	0.000	0.013	34.3	34.3
7,001	79.8	1.544	4.521	0.313	110.6	8.9
810	8.4	0.000	0.000	0.000	202.9	0.1
3,220	34.9	0.434	2.899	0.128	143.2	0.0
6,355	65.5	0.563	0.124	0.086	240.0	95.0
41,120	366.7	9.474	0.000	0.777	889.9	31.2
10,616	112.1	2.051	0.000	0.000	1,497.2	1,099.2
8,807	264.5	6.230	0.000	2.809	39.7	1.7
11,393	67.3	0.537	0.478	2.739	13.7	13.7
2,741	19.2	0.026	0.007	0.029	18.7	0.5

4. Although the resource recovery of selenium drums collected from markets was commissioned to an outside company, REI found that the company was not processing the drums appropriately and according to Ricoh standards. Because REI could not find a resource recovery company in the United States that could process peeled-off selenium alloy appropriately, REI decided to peel off the selenium alloy from the selenium drums at its plant and send it to an isolated landfill to solidify the toxic substance.

5. Because there was no infrastructure in Taiwan for the resource recovery of coating sludge, it was subjected to an isolated landfill by officially designated disposal companies. The figures listed in the final waste disposal above are the amounts used in landfills. (This was the reason coating sludge was excluded from Zero-Waste-to-Landfill efforts.) In fiscal 2002, however, the infrastructure for the resource recovery of coating sludge was established, and coating sludge is currently subject to resource recovery.

The Ricoh Group's Environmental Conservation Activities (1976–March 2002)

The Ricoh Group's Major Activities

1976	Establishes Environmental Promotion Section
1990 December	Sets up Environment Administration Office
1992 February	Establishes Ricoh General Principles on the Environment
March	FT5570 copier awarded the BAM (initial version)
1993 March	Achieves total elimination of ozone-depleting substances (specific kinds of chlorofluorocarbons (CFCs), specific kinds of halon, carbon tetrachloride, etc.)
May	Announces the recycled product design basic policy and implements recyclable design level 1
May	Launches material labeling on plastic parts
December	The Ricoh Group achieves total elimination of ozone-depleting substances (specific kinds of CFCs, specific kinds of halon, carbon tetrachloride, etc.).
1994 August	The Comet Circle concept is completed.
November	Implements labeling of materials and grade on plastic parts
1995 February	Holds First Ricoh Company Environment Conference
October	Announces International Energy Star certified products
December	Ricoh Gotemba Plant acquires ISO 14001 certification (the first certification given by a Japanese certification organization).
1996 July	Ricoh UK Products acquires BS 7750/ISO 14001 certification.
1997 March	Sets 79 types of management chemical substances
1998 April	Ricoh establishes the Recycling Division.
May	Issues <i>Ricoh Group Green Procurement Guidelines</i>
October	Ricoh Fukui Plant achieves a 100% resource recovery rate (Zero-Waste-to-Landfill).
1999 January	Issues the <i>Ricoh Group Environmental Report 1998</i>
September	Ricoh announces results of its first environmental accounting.
December	Ricoh enters one of its machines in Eco-Products 1999, Japan's first comprehensive exhibition for environment-friendly products.
2000 January	Ricoh acquires Eco-Mark certification for 28 copier models.
February	Ricoh's digital multifunctional copier, the imagio MF6550, acquires Type III Environmental Impact Disclosure from BVQI (Sweden).
May	Ricoh starts projects to restore virgin forests in Asia.
2001 March	Ricoh President Masamitsu Sakurai attends the first meeting of the Conference on the Creation of <i>Wa no Kuni</i> .
July	Ricoh announces its participation in e-mission 55.
December	imagio MF6550RC, a eco-friendly digital copier, is marketed for rental use.
2002 January	The first Ricoh Green Procurement Meeting is held.
March	Ricoh Gotemba Plant becomes the first in the Ricoh Group to obtain certification for its occupational health and safety management system.

