RICOH

RICOH GROUP SUSTAINABILITY REPORT 2005 (ENVIRONMENT)

Earning the public's trust; Activity reports from 3 perspectives— "environment" "corporate social responsibility" and "economy"

Being a good corporate citizen means striving to be a valued and respected member of society by contributing to its sustainable growth. To this end, the Ricoh Group believes in being outstanding in all areas of the environment, the economy, and corporate social responsibility as well as openly communicating its activities.

Starting last year the Ricoh Group began publishing information on its activities in reports written from three different perspectives: the environment, the economy, and corporate social responsibility.

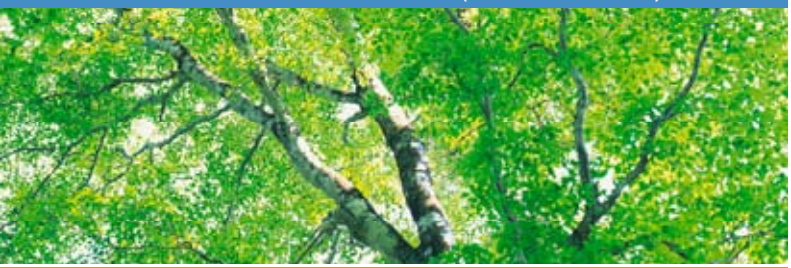
This report provides our shareholders, customers, and other stakeholders with information on our sustainable environmental management policies and performance in fiscal 2004, to facilitate a better understanding of what we do and how we work.

How to Obtain Ricoh's Corporate Information:

- **Sustainable environmental management**
  http://www.ricoh.com/environment/index.html
- **Corporate social responsibility**
  http://www.ricoh.com/csr/
- **IR (for shareholders and investors)**
  http://www.ricoh.com/IR/
- **Social contribution (Japanese language only)**
  http://www.ricoh.co.jp/kouken/

Sustainability Report (Environment) and Other Reports

SUSTAINABILITY REPORT (ENVIRONMENT)



SUSTAINABILITY REPORT (CORPORATE SOCIAL RESPONSIBILITY)

SUSTAINABILITY REPORT (ECONOMY)

◎ Editorial policy of the Ricoh Group Sustainability Report (Environment) 2005

The Ricoh Group aims to promote sustainable environmental management that contributes to environmental conservation while generating profits. This report provides information on the concept of, and specific measures and activities for, sustainable environmental management as well as on environmental accounting in an easy-to-understand manner in order to facilitate communication with society and to earn its trust.

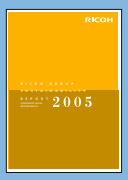
Cover photograph: Australian sea lions

Australian sea lions live on the sandy beaches of islands in the south and southwest of Australia. Because they are decreasing in number, these sea lions are designated as a protected species by the South Australian government.

Sustainability Report (Environment)

- Concept of sustainable environmental management
- Improving our products
- Improvements made at business sites
- Basis for sustainable environmental management
- Social contribution of environmental conservation/Environmental communication

Sustainability Report (Corporate Social Responsibility)



- Concept of CSR
- Integrity in Corporate Activities
- Harmony with the Environment
- Respect for People
- Harmony with Society

Annual Report

- Management policy
- Management results
- Financial status

http://www.ricoh.com/IR/

Target readers

This report is prepared for all present and future stakeholders of the Ricoh Group's sustainable environmental management. Activities in which readers might be interested are explained in the column FOCUS for effective communication.

Policy for information disclosure

Disclosing information worldwide

Environmental problems are a global issue, and therefore it is very important to act in close concert with the individual countries and communities in which the Ricoh Group operates in tackling environmental issues. This report describes the Ricoh Group's sustainable environmental management activities that are based on global partnerships.

Disclosing financial information

To successfully carry out sustainable environmental management, the Ricoh Group endeavors to improve its management system by looking at all aspects of management from an environmentally-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 through its environmental accounting.

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.

Earning the public's trust

Corporate entities should now strive to assume corporate social responsibility in addition to playing their essential roles of increasing corporate values and pursuing profitability. In terms of corporate social responsibility, companies are required to focus on legal compliance, cope with public needs, define ambitious goals and take positive and responsible actions to attain those goals, and continue to find new added values, thereby earning the public's trust. We strive to promote social responsibility-driven management as a part of our corporate value as well as engage in global corporate expansion to contribute to the development of a sustainable society.

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 the life-sustaining abilities 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 urgent issue that the whole of mankind faces. We must be committed to restoring the Earth to its full capacity, and pass this 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 modify our corporate activities and lifestyles to reduce the impact our society as a whole has on the global environment to a level that the planet can cope with.

Continuous environmental conservation activities

Based on this idea, the Ricoh Group has for a long time taken it upon itself as a global citizen to conduct environmental conservation activities on a continuous basis with the participation of more people. Companies can continue an activity only if they themselves survive, grow, and develop. We therefore need to gain new economic values through environmental conservation activities. We define sustainable environmental management as the management of a company that contributes to environmental conservation and generates economic values 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 environmental management.

Commitment to sustainable environmental management through the development of environmental technologies and activities conducted by all employees

To improve sustainable environmental management, we have incorporated our "environmental viewpoint" into all aspects of our management. Also, to limit the environmental impact of our corporate activities to a level that the Earth can deal with, we are conducting environmental management and improvement activities on a daily basis. We market environmentally-friendly products to the public aggressively based on the development of environment-related technologies, and thus, potentially reduce our environmental impact indirectly through our customers.

Environmental conservation activities should not be conducted only by employees in development and manufacturing departments. All our employees, including those in business planning and marketing, have some impact on the natural environment as a result of their work. Thus 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 to organize their workplaces to have less impact on the environment. These activities are expected to spread to business partners, customers, and employees' families all over the world. With this in mind, the Ricoh Group is strongly supporting the environmental conservation activities of its employees.

Through these measures, the Ricoh Group is committed to continuous environmental conservation activities to improve sustainable environmental management.

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 has been found to depend mainly on its recycling-based ecosystems. In recent years, due to the destruction of the forests that provide habitat for a wide variety of creatures, the planet's vital link to its 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 with a long-term perspective

In order to limit the environmental impact we have on the Earth to a level that the natural environment can deal with, what kind of changes should we make in our attitudes and actions? All global citizens, including national and local governments, companies, citizen groups, and individuals, need to be aware of their own environmental impact. Moreover, it is important to discuss the ideal society we pursue and aggressively reduce our environmental impact by cooperating with and learning from each other to realize our ideals. The Ricoh Group describes its long-term vision of the ideal society as a "Three P's Balance." After understanding what needs to be done to move closer to the ideal, concrete goals and action plans for promoting sustainable environmental management will be established. With the launch of the current fiscal year's environmental action plan—yet another in a series of such action plans—the Ricoh Group lends its weight to the development of a sustainable society by demonstrating through its own actions that a company can conduct environmental conservation activities continuously through sustainable environmental management and by encouraging more people around the world to participate in developing a sustainable society.

Masamitsu Sakurai
Chairman of the Board,
President and Chief Executive Officer

桜井正光

To our readers

Sustainability Report 2005 outlines the activities that the Ricoh Group is conducting on a global scale to contribute to the development of a sustainable society through sustainable environmental management and by solving global environmental problems involving all people around the world. We want to discuss global environmental problems with many people throughout the world and we hope that this report will help as many of you as possible to discover the breadth of the Ricoh Group's concepts for environmental measures. We welcome your feedback to further improve our sustainable environmental management in terms of quality and effectiveness.