Society's Recognition of the Ricoh Group's Major Activities

1993 May	Ricoh UK Products' copier photosensitive drum recycling technology receives the Queen's Award in the U.K.
September	Ricoh UK Products' power consumption reduction activities receives the Business Energy Award's Grand Prize.
1994 May	Ricoh UK Products' copier photoconductor drum recycling technology receives the European Better Environment Awards for Industry.
1995 March	Ricoh receives the Minister of International Trade and Industry Prize in resource-recovery development projects for its efforts in environment-conscious product assessment and recyclable designs.
1997 March	Ricoh Corporation (United States) wins Energy Star Copier Prize.
1998 December	Ricoh ranked number one in the Second Corporate Environmental Management Level Survey by the <i>Nihon Keizai Shimbun</i> newspaper.
1999 November	Ricoh wins the IEA's Demand-Side Management Award of Excellence in the recently created Copier of the Future Division for its energy-saving technology.
2000 March	Ricoh Corporation receives three awards from the Energy Star Program: 1) 2000 Energy Star Excellence in Consumer Education Award, 2) Labeling Partners of the Year Award, and 3) Office Equipment Partner of the Year Award (for the fifth consecutive year, the Energy Star Award).
December	Ricoh ranks first for the third year in a row in the 4th Corporate Environmental Management Level Survey organized by the <i>Nihon Keizai Shimbun</i> .
2001 July	Ricoh receives the highest eco-rating, "AAA", in the photographic and office equipment categories from Innovest Strategic Value Advisors, a U.S. investment research company, and ranked first among nominees.
December	In a survey conducted by the <i>Financial Times</i> , a U.K. business newspaper, Ricoh is chosen by global CEOs as the world's seventh most respected company in the "most environment-conscious" category.
2002 February	Ricoh president Masamitsu Sakurai receives the 22nd Mainichi Economic Management Award.

Worldwide Trends

1971	Environment Agency set up
	Ramsar Convention adopted
1977	United Nations Conference on Desertification held
	UNEP conference held
1987	Montreal Protocol adopted
1990	London meeting (set phaseout of CFCs and HCFCs)
1991	Recovered Resource Use Promotion Law enacted
1992	UN Conference on Environment and Development (Earth Summit) held
1993	Energy Saving Law revised
1995	The First Conference of Parties to the United Nations Framework Convention on Climate Change (COP1) held
	Law for Promotion of Sorted Collection and Recycling of Containers and Packaging enforced
	International Energy Star Program started
1996	ISO Environmental Auditing Standards of Environmental Management System established
	International Energy Star Award launched by EPA
1997	COP3 (Kyoto Conference) held
	Kyoto Protocol adopted
1998	Eco Partnership Tokyo Conference held
	Law concerning the Promotion of Measures to cope with Global Warming established
1999	Revised Energy Saving Law enforced
	PRTR Law established
2000	Law Concerning the Promotion of the Procurement of Eco-Friendly Goods and Services by the State and Other Entities promulgated
	Basic Law for Establishing a Recycling-Based Society established
	Waste Management and Public Cleansing Law revised
	Law for the Promotion of Utilization of Recyclable Resources established
	Law Concerning the Promotion of the Procurement of Eco-Friendly Goods and Services by the State and Other Entities established
2001	Ministry of the Environment (Japan) established
	The first Conference on the Creation of <i>Wa no Kuni</i> held
	Law for Recycling of Specified Kinds of Home Appliances enforced
	Law Concerning the Promotion of the Procurement of Eco-Friendly Goods and Services by the State and Other Entities enforced in full scale
	COP7 held
2002	The World Summit on Sustainable Development (Johannesburg Summit) is held.
2003	The EU Directive on Waste Electrical and Electronic Equipment (WEEE) comes into effect.
	The Restriction of Hazardous Substances in Electrical and Electronic Equipment (RoHS) Directive comes into effect.

* See Ricoh's Web site for details. (<http://www.ricoh.co.jp/ecology/e-/global/all/index.html>)

The Ricoh Group's Environmental Conservation Activities (April 2002–March 2003)

The Ricoh Group's Activities

2002 April	Ricoh works with the World Wide Fund for Nature (WWF), an international environmental NGO, to restore the habitat of the giant panda in Shichuan Province, China.
April	Ricoh begins support for the Conservation Cocoa Project operated by Conservation International, an international environmental NGO, in the Kakum conservation area in Ghana, West Africa.
April	Ricoh announces its participation in the United Nations Global Compact.
April	The Ricoh Group conducts an eco study tour of Huangtu Plateau in China.
May	The Tenth Ricoh Nature Seminar is held.
May	Ricoh begins support for the C.W. Nicol Afan Forest in its forest restoration project.
June	The second lecture commemorating the month-long campaign to promote employee awareness of environmental conservation is held.
June	The imagio Neo C240/C320 series (eight models) is marketed.
July	The Ricoh Group announces an update to its environmental accounting.
July	The Ricoh Group issues the <i>Sustainability Report 2002</i> .
August	Ricoh begins support to the Wild Bird Society of Japan, Yanbaru Branch (NGO) for a forest ecosystem conservation project in the Yanbaru forest, Okinawa.
September	Ricoh acquires certification for internal verification under the Type III ECO-Label of the Japan Environmental Management Association for Industry (JEMAI).
September	The Ricoh Group issues the English version of <i>Sustainability Report 2002</i> .
October	Ricoh works with the C.W. Nicol Afan Forest to create a program in which children and their parents enjoy nature in the forest together.
October	Ricoh Ohmori Office achieves a 100% resource recovery rate (Zero-Waste-to-Landfill).
October	The Eleventh Ricoh Nature Seminar is held.
November	Gotemba and Atsugi logistics centers of Ricoh Logistics System achieve a 100% resource recovery rate (Zero-Waste-to-Landfill).
November	Ricoh Hong Kong cares for trees planted in a national park in the suburbs of Saikung, Hong Kong.
November	An Intermediate course for the Ricoh Nature Seminar is held for the second time.
November	The First Forest Seminar is held.
November	Ricoh Unitech holds its third company environment conference.
November	The noise measurement laboratory of Ricoh Ohmori Office acquires ISO/IEC 17025 certification from the National Institute of Standards and Technology (NIST).
December	The Ricoh Group receives the first Environmental Management Activity Award.
December	Ricoh makes an entry for Eco Products 2002.
December	The Ninth Ricoh Group Environmental Conference is held.
2003 January	Ricoh China Co., Ltd. is established in Shanghai, China.
January	Ricoh opens the Corporate Social Responsibility (CSR) Division.
January	The IPSiO NX650S/750/850 is marketed.
January	The imagio Neo C380 model 75 is marketed.
January	The imagio MF4570RC, an environment-friendly digital copier, is marketed exclusively for rental use.
January	The Twelfth Ricoh Nature Seminar is held.
February	The imagio Neo 751/601 series of high-speed, energy-efficient multifunctional copiers is marketed.
February	The imagio MF3570RC, an environment-friendly digital copier, is marketed exclusively for rental use.
February	The European Environmental Conference is held.
February	The second Ricoh Group Green Procurement Meeting is held.
March	The imagio Neo 351/451 series (seven models) is marketed.
March	Ricoh Logistics System achieves a 100% resource recovery rate (Zero-Waste-to-Landfill) at the Tohoku, Awaji, and Tosu logistics centers.
March	Ricoh Australia begins support for Warrimoo Public School, which provides environmental education for children.
March	Ricoh Europe begins support for the Woodland Trust, a U.K. NPO, for forest ecosystem conservation activities.
March	The Ichimura Kyushu School of Nature opens.