Structure of the Report and Overall Picture of Sustainable Environmental Management

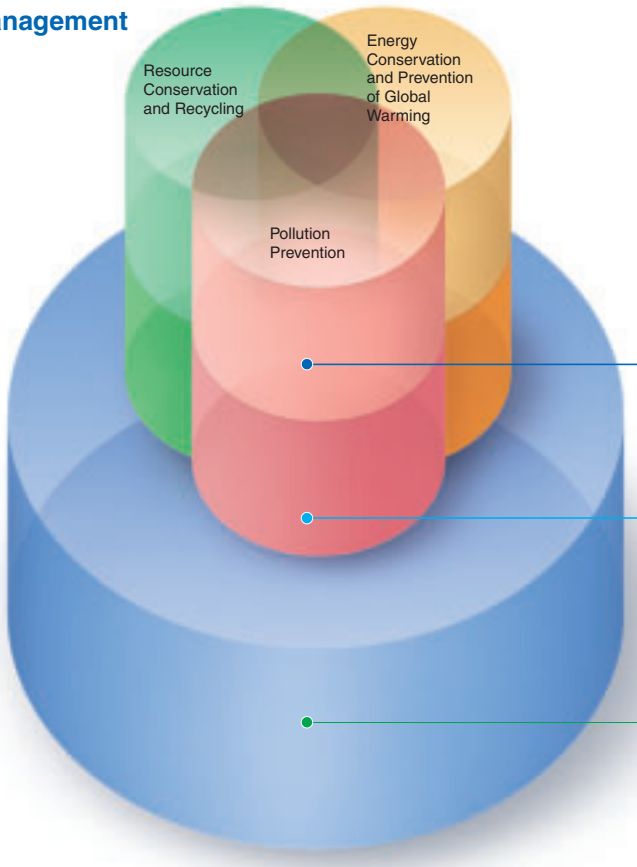
How the Ricoh Group promotes sustainable environmental management is outlined based on its overall picture (basis and three pillars).

This page and the next provide an outline of the entire structure of the report and major awards and recognition the Ricoh Group received in fiscal 2004 as well as brief descriptions of the content.

Overall Picture of the Ricoh Group's Sustainable Environmental Management (Structure of the Report)

● **Structure of the Report**

This report is structured in the same way the general picture of the Ricoh Group's sustainable environmental management is structured. The report begins with **the concept of sustainable environmental management** and goes on to explain **improving our products (three pillars)**, **improvements made at business sites (three pillars)**, and **the basis for sustainable environmental management**.



■ Major Awards and Recognition Ricoh Received in Fiscal 2004

Ricoh Ranks First in *Nihon Keizai Shimbun*'s Corporate Environmental Management Level Survey

Ricoh ranked first in *Nihon Keizai Shimbun*'s 8th Corporate Environmental Management Level Survey in the manufacturing category for the first time in four years. Ricoh achieved equally high scores in all of the seven survey items, including resource recycling and product countermeasures. (December 6, 2004)

Awarded the Minister of Economy, Trade and Industry Prize (Energy Conservation Month)

Ricoh Gotemba Plant won the top prize, the Minister of Economy, Trade and Industry Prize (electrical division), for Energy Conservation Month in recognition of its energy saving efforts. (February 9, 2005)

Ricoh Stocks Incorporated in Eco Funds and SRI Funds

In Japan, Ricoh's stocks are incorporated in more than 10 eco funds and SRI funds. Also, the Morningstar Socially Responsible Investment Index has included Ricoh since its establishment in 2003. In addition, Ricoh has been a constituent member of the Dow Jones Sustainability Indexes (DJSI) for three consecutive years and of the FTSE4Good Global Index for two years in a row. The latter index is published by FTSE International Ltd., a joint venture between the UK Financial Times and the London Stock Exchange.

Ricoh Given World's Highest Rating in oekom's Environmental Ranking

Ricoh was given the highest rating for corporate social responsibility in the category of IT/computers, peripherals, and office electronics in 2004/2005 by oekom research AG of Germany. (February 2, 2005)

Ricoh Given AAA in TECO's Environmental Rating

Ricoh received a AAA, the highest environmental rating, from Tohmatsu Evaluation and Certification Organization (TECO) Japan. The rating, which involved 501 companies, was based on the companies' fiscal 2004 environmental reports and information disclosed on their official websites. (March 24, 2005)

The Ricoh Group's Concept of Sustainable Environmental Management is to simultaneously achieve environmental conservation and profits.

The Ricoh Group's sustainable environmental management means simultaneously achieving environmental conservation and profits. This policy is carried out through development of environment-oriented technologies and in activities conducted by all employees. Initiatives have been taken in the three areas of energy conservation and prevention of global warming, resource conservation and recycling, and pollution prevention for both products and business sites. To efficiently advance these activities, a basis for sustainable environmental management was established.

<Reference pages>

- Pursuing the Ideal Society "Three P's Balance" ····· Page 7
- Concept of a Recycling-based Society "The Comet Circle" ····· Page 8
- Promotion of Sustainable Environmental Management ····· Page 9
- Environmental Action Plan Ending in Fiscal 2005 ··· Page 11

Actions regarding the Three Pillars of Products

○ Concept of Product Development

Page 15

1. Energy Conservation and Prevention of Global Warming

The world's first high-speed multifunctional copiers that can recover from standby mode within 10 seconds contribute to energy conservation by customers. Page 19

2. Resource Conservation and Recycling

Sales of recycled copiers are promoted through the expansion of the number of recycled copier models available. Page 23

3. Pollution Prevention

RoHS Directive-based products were introduced, which helps promote the total elimination of environmentally sensitive substances contained in the products. Page 27

Actions regarding the Three Pillars of Business Sites

1. Energy Conservation and Prevention of Global Warming

By setting goals higher than those in the Kyoto Protocol, we advance energy conservation at production lines. Page 33

2. Resource Conservation and Recycling

Zero-Waste-to-Landfill activities are being carried out at not only major production sites but also non-production sites in various countries. Page 39

3. Pollution Prevention

The examination and purification of soil and underground water, which were conducted only at production sites, are now being carried out at non-production sites. Page 43

Basis for Sustainable Environmental Management

Environmental Management System

The Ricoh Group promotes participatory sustainable environmental management by all employees based on the Plan-Do-Check-Action (PDCA) cycle for the entire Group, including each business site and division. Page 47

Sustainable Environmental Management Information System

This system supports the decision-making process concerning sustainable environmental management, and promotes the environmentally conscious design of products. Page 49

Eco Balance

The Eco Balance data on environmental impacts caused by overall business activities are utilized for establishing long-term targets and action plans. Page 51

Environmental Accounting

The Group aims to establish an environmental accounting system to evaluate sustainable environmental management and support managerial decision making. Page 53

Green Partnership

The Group continues to promote effective environmental conservation through partnerships with suppliers and customers. Page 57

Environmental Education/Environmental Awareness Building

We are conducting awareness-building activities for our employees so that they realize and perform their duties as global citizens and take initiatives in promoting sustainable environmental management. Page 61

Social Contribution of Environmental Conservation

Each employee, and the Ricoh Group as a whole, is engaged in environmental conservation activities as a global citizen. Page 63

Environmental Communication

We promote communication in good faith to expand environmental conservation activities. Page 71

"FOCUS"

Activities of the Ricoh Group that may be of particularly high interest to readers are reported in the feature page "FOCUS."

FOCUS–1

Page 31

Chemical Substance Management in Cooperation with Suppliers

FOCUS–2

Page 41

Zero-Waste-to-Landfill Activities at Outside Japan Production Sites

FOCUS–3

Page 59

Building a Sustainable Environmental Management Model of Sales Companies in Japan

FOCUS–4

Page 69

Environmental Volunteer Leader Development Program in Japan

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

The purpose of environmental conservation activities is to reduce environmental impact to a level that Earth's self-recovery capability can deal with it and sustain the global environment. The Ricoh Group, by considering how the relationship among the three P's (planet, people, and profit) in environmental, social, and economic activities has changed over time, defines the kind of society we should pursue and carries out its responsibility as a company to create such a society.

Society and the Global Environment in the Past

In the past, the environmental impact caused by society was kept within the limit of the global environment's self-recovery capability. After the Industrial Revolution in the 18th century, however, the world entered an age of mass production, mass consumption, and mass disposal, which significantly increased environmental impact. At the end of the 20th century, some people began to warn against a deteriorating global environment and its impact on human society. Today, companies that are not seriously committed to environmental conservation cannot gain support from society.

Current Efforts by Society and Businesses

Today, people are paying more attention to activities that reduce damage to the global environment, including the sorting of waste, recycling, and prevention of global warming. Manufacturers face such challenges as promoting smaller products with longer lifecycles, energy conservation, and resource recycling, as well as providing the maximum benefit to society and companies with minimum resources. Global companies as well are expected to support and promote the awareness of environmental conservation in developing countries and regions so that they can achieve economic progress with minimum environmental impact. Another important issue is to increase the self-recovery capability of the natural environment by such efforts as improving forest ecosystem conservation.