Society's Recognition of the Ricoh Group's Activities

2002 April	Chiba Ricoh receives the award of excellence of the Chiba Prefecture Quality Award.
May	<i>Ricoh Group Sustainability Report 2001</i> receives Second Prize and the Consistent Performance Prize at the Fifth Green Reporting Award 2002.
May	Ricoh Fukui Plant's fiscal 2001 environmental report wins the Prize for Site Reports at the Green Reporting Awards 2002.
May	Ibaraki Ricoh receives the Ibaraki Prefecture Quality Award (first prize).
May	Ricoh ranked number one in the world in environmental, social, and cultural aspects for office equipment and house appliances in a corporate responsibility rating conducted by Ökom GmbH, Germany.
June	Ricoh Office Solutions (Hong Kong) receives the top award of the Hong Kong Quality Award.
June	Ricoh Logistics System receives the environmental conservation award of the 3rd Logistic Environment Award.
June	Lanier Worldwide, Inc. receives a "superior" rating in the copier and multifunction peripheral (MFP) division of the J.D. Power customer satisfaction survey.
July	Ricoh ranks second in the plain-paper copier division and first in the facsimile division for four consecutive years in the J.D. Power customer satisfaction survey.
July	The Ricoh Research and Development Center receives a commendation from Kanagawa Prefecture for its pollution prevention efforts.
August	Ricoh receives an award of excellence at the 18th Corporate Public Relations Awards.
September	Ricoh is listed on the Dow Jones Sustainability Indexes (DJSI).
September	Ricoh Gotemba Plant receives a commendation from the Labour Standards Bureau, Ministry of Health, Labour and Welfare for its level 1 accident-free operations.
October	Ricoh Logistics System receives the technological award for the Logistics Grand Prize.
October	Ricoh Gotemba Plant receives a commendation from Shizuoka Prefecture as an outstanding plant in health and safety management.
October	Tohoku Ricoh receives the top award of the 3rd Railway Freight Promotion Award.
October	The imagio MF6550RC, a reconditioned digital copier, receives the Good Design Award (aka G-Mark).
October	NRG Italia receives the Ecohightech Award, which is sponsored by the Ministry of the Environment.
November	Ricoh Ginza Office receives a certificate of appreciation from Chuo-ku, Tokyo.
November	Ricoh ranks 17th in the SustainAbility/UNEP survey conducted by SustainAbility Ltd., a U.K. environmental consultancy and the Division of Technology, Industry, and Economics, United Nations Environment Programme (UNEP). It also ranks number one among Japanese companies and number one in the world in the electronics division.
November	Ricoh's environmental Web site wins the Grand Prix in the corporate division of the 3rd Environment Goo Award.
December	Ricoh receives the Minister of Environment Award in the magazine advertising division at the 12th Environmental Advertising Contest.
December	Ricoh ranks fourth in the 6th Corporate Environmental Management Level Survey organized by <i>Nihon Keizai Shimbun</i> .
2003 January	<i>Ricoh Group Sustainability Report 2002</i> receives the award of excellence and the sustainability report incentive award at the sixth Environmental Report Awards.
January	In a survey conducted by the U.K.'s <i>Financial Times</i> , Ricoh is chosen by member CEOs as the sixth world best company in terms of environmental conservation.
February	The imagio MF6550RC, a reconditioned digital copier, receives the award of excellence and the Nikkei Sangyo Shimbun award of the 16th Nikkei Superior Product and Service Awards.
February	Ricoh Asia Industry (Shenzhen) is designated the first green company in Shenzhen.
February	Ricoh Optical Industries receives the Chairman's Prize of the Tohoku Seven-Prefecture Committee for Efficient Use of Electricity for its efficient energy management in its plants.
February	The Ricoh Group is rated "AA" in the environmental rating conducted by Tohatsu Evaluation and Certification Organization.
March	Ricoh ranks fourth in a rating conducted by an environmental rating organization.

Subsequent Events

April	Ricoh receives the 12th Grand Prize for the Global Environment Award.
May	Ricoh receives the 2003 WEC Gold Medal for International Corporate Achievements in Sustainable Development.
May	Ricoh receives the Grand Prize and Sustainable Web site Prize of the 3rd Annual ECO-Web Awards from Ecology Symphony.
May	Ricoh Numazu and Fukui Plants obtain OSHMS certification.
June	<i>Ricoh Group Sustainability Report 2002</i> receives the Consistent Performance Prize at the Sixth Green Reporting Awards 2003.
June	Fukui Plant's fiscal 2002 environmental report wins the Prize for Site Reports at the Sixth Green Reporting Awards 2003.

* See page 24 for the fiscal 2002 situation for the ISO 14001 certification.

Principles of the Environmental Report and Responses from the Ricoh Group Sustainability Report 2002 Questionnaire

Principles of the Sustainable Report

In fiscal 2001, Ricoh established principles for sustainable reports, which comprise requisites for providing information useful to stakeholders when they make their decisions on sustainable management. The sustainable report is based on corporate accounting principles as no official principles or terminology have been developed for sustainable reporting.

Principles of the Sustainable Report

1. The sustainable report must contain true statements about companies' state of sustainable management ¹.
2. The sustainable report must fairly represent the results of all the sustainable management activities ².
3. The sustainable report must clearly represent the facts necessary for stakeholders not to misjudge the environmental impact of companies ³ and ⁴.
4. The sustainable report must continuously reflect the principles and procedures of basic data processing and representation methods every fiscal year and may not change those principles, procedures, and representation methods without good reason ⁵.

Notes:

1. "Companies" refer to the Ricoh Group as a whole, Group companies, and/or their business sites, depending on the coverage and level of the report.

2. The avoidance of disclosing negative information shall not be regarded as a fair representation of all information.

3. The state of companies' environmental risk management shall be included in the information stakeholders use in decision making.

4. Significant subsequent events shall be described in the report. Subsequent events refer to events that occur during the period from the day after the reporting period ends to the date the report is completed. Such events may influence the state of companies' environmental management from the next fiscal year onward.

Examples of significant subsequent events are as follows:

- a) Critical damage caused by environmental pollutants and similar causes
 - b) The announcement and implementation of large environment-related investment projects
 - c) The assignment and transfer of significant environment-oriented business transactions
 - d) Significant, controversial environment-related cases that arose or were solved
 - e) The announcement of significant development in environment-oriented technologies
- Subsequent events disclosed as notes are useful as supplemental information to determine the state of companies for future environmental management.

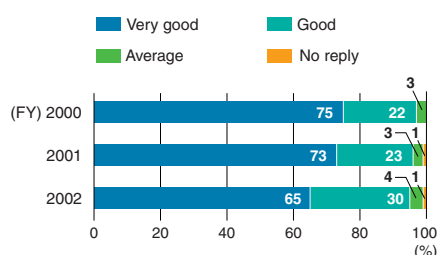
5. Ongoing applications may be cancelled only if there is good reason and it has been determined that the environmental report would be more rational if it followed procedure or if there were changes in representation. "Good reason" includes significant changes in company management policies, business reorganization, drastic technological innovation, and amendments in and the abolition of relevant laws, regulations, and standards.

Responses from the Ricoh Group Sustainability Report 2002 Questionnaire

18,850 copies of the Japanese-language version report were distributed and 135 readers returned the questionnaire as of the end of April, 2003. Beginning with the 2002 edition, the Ricoh Group has included questionnaires in its English-language version, of which 6,050 copies were distributed and four readers returned the questionnaire.

Questionnaire Results

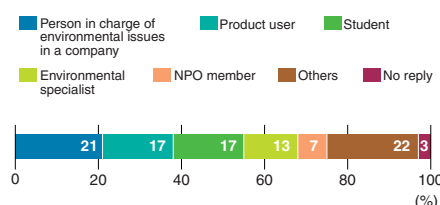
1. How would you rank the Ricoh Group's environmental conservation activities described in the report?



2. Which section(s) of the report were you most interested in?

- No. 1 Environmental Accounting
- No. 2 Social Contribution Activities
- No. 3 Logical Necessity of Environmental Conservation (Three P's Balance)
- No. 4 Research and Development
- No. 4 Production (Zero-Waste-to-Landfill)
- No. 5 Identifying Environmental Impact (Eco Balance)

3. In what capacity did you read this report?



Some of the opinions from the Ricoh Group Sustainability Report 2002 readers and improvements in the 2003 report