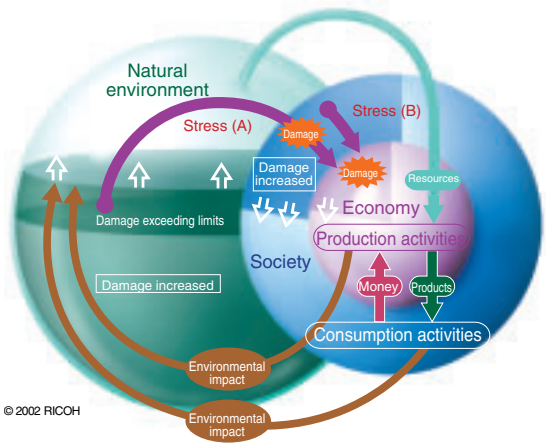
To Achieve the Ideal Society

To keep environmental impact within the self-recovery capability of the natural environment, setting specific goals for the prevention of global warming, the conservation of resources, and the prevention of pollution is important. The Ricoh Group has adopted the Year 2010 Long-term Environmental Goals[1] and the Environmental Action Plan from 2005[2] as milestones on the path to attaining its long-term vision of the ideal sustainable society. To preserve the global environment for future generations, we need to take action with greater environmental awareness and clearer goals.

1. See Page 9. 2. See Page 11.

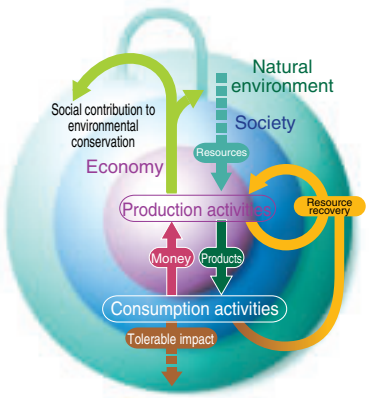
Three P's Balance™: Representing the Relationship between the Global Environment and Society

■ Status quo



Our environmental impact on the Earth has exceeded the planet's life-sustaining abilities as well as its recovering ability.

■ Pursuing the Ideal Society



Environmental impact remains within the recovering ability of the Earth.

For more information, please visit http://www.ricoh.com/environment/management/earth.html.

The Ricoh Group contributes to the development of a sustainable, recycling-based society based on the Comet Circle concept.

The Comet Circle represents a sustainable society that recirculates resources, the kind of society we pursue. Circles in the diagram indicate partners we work together with to achieve a recycling-based society. The upper routes represent arteries of the system, and the lower routes veins of the system. Resources taken from the natural environment by materials suppliers shown at the upper right are processed into products, moving from right to left along the upper route, and are finally delivered to users (customers). The end-of-life products move from left to right along the lower route. The Ricoh Group contributes to the development of a recycling-based society by focusing on the following five activities to make the Comet Circle work effectively.

(1) Identifying and Reducing Environmental Impact at All Stages

All parties involved, i.e., the Ricoh Group, suppliers, customers, and recycling companies, identify the degree of environmental impact at all stages, including the transportation stage, by using a sustainable environmental management information system and strive to reduce overall impact by promoting the development of environmental technologies as well as recycling and recovering products.

(2) Putting 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 reusing and recycling products on the inner loops of the Comet Circle with an aim to minimize the resources, cost, and energy needed to return used products to the state of highest economic value.

(3) Promoting a Multitiered Recycling System

Repeated recycling to the greatest extent possible (i.e., multitiered recycling) reduces the consumption of new resources and the generation of waste. The Ricoh Group is promoting the effective use of resources by establishing a system in which products recovered from the market are supplied to the market again.

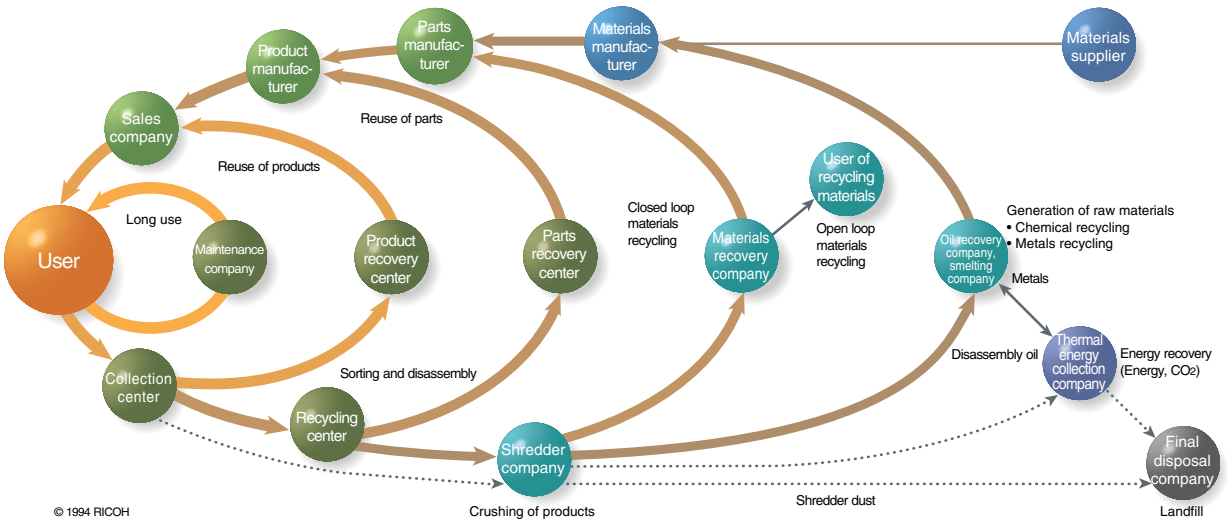
(4) More Economically Rational Recycling

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) Establishing a Partnership at Every Stage

The Ricoh Group strives to reduce environmental impact in all of its business areas in an economically rational way through partnerships with parties at all stages. The initiatives include the total elimination of environmentally sensitive substances in cooperation with materials and parts manufacturers, improved efficiency in transportation, green marketing, and a reduction in recycling costs and the environmental impact generated by recycling. By disclosing information and know-how garnered through these activities and working with local communities, the Ricoh Group helps reduce the environmental impact of society as a whole.

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



For more information, please visit http://www.ricoh.com/environment/management/concept.html.

The Ricoh Group sets goals using absolute values to reduce the environmental impact of its entire business activities.

Establishment of goals based on "the ideal society"

To conserve the global environment and achieve a sustainable society, it is necessary to limit environmental impact to a level that is within the self-recovery capabilities of the natural environment. The world has now embarked on efforts to achieve a sustainable, recycling-based society. This trend is quite evident in the adoption of the Kyoto Protocol, which came into effect in 2005, and recent developments relating to environmental laws and regulations in nations around the world. However, our goal is not just to comply with these conventions and regulations. Looking ahead as far as we can and reviewing the current situation from a point in the future, we need to share our vision of the ideal society and global environment, set target values to realize our ideals, and aggressively promote environmental conservation activities. The Ricoh Group has described its long-term vision of the ideal society it pursues by its "Three P's Balance"* and set concrete target values as a milestone on the journey to these ideals.

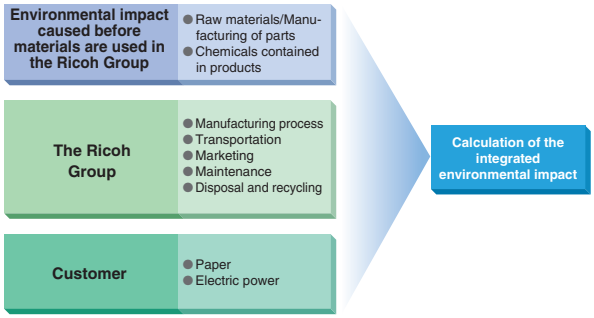
*See page 7.

Reducing environmental impact using absolute values

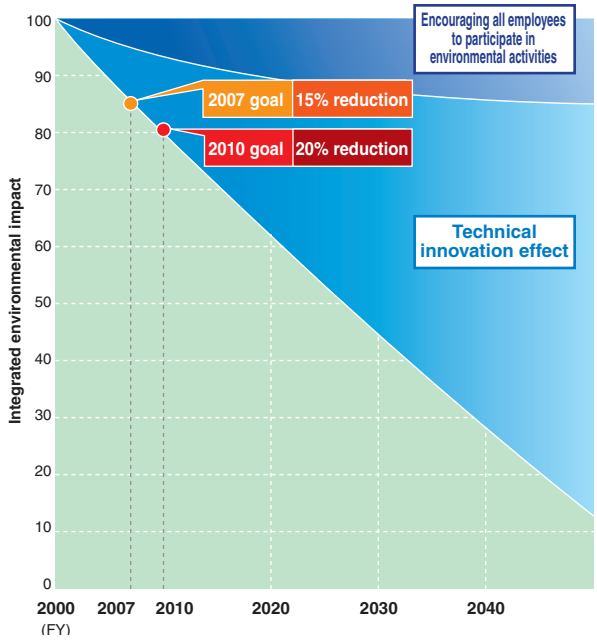
The first step in conserving the global environment is to comprehensively assess the impact that the use of energy and chemical substances have on the global environment and to determine reduction goals accordingly. If reduction of CO_2 and resource conservation is promoted separately, environmental impact reduction goals might be achieved in a defined area, but the environmental impact might increase more than the amount reduced in other areas or processes. Also, relative goals set based on efficiency such as units and factors alone might not be effective for environmental conservation in practical terms. Therefore, it is necessary to set goals using "absolute values" for environmental impact as well. Also, environmental impact should be reduced in our entire business activities, covering all areas of collection of resources, manufacturing of parts by suppliers, manufacturing of products, transportation, marketing, use of products by consumers, and recycling. Based on these ideas, in fiscal 2004, the Ricoh Group established the Year 2010 Long-Term Environmental Goals which state reduction goals for "integrated environmental impact".* These goals cover all environmental impact caused in all business areas. The Group aims to reduce absolute values by 20% over the figures in fiscal 2000. The Environmental Action Plan that forms part of the medium-term management plans for fiscal 2005 through 2007 was prepared based on the Year 2010 Long-Term Environmental Goals. The Ricoh Group also plans to reduce the integrated environmental impact by 15% over the figures in fiscal 2000 by the end of fiscal 2007.

* Integrated environmental impact is obtained by integrating all environmental impact caused by CO_2 emissions, use of chemical substances, etc. Currently, the Ricoh Group is calculating the integrated environmental impact using EPS, which is an integrated analysis method developed in Sweden. The unit is the ELU. The integrated analysis method used is subject to change as necessary.
As for EPS, See page 51.

Reduction Areas of Environmental Impact (Eco Balance)



Setting the Year 2010 Long-Term Environmental Goals



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

To continue its efforts to reduce environmental impact from a long-term perspective, the Ricoh Group needs to continue business and grow as a company by promoting sustainable environmental management that generates economic values through environmental activities. In its past environmental conservation efforts, there were three stages. The Ricoh Group first went through a Passive Stage, and then a Proactive Stage, and now it is in the Responsible Stage of sustainable environmental management. In the Passive Stage, the Ricoh Group coped with social pressures by dealing with laws and regulations and competing with other companies. In the Proactive Stage, however, it began to take voluntary actions to reduce the environmental impact of its business activities and products with a sense of mission as a global citizen. In the current Responsible Stage, the Ricoh Group aims to achieve continuous environmental conservation by pursuing economic values while aggressively reducing the environmental impact of its business activities.

Working towards the ideal society

To move closer to the ideal society, the Ricoh Group has improved the level of sustainable environmental management by developing environmental technologies and encouraging all employees to participate in environmental activities. Each employee in the Group is encouraged to have a strong environmental awareness and set higher goals voluntarily. The Ricoh Group will continue to work to realize the ideal society it is pursuing by aggressively developing environmental technologies, encouraging all employees to participate in environmental activities, and providing customers around the world with products and services with less environmental impact.

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 pressures • Laws and regulations • Competition • Customers	Carrying out its mission as a global citizen • Self-imposed responsibility • Voluntary planning • Voluntary activities	Simultaneously achieving environmental conservation and profits
Activities	Passive measures to meet laws and regulations, competing with other companies, and satisfying customer needs	1. High-aiming, aggressive activities to reduce environmental impact • Energy conservation • Resource conservation and recycling • Pollution prevention 2. Improved awareness of all employees	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. Sustainable environmental management information system

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

A new Group environmental action plan starts in fiscal 2005

Review of the environmental action plans for the past three years

The Ricoh Group has engaged in activities to attain environmental action plans based on the 14th Medium-term Management Plan for the past three years. The major results obtained were the development and introduction of energy-saving technologies to copiers, the marketing of products in which no chemical substances (lead, hexavalent chromium, cadmium, and PVC) are contained, a rapid improvement in collection rates and the resource recovery of used products in and outside of Japan, and a drastic reduction in the volume of use and emissions of environmental-sensitive substances in the manufacturing process. Through these activities, the Group succeeded in reducing the integrated environmental impact* in fiscal 2004 by 8.6% over the figures for fiscal 2000. *See page 9.

Start of a new environmental action plan to realize sustainable environmental management

The Ricoh Group started a new environmental action plan in fiscal 2005. The Group promotes activities that realize the sustainable environmental management based on concrete action plans by setting target values for several years to come. In making the new environmental action plan, however, the Ricoh Group used the back-casting method to set target values as milestones on the journey to its final goals and the ideal global environment that we should pursue.* Based on the estimation that its business will expand by 8% or more a year, the Ricoh group plans to reduce environmental impact by 15 % by fiscal 2007 and 20% by 2010 over the figures for fiscal 2000.

*See page 7.

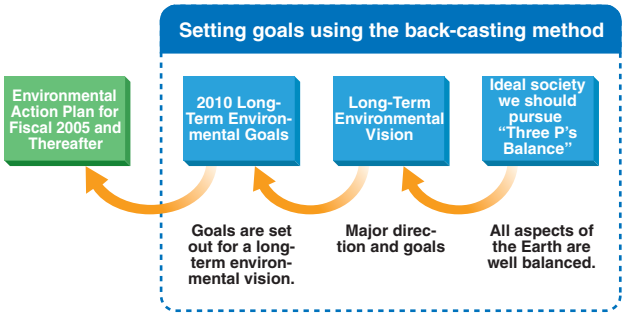
Important measures in the new environmental action plan

In carrying forward the new environmental action plan, the Ricoh Group will place emphasis on such measures as promoting the reduction of CO_2 emissions at a higher level than the goal mentioned in the Kyoto Protocol, improving the sustainable environmental management system, developing energy-saving technologies, promoting the marketing of recycled products, and developing new technologies to contribute to resource conservation.

Clarifying the progress of achieving environmental conservation while generating profits

The Ricoh Group, as a global citizen, should continue to engage in environmental conservation activities. On the other hand, to achieve continuous environmental conservation, the Group, as a company, needs to pursue economic values through those activities. The Ricoh Group conducted a simulation to measure the balance between environmental conservation costs and reducing environmental impact while generating profits by using the environmental accounting system for each measure in the new environmental action plan. The Group will continue to manage environmental goals based on the environmental accounting results. According to the environmental action plan for fiscal 2005 and thereafter, the Ricoh Group will promote environmental activities by clarifying the progress of achieving environmental conservation while generating profits.

How to Set Environmental Goals



Considerations in Preparing an Environmental Action Plan

The Ricoh Group's Environmental Action Plan (FY 2005–2007) *Items for which any fiscal year is not mentioned are those planned to be achieved in fiscal 2007.

1 Improving environmentally-friendly functions and promoting environmental technological development

1) Develop new environmental technologies. (*Details of the progress of new technologies are not currently released.)

① Develop new environmental technologies to reduce resource use.
② Develop new environmental technologies to realize a society that is less dependent on fossil fuel.

2) Improve environmentally-friendly functions.

① Promote the use of energy-saving technologies in products.
- Achieve Ricoh's energy-saving goals.

② Promote the use of resource-saving technologies in products.
- Improve the quantity of reusable parts used by a factor of at least five (compared to fiscal 2003 figures in Japan).
- Increase the quantity of recycled plastics used to 1,000 tons or more.

③ Observe Ricoh standards that cover environmentally-sensitive substances emitted by products.
- Observe Ricoh standards that cover such substances as ozone, dust, and VOC.

2 Promote green marketing.

① Increase the number of recycled copiers marketed.
- Increase the number of recycled copiers marketed by a factor of at least 10 (compared to fiscal 2003 figures in Japan).

② Promote the green marketing of paper.
- Improve the recycled pulp use rate for paper products to 60% or more (in Japan).

3 Environmental conservation activities that improve the effect on cost at plants and offices

1) Promote energy conservation at business sites.

① Reduce total amount of CO_2 emitted as a result of business activities.
- Reduce CO_2 emissions by 12% by fiscal 2010 (Ricoh and manufacturing subsidiaries in Japan, compared to fiscal 1990 figures).
- Reduce CO_2 emissions by 10% by fiscal 2010 (manufacturing subsidiaries outside of Japan, compared to fiscal 1998 figures).
- Reduce CO_2 emissions by 4% (Ricoh and manufacturing subsidiaries in and outside of Japan, compared to fiscal 2000 figures).
- Reduce CO_2 emissions by 4% (non-manufacturing subsidiaries in Japan, compared to figures in the base fiscal year set at each company).

2) Promote resource conservation at business sites.

① Reduce generated waste.
- Reduce generated waste by at least 3% (Ricoh and manufacturing subsidiaries in and outside of Japan, compared to fiscal 2000 figures).
- Reduce generated waste by the ratio calculated by multiplying the number of years from the base fiscal year to fiscal 2007 by the yearly rate (2%) (non-manufacturing subsidiaries in Japan; the base fiscal year is set at each company).

② Improve the waste recycling rate.
- Improve the waste recycling rate to at least 95% (non-manufacturing subsidiaries in Japan).

③ Reduce water consumption.
- Reduce water consumption to a level that is below the results of fiscal 2000 (Ricoh production sites and manufacturing subsidiaries in and outside of Japan).

④ Reduce paper consumption.
- Reduce paper consumption by at least 10% (Ricoh, manufacturing and non-manufacturing subsidiaries in Japan, and manufacturing subsidiaries outside of Japan, compared to fiscal 2002 figures).

3) Promote pollution prevention at business sites.

① Completely eliminate the use of chlorine organic solvents.
- Completely eliminate chlorine organic solvents used in manufacturing Organic Photo Conductors at manufacturing contractors as well as at Ricoh manufacturing divisions.

② Reduce greenhouse gas emissions (except CO_2).
- Reduce greenhouse gas emissions (except CO_2) in the semiconductor business division by 15% (compared to fiscal 2000 figures).

③ Examine and improve soil and underground water at Ricoh's non-production sites and leased land.
- Complete the examination of soil and underground water at Ricoh's non-production sites and leased land (Ricoh and affiliates in and outside of Japan).
- Make and implement plans to improve sites where pollution is detected.

4 Improving the sustainable environmental management system and making it more consistent through systems integration

1) Improve the sustainable environmental management system.

① Improve the ISO 14001 system.
- Integrate the sustainable environmental management system with that of Ricoh (in fiscal 2005) and the Ricoh Group (in fiscal 2007).

② Create a system of managing chemical substances contained in products.
- Create and enforce a system of managing chemical substances contained in Ricoh Group products (in fiscal 2005).

③ Improve the sustainable environmental management information system.
- Introduce the information system, which manages real-time information on the environmental impact caused at resource processing sites, to various business divisions other than the imaging equipment division.
- Introduce the information system, which manages real-time information on the environmental impact caused by transportation processes, to overseas transportation processes.

5 Promoting environment-conscious social contribution activities to preserve the ecosystem

① Promote forest conservation activities and environment-conscious social contribution activities to preserve the ecosystem.
- Promote environment-conscious social contribution activities to preserve the ecosystem (overseas regional headquarters; Ricoh production sites, manufacturing subsidiaries, and marketing subsidiaries in Japan; Ricoh Logistics Systems Co., Ltd.; Ricoh Leasing Company, Ltd.; and Ricoh Sanai Services).

Fiscal 2002–2004 Environmental Action Plan and its Results

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

1 Improving environmentally-friendly functions and promoting technological development*	1) Promote the use of energy-saving technologies in products. Page 19 • Achieve Ricoh's energy-saving goals.
	2) Promote pollution-preventing measures with regard to products. Page 27 • Completely eliminate the use of environmentally-sensitive substances (i.e., lead, hexavalent chromium, polyvinyl chloride, and cadmium) in products. • Reduce noise levels by 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. Page 22 • Develop practical application technologies for alternative paper and rewritable paper.
2 Increasing 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).
	2) Improve the collection rate of used products and toner cartridges by at least 10% in terms of the number of units collected (the Ricoh Group as a whole, compared to fiscal 2000 figures.) Page 23
	3) Increase the number of resource-recirculating-type products marketed by a factor of at least 20 (in Japan, compared to fiscal 2000 figures).
	4) Improve the resource recovery rate for used products and toner cartridges. Page 23 • The resource recovery rate for equipment and toner cartridges rises to 98% (in Japan). • The resource recovery rate for equipment and toner cartridges rises to 85% (in Europe). • The resource recovery rate for equipment rises to 95% and that of toner cartridges to 100% (in the Americas). • The resource recovery rate for equipment rises to 85% and that of toner cartridges to 85% (in the Asia-Pacific region).
3 Environmental conservation activities at plants and offices*	1) Reduce the amount of energy used. Page 33 • Reduce CO_2 emissions at plants and offices by 62% in terms of CO_2 emissions per sales unit and by 13% in terms of total amount emitted (Ricoh in Japan, compared to fiscal 1990 figures). • Reduce CO_2 emissions by 20% per sales unit (all Ricoh business sites in Japan, compared to fiscal 2000 figures). • Reduce CO_2 emissions by 2% (the Ricoh Group in Japan, compared to fiscal 2000 figures). • Reduce CO_2 emissions by 2% (Ricoh Group manufacturing subsidiaries outside of Japan, compared to fiscal 2000 figures).
	2) Promote pollution prevention. Page 43 • Reduce environmentally-sensitive substances (Ricoh Group's target substances to be reduced) to 8% of those used and 50% of those emitted (Ricoh and Ricoh Group manufacturing subsidiaries in Japan and Ricoh Group manufacturing subsidiaries outside of Japan, compared to fiscal 2000 figures). • Completely eliminate the use of dichloromethane (Ricoh and Ricoh Group manufacturing subsidiaries in Japan and Ricoh Group manufacturing subsidiaries outside of Japan). • Restrict the increase in greenhouse gas emissions to a maximum of 1% (Ricoh and Ricoh Group manufacturing subsidiaries in Japan and Ricoh Group manufacturing subsidiaries outside of Japan, compared to fiscal 2000 figures). • Reduce emissions of ozone-depleting substances by 60% (Ricoh and Ricoh Group manufacturing subsidiaries in Japan and Ricoh Group manufacturing subsidiaries outside of Japan, compared to fiscal 2000 figures).
	3) Promote resource conservation and recycling. Page 39 • Reduce generated waste by at least 13% (Ricoh and Ricoh Group manufacturing subsidiaries in Japan and Ricoh Group manufacturing subsidiaries outside of Japan, compared to fiscal 2000 figures). • Improve the waste recycling rate to at least 90% (Ricoh Group non-manufacturing subsidiaries in Japan). • Reduce water consumption by at least 10% (Ricoh and Ricoh Group manufacturing subsidiaries in Japan and Ricoh Group manufacturing subsidiaries outside of Japan, compared to fiscal 2000 figures). • Reduce paper purchase by at least 10% (Ricoh and Ricoh Group manufacturing and non-manufacturing subsidiaries in Japan, Ricoh Group manufacturing subsidiaries outside of Japan, compared to fiscal 2000 figures).
4 Promoting Green Partnerships to increase the number of customers and reduce costs*	1) Promote green marketing. • Improve the recycled pulp use rate for paper products to 60% (in Japan).
	2) Promote green procurement. Page 31 • Identify the environmental impact at suppliers' sites to set goals for reducing that impact (Ricoh Group purchasing divisions). • Completely eliminate designated environmentally-sensitive substances in the suppliers' manufacturing process (Ricoh Group purchasing divisions).
	3) Promote green purchasing. • Improve the green purchasing rate (for office supplies) to 100% (the Ricoh Group in Japan).
5 Improving the sustainable environmental management system	1) Establish an environmental management indicator. Page 54
	2) Construct a companywide audit system.
	3) Construct an environmental management information system. Page 49
6 Promoting environment-conscious social contribution activities	1) Promote forest conservation activities to preserve the ecosystem (the Ricoh Group). Page 63

* Results for items 1 through 4 were reviewed by a third party.

Results

▶ The imagio Neo 602/752ec series of high-speed multifunctional digital copiers (with a copy productivity of 60/75 pages per minute) with a quick recovery function (10 seconds or less) from energy-saving mode were put on the market. With this introduction, Ricoh completed a wide-ranging energy-saving multifunctional monochrome copier lineup comprising machines with various productivities.

▶ Products in which lead, hexavalent chromium, polyvinyl chloride (PVC), and cadmium are completely eliminated were put on the market in fiscal 2004.
▶ The level of noise emitted from color copiers during operation and while on standby was reduced 3.1dB and 11.2dB, respectively.
▶ All 96 models of copiers, facsimiles, and printers marketed in fiscal 2004 follow Ricoh's standards concerning styrene, ozone, and dust.

▶ The RECO-View® IC tag sheet, which enables information recorded on IC tags to be displayed and rewritten, was put on the market. Rewritable IC tag sheets were introduced to more than 30 companies.

▶ Quantity of reusable parts used reached 3.3 times that used in fiscal 2000. Efforts will continue to make improvements.

▶ Collection rates of used products (compared to those in fiscal 2000): The collection rate of used products increased 56% worldwide, which is considerably higher than the goal that was set. Although the quantity of toner cartridges collected decreased, the collection rate (the ratio of the quantity of toner cartridges collected to the quantity of those marketed) increased by a large margin. (Collection rates increased 146% in Japan, 361% in Europe, 162% in the Americas, and 209% in the Asia-Pacific region.*) (*Compared to fiscal 2001 data)

▶ The number of resource-recycling-type products marketed reached 24.3 times that in fiscal 2000, and the goal was attained.

▶ Current status of resource recovery rate
- Equipment: 99.4%; toner cartridges: 99.6% (Japan)
- Equipment: 93.9%; toner cartridges: 96.5% (Europe)
- Equipment: 95.0%; toner cartridges: 100% (the Americas)
- Equipment: 88.4%; toner cartridges: 97.0% (Asia and Pacific)

▶ Current status of CO_2 emissions
- Ricoh in Japan: Reduced 29.7% per sales unit and 6.9% in terms of total amount emitted (compared to fiscal 1990 figures)
- Ricoh in Japan: Reduced 1.6% per sales unit (compared to fiscal 2000 figures)
- Ricoh and Ricoh Group manufacturing subsidiaries in Japan: Increased 1.5% in terms of total amount emitted (compared to fiscal 2000 figures)
  Ricoh Group non-manufacturing subsidiaries in Japan: Reduced 10.4% in terms of total amount emitted at Ricoh Logistics Systems; reduced 6.1% at Ricoh Techno Systems; reduced 10.8% at marketing subsidiaries; and increased 9.8% at Ricoh Leasing Company (compared to figures in the base fiscal year*) (* Base fiscal year: 2000 at Ricoh Logistics Systems and Ricoh Techno Systems and 2002 at marketing subsidiaries and Ricoh Leasing Company)
- Ricoh Group manufacturing subsidiaries outside of Japan: Increased 2.2% in terms of total amount emitted (compared to fiscal 2000 figures)

▶ Progress in pollution prevention (compared to fiscal 2000 figures)
- Environmentally sensitive substances used were reduced 36% and those emitted 77%.
- Dichloromethane was completely eliminated from the manufacturing process in March 2005.
- Greenhouse gas emissions other than CO_2 were reduced 20.7%.
- The emission of ozone depleting substances were reduced 88%.

▶ Progress in resource conservation and recycling (compared to fiscal 2000 figures)
- The amount of waste generated was reduced 2.5%.
- The waste recycling rate went up to 85.2–99.0%.
- Water consumption was reduced 4.7%.
- Paper purchase was reduced 14.1%.

▶ The recycled paper use rate for paper production improved to 51%. Efforts to improve the rate will be continued.

▶ A trial method using a cost table was chosen to calculate environmental impact in the mold pressing process of parts.
▶ Out of 622 suppliers of Ricoh Group in Japan, 618 submitted certificates indicating the nonuse of chlorine organic solvents.

▶ The green purchasing rate in fiscal 2004 was 99% in terms of money value.

▶ Sustainable environmental management indicators were set. A simulation to measure the effect on cost was conducted when the new environmental action plan was made out.

▶ Based on some issues identified in the sustainable environmental management system, a management systems integration plan to improve performance and streamline the process was made.

▶ The creation of a sustainable environmental management system was completed as planned in and outside of Japan.

▶ Regional headquarters took part in forest preservation projects and attained their goals. Their activities were expanded to regional sales companies and their plants.
- Europe: 1 (started in fiscal 2002)
- The Americas: 1 (started in fiscal 2003 in cooperation with Ricoh Latin America, Inc.)
- Asia and Pacific region[1]: 1 (started in fiscal 2002 in cooperation with Ricoh Australia Pty, Ltd.)
- Former China region[2]: 1 (started in fiscal 2001 and has now ended)
- Japan: 8 (started in fiscal 1999–2001), 3 (started in fiscal 1999–2001 and has now ended)

1. Asia (except Japan and China but including Hong Kong and Taiwan) and Oceania 2. China, Hong Kong, and Taiwan *Number of projects driven by regional headquarters

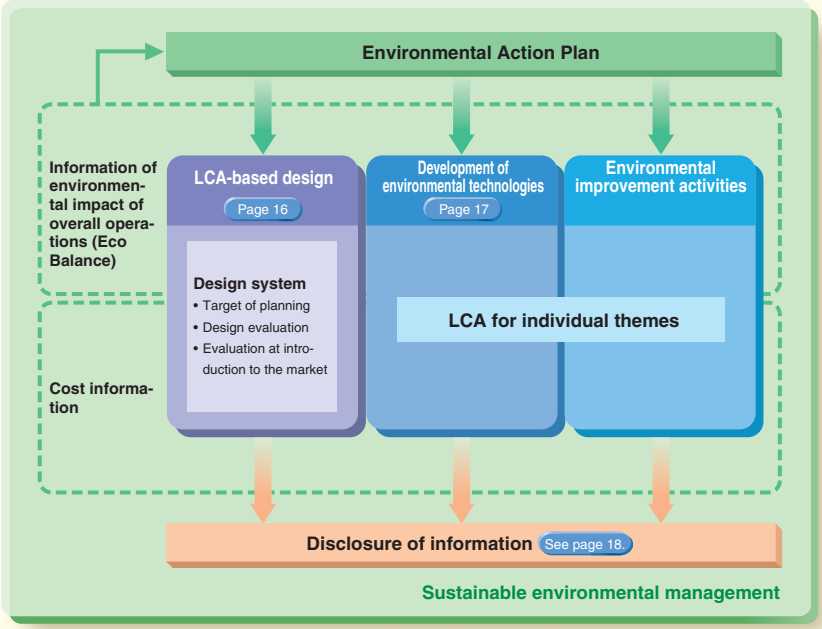
Promoting the development of environmentally conscious products by setting target values based on environmental impacts caused by overall business activities

● Concept of Product Development

The Ricoh Group uses the Plan-Do-Check-Action (PDCA) cycle in its product development to keep the integrated environmental impact[1] of all products during their life cycles below the limit at which the global environment is sustainable. First, the Eco Balance[2] data on environmental impacts caused by overall business activities are identified and utilized for establishing targets for products covered by the action plans (Plan). The design division then sets priority themes for respective models and draws up LCA-based designs[3] to achieve the targets (Do). Next, the Eco Balance data are utilized again to evaluate the achievements (Check), and the results are reflected in the next development targets (Action). The Group is also committed to developing environmental technologies that reduce environmental impact caused by its products and disclosing relevant information.

1. See page 9. 2. See page 51. 3. See page 16.

Position of LCA in Sustainable Environmental Management



● History of Improving the Environmental Performance of Products

In the 1980s, the Ricoh Group began to develop products to meet individual standards, such as noise, the chemicals contained in the products, and energy conservation. In 1990, various committees were established to reduce environmental impact through an integrated approach. These committees began studies to improve the environmental performance of all products throughout their life cycles. In 1994, the LCA study group was established. In 1998, the Ricoh Group began activities to identify the environmental impact of its overall operations using Eco Balance, and to reduce the environmental impact of processes with larger environmental impacts on a priority basis. In 2002, the Ricoh Group established an environmental action plan based on the evaluation of integrated environmental impacts. In 2003, the Group began to further improve various tools to promote LCA-based design. In 2004, Ricoh marketed products in which environmentally-sensitive substances were completely elimiated[4] in line with the company's own standards.

4. See page 28.

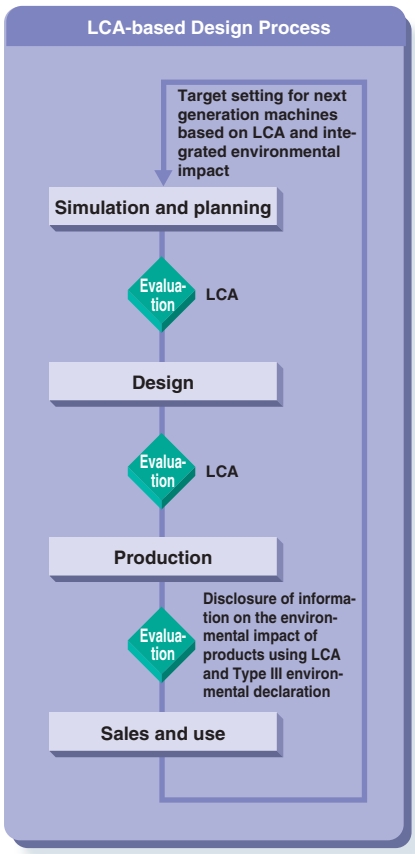
	Activities
1980s–	• The Ricoh Group begins to establish individual criteria, such as those for noise, chemicals contained in its products, and energy conservation.
1990	• Product Design Committee, Environmental Technology Committee and Eco Mark Committee established.
1994	• The concept of the "Comet Circle" completed. • LCA Study Group established. • LCA activities under individual themes to reduce the environmental impact of each product and overall operations promoted.
1998	• The concept of Eco Balance introduced. • Environmental Action Plan based on the Eco Balance prepared. • The Ricoh Group starts to build the Environmental Impact Information System.* *See page 49.
2000	• The Environmental Impact Information System completed. • The Ricoh Group begins to disclose information on environmental impact of products that was compiled based on the LCA (Type III Environmental Declaration). • The Ricoh Group begins to integrate data on environmental impacts caused by each product and by overall operations.
2002	• Environmental Action Plan prepared based on integrated environmental impacts.
2003	• The Ricoh Group clarifies the concept of LCA-based design, and begins to improve the system and tools to promote the concept.
2004	• Digital camera with an LCA-based design launched

Life Cycle Assessment (LCA)

LCA means quantitatively identifying which and how much environmental impact exists in the life cycle of a product, from the gathering of resources for the production of raw materials to manufacturing, transportation, marketing, use, maintenance, collection, recycling, and disposal. LCA may also be applied to part of the above cycle.

Promotion of LCA-based Design

LCA-based design is not a simple process of designing from the viewpoint of LCA; it is a process where targets are set to reduce the environmental impact of products throughout their life cycles. Thus, LCA-based design is a process where environmental impacts are reduced based on PDCA. To effectively reduce the environmental impacts of all its products over generations, the Ricoh Group places an importance on the "integrated environmental impact" of all products throughout their life cycles, and has established numerical targets for reduction. Thus, the Ricoh Group is making an effort to establish an LCA-based design process based on PDCA. In addition, the Group is developing a CAD system and assessment system that facilitate the design process.



TOPIX

LCA-based design for digital cameras (Caplio R1)


Caplio R1

Through LCA-based design reduced 12% of the cameras' environmental impact throughout their life cycles

Environmental impact reduction and performance improvement

The Caplio R1 is a 25mm-thick compact digital camera equipped with a 4.8× wide-zoom lens and was launched in September 2004. In addition to its improved functions, the camera's environmental impact is significantly lower than that of its predecessors.

Promotion of LCA-based design for effective environmental impact reduction

The Caplio R1 was developed with the aim of reducing 10% of its environmental impact throughout its life cycle, from material production, assembly, logistics, and usage to disposal. We focused on reducing the amount of raw materials used and power consumed. As a result, raw-material consumption was reduced 17% and power about 31.5% of those of its predecessors. Throughout their life cycles, we achieved a 12% reduction, exceeding our original target.

● A System for Efficient Promotion of LCA-based Design

CAD System for LCA-based Design

The Ricoh Group developed and operates a CAD system to avoid the erroneous designations of materials, the environmental safety of which has not been verified, or those materials that do not conform to the recycling plan, in a drawing prepared by a person in charge of design. The system is interlocked with a database that contains not only information on costs and quality of materials but also information on environmental conservation, such as the use of environmentally-sensitive substances that are prohibited by the Ricoh Group* and targeted for total elimination as well as the results of evaluations on recyclability. The Group also maintains an extensive database to share information on the total elimination of environmentally-sensitive substances and exchange opinions with those in charge of design, procurement, or any relevant divisions.

*See page 28.

Assessment System for LCA-based Design

Ricoh is developing an operational system, based on data collected by the sustainable environmental management information system, to manufacture products that are environmentally conscious throughout their life cycles. This system is utilized in environmental impact assessments by unit and by part as well as for preparing EcoLeaf Type III environmental labels to disclose LCA information. In fiscal 2004, more information on the environmental impact by material and by part, environmental impact caused by chemical substances, and environmental impact due to transportation became available. Consequently, a simulation of how a change in the material used for a part affects the environmental impact throughout the product's life cycle, for example, became possible at the design stage.

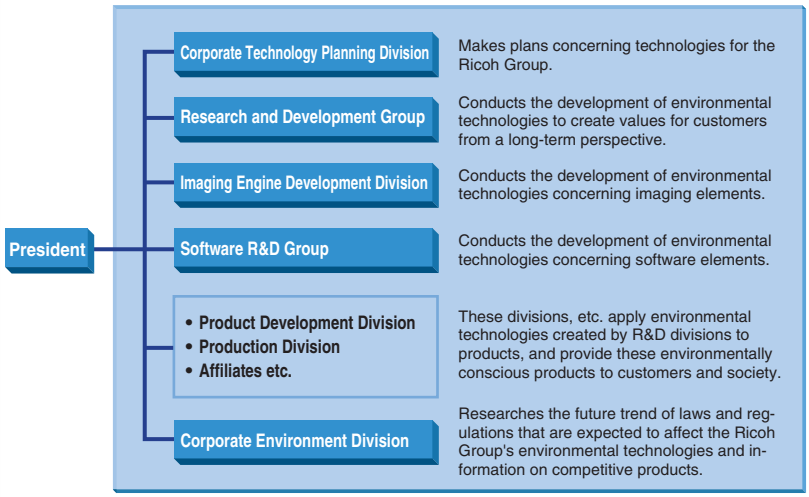
Assessment of Recyclable Design

More efficient reuse and recycling can be realized by simplifying 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 design" aimed at significantly reducing the time and cost of recycling (e.g., fewer screws used in machines and standardizing plastic materials). Ricoh also applied "recyclable design" and a "product assessment system" to its entire line of copiers, facsimiles, laser printers, and multifunctional copiers. Following the improvements made at some stages, in fiscal 2003, Ricoh implemented level 6 of its recyclable design policy.

Promotion of Development of Environmental Technologies

The development of environmental technologies is one of the most important efforts to realize sustainable environmental management. It is the basis for providing customers with "products that unobtrusively contribute to a reduction in environmental impact while in use" and for simultaneously realizing both a reduction in environmental impact and the creation of economic value. The Ricoh Group has established medium- and long-term plans for the four fields, namely, "energy conservation," "resource conservation and recycling," "pollution prevention (environmental comfort)," and "reduction in paper use in printing/copying." Not only the R&D Division but also all business divisions and affiliates are engaged in developing environmental technologies and products. In fiscal 2004, in an attempt to further drive these efforts, the Ricoh Group established its Environmental Technology Committee to share technologies among Group companies and launch new technological applications.

Structure to Develop Environmental Technologies

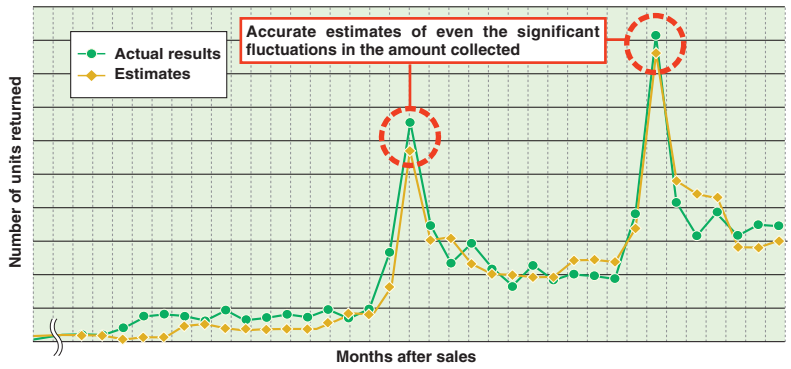


(The Ricoh Group's) Environmental Technology Committee

Estimating the Amount of Used Products Collected

In September 2004, Ricoh developed a new technology that estimates the amount of used products collected from the market. Estimates are made by sampling useful data, such as the number of employees and the number of copies produced, from a customer database. The analysis and storage of distribution data per item leads to significantly accurate estimates of the amount of used products collected. The accuracy of the estimates can be improved by correcting errors and reflecting collection results in subsequent estimates.
This technology can be used to prepare appropriate plans to manufacture and market recycled machines based on detailed estimates of the number of copies produced per model in a given region during a given length of time (monthly, semiannually, annually). In April 2005, an estimate system to be used in the manufacturing and marketing of recycled machines was established. This system is expected to bring about a range of benefits such as reducing logistics problems through streamlined collection and recovery processes.

Data on the estimated amount of used products collected (conceptual)



Studying Fuel Cells that Do not Use Fossil Fuel

In the area of new technologies, we promote the development of new forms of energy, such as fuel cells. We mounted a hybrid power generation system, which consists of direct methanol fuel cells and secondary cells, on a Ricoh GelSprinter (Gel Jet printer) and exhibited it at Eco Products 2004. Working with Tohoku University and Nagaoka University of Technology, Ricoh is also carrying out research and development on ethanol fuel cells that use biomass instead of fossil fuel.

Development of Color Rewritable Media

Ricoh, using a photochromic compound, has developed a new medium to control color development with light. When light is applied to the photochromic compound, its state changes and the wavelength of the absorbed light changes. That is, color development can be controlled by changing the light being applied. This technology may lead to the development of media such as papers and films on which color images can be rewritten several times. Rewritable media may reduce paper consumption by a significant margin.

Disclosure of Environmental Information of Products

The main purpose of disclosing environmental information of products is to inform customers of the excellent environmental performance of Ricoh's products. In addition, it is also important to inform society of Ricoh's environmental conservation activities and their results, and disclose environmental information in a positive manner. For this purpose, Ricoh is firmly committed to publicizing the results of LCA studies, technology development, and evaluation methods at academic societies and conferences. Furthermore, Ricoh is contributing to the formation of various environmental labeling in the world, and is making an effort to acquire various certifications.

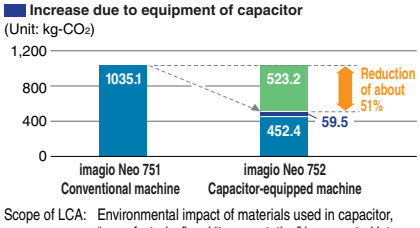
● Publication of Information at Academic Societies and Conferences

LCA of Capacitor-equipped Digital Multifunctional Copiers

Launched in fiscal 2003, the imagio Neo 752 series, high-speed multifunctional digital copiers, are equipped with Hybrid QSU, which is an integration of Ricoh's quick start-up (QSU) technology* and a capacitor, an electrical storage device. As a result, the time it takes for the machine to recover from energy-saving mode was reduced from 300 seconds to only 30 seconds. This may further encourage customers to use the energy-saving mode, and a significant energy conservation effect can be expected from the customers' side. On the other hand, the installation of a capacitor as a new device can mean additional consumption of energy and resources. In an LCA comparison between the energy/resource consumption of the imagio Neo 752 and that of an earlier model (the imagio Neo 751), however, it was discovered that the newer machine produces 523.2kg less CO_2 emissions over five years because the reduced environmental impact of its improved energy-saving features more than compensate for the environmental impact of its capacitor.

*See Page 20.

LCA Comparison of Capacitor-equipped Machine and Conventional Machine (CO_2 emissions)



Scope of LCA: Environmental impact of materials used in capacitor, "manufacturing" and "transportation" is converted into CO_2 emissions. The life of a copier is defined as five years.

● Disclosure of Information using Environmental Labels

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 products to buy. Ricoh's criteria for product design used to promote global green marketing are actually more severe than those set by the international Type I environmental label. Moreover, Ricoh actively contributes to establishing Type I environmental labeling criteria in many countries. In fiscal 2004, Ricoh acquired Type I labels from New Zealand and Taiwan.

Type II Environmental Labels

Type II environmental labels are given to products that satisfy standards independently set by each company. The Ricoh Group has defined the Recycle Label, and has set its own standards for recyclable designs, reuse rate of parts, and environmental safety.

Recycle

* For details, refer to the following Web site.
http://www.ricoh.com/environment/label/type2/index.html

Type III Environmental Declaration

As green purchasing is increasingly popular at present, the timely and global disclosure of information is increasingly important, not only for the selection of products by customers but also for sustainable environmental management by the Ricoh Group. The Ricoh Group, following the Type III Environmental Declaration, continuously endeavors to quantify the environmental impact of products using LCA and disclose this information. In addition, the Ricoh Group is making efforts to promote the Type III Environmental Declaration. In fiscal 2004, the Ricoh Group acquired certification for its digital cameras and had its certification for its copiers and laser printers renewed by the EcoLeaf Type III environmental labeling program.

* For details, refer to the following Web site.
http://www.ricoh.com/environment/label/type3/index.html

International Environmental Labels for which the Ricoh Group Qualifies

* Type I Environmental Labels

http://www.ricoh.com/environment/label/type1/index.html

● Eco Mark*/Japan

An example of the Eco Mark on an imagio Neo 753 series model (certification no. 03117032)

● Green Label*/Thailand

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

● Environmentally Friendly Label*/Hungary

● Energy Efficiency Labeling Scheme (EELS)/Hong Kong

● Blue Angel Mark* (BAM)/Germany

● Environmental Choice Program (ECP) Mark*/Canada

● Green Mark*/Taiwan

● Environmental Choice*/New Zealand

Development of User-Friendly and Energy-Saving Technologies

● Concept

Products that are not easy to use will not be chosen by customers, even if their energy-saving performance is good. Such products can neither contribute to energy conservation nor help prevent global warming. Ricoh further develops its unique energy-saving QSU technology*, which enables quick recovery from energy-saving mode, allowing users to make copies whenever they need to. It is also expanding the product line of QSU-equipped machines. Meanwhile, reducing unnecessary paper consumption is important since paper production consumes a lot of energy (indirect energy saving). Ricoh helps decrease the environmental impact caused by customers' paper consumption by offering user-friendly duplex copying functions, digitization, and promoting sales of recycled paper.

* Ricoh's original energy-saving technology that enables quick recovery from energy-saving standby mode.

● Targets for Fiscal 2004

◎ Achieve Ricoh's energy-saving goals.
◎ Develop practical application technologies for alternative paper and rewritable paper.

● Review of Fiscal 2004

Ricoh was the first in the world to market high-speed monochrome digital copiers possessing productivities of 65 and 75 copies/min. and a quick recovery function that enables them to recover from energy-saving mode in 10 seconds or less (these copiers are marketed only in Japan). Ricoh thus completed a lineup of office-use monochrome quick-recovery* digital copiers comprising various machines with productivities that range from 13 to 75 copies/min. Also, the number of quick-recovery products in which QSU technology was introduced and are currently in use outside of Japan increased. As a result, the amount of CO_2 reduced reached approximately 29,000 tons in fiscal 2004, twice that reduced in the previous year (see graph ❺).

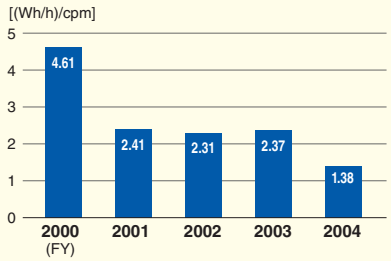
* The time it takes for copiers with a productivity of 45 copies/min. to recover from energy-saving mode is 15 seconds or less.

<Japan>

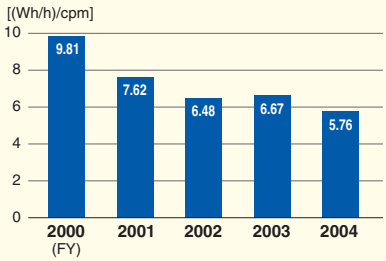
Changes in Energy Consumption

❶ Black-and-White Copiers and Multifunctional Copiers

Black-and-white plain-paper copiers, excluding those that accommodate wide-format paper



❷ Color Copiers