- If I have some money to spare someday, I would like to become a Ricoh stockholder.
- Although the descriptions are quite specific, there is little numerical data in the report. I consider the Eco-Balance issue to be especially important, but it is hard for me to understand the meaning of numerical data and the calculation method.
- ▶ The Ricoh Group calculated the environmental impact in each business process, verified that the calculated data was converted by EPS, and integrated the environmental impact information and environmental accounting information (page 27).
- I would like to have more specific reports on soil and groundwater pollution prevention efforts. Have you conducted any surveys on heavy metals?
- ▶ We have disclosed additional figures from the survey results, including those for heavy metals (page 19).
- I was very interested in the answers to the question about environmental communication. Why don't you hold meetings for stakeholders more frequently?
- ▶ We have provided additional opportunities for sharing and exchanging opinions with the people outside the Ricoh Group, including a meeting for reading environmental reports (page 69).
- I believe it would be better if you specify the products that reduced environmental impact. We have a new section, "Environmental Technologies and Products Development," which explains our efforts to reduce environmental impact at the customer end, from the standpoint of product development. In this section, we provide information about specific products (pages 35–44). Product information is also given on the topics for fiscal 2002 (pages 16–80).

Third Party Review

The Ricoh Group receives a third party review, for the purpose of disclosing more reliable information and facilitating improvements in sustainable management. Giving useful feedback on the fiscal 2001 review results* and improving the Ricoh Group's environmental management system contributed to the higher evaluation for this fiscal year. The Ricoh Group continues to promote environmental management by effectively making use of third party review.

* See the Ricoh Group Sustainability Report 2002.
<http://www.ricoh.co.jp/ecology/e-report/index.html>

Reference View (whole statement)

BVQI has reported many findings and opinions regarding environmental activity at the head office and site level through the data verification process. BVQI has concluded the following:

1. Environmental Impact Information System (EIS)

Most of the data were collected through the Environmental Impact Information System. BVQI observed improvements on the system itself and its implementation as follows:

- Presentation of a documented flow sheet in which designed data collection and aggregation is described
- Scope expansion of EIS covering overseas production (Ricoch Asia Industries China)
- Establishment and implementation of environmental management information system database application to marketing group
- Competency improvement of the data base operator

As a result of these improvements BVQI observed less manual calculation via Excel spreadsheets, a wider data collection scope and more reliable aggregated figures. The environmental management information system in sales activity includes data for 396 sites. The data is linked with the ISO14001 management system for sales and marketing and the linkage contributes to continual improvement in environmental impact reduction. BVQI observed manual aggregation and data input at the sites. The application scope for overseas production was being expanded. As a result, continual improvement is expected.

2. Environmental Accounting

Issues in data collection and aggregation processes were identified and addressed properly. Furthermore, the new database input system was introduced in April 2003. As a result, the reliability of data collection and the efficiency of data aggregation were improved. Environmental accounting can be utilized as strategic decision. In addition, the scope of application became wider in terms of geographic area and items covering non-manu-

facturing sites. However, the definition of environmental cost was not fully understood. Some data could not be verified when BVQI asked for manual recalculation at overseas sites. Ricoh still has this issue outstanding although it did not affect the overall quality and value of the report. Opportunity for improvement is as follows

- Intended use of environmental accounting should be clarified. The feedback from the head office to sites and a comparison between each site needs to be more visible.
- Adequate training is needed for all involved persons, including the responsible person, because it is difficult for personnel to understand the Ricoh environmental accounting guideline in a short training course.

3. Improvement practice in 2002

1. It was well appreciated as a step forward that environmentally sensitive substances, especially lead and hexavalent chromium, contained in the products have been quantified for the Ricoh group since 2002 and disclosed in the report.

4. Internal review

Responsibility for the report was segmented. Therefore overall responsibility of the report, corrective action and continual improvement need to be defined. The internal data review like the one for the Ricoh Type III environmental declaration management system should be included in the system.



- Furthermore, a description of soil and underground water contamination survey and cleanup activity is specific. It shows Ricoh's positive attitude towards cleanup activity.
2. It was well appreciated that environmental impact reduction activity has been on line toward the goals set by Ricoh.
 - Amount of environmentally sensitive substances out of products in operation
 - Product recycle and resource recovery rate of used product
 - Environmental impact such as CO₂
 - Recycle paper sales ratio
3. It was well appreciated that Environmental Management System implementation levels at RC and REI where BVQI conducted verification are very mature.



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- Ricoh Group Sustainability Report has been independently verified by Bureau Veritas Quality International (BVQI) to ensure the reliability of the data gathering used in preparing the report.



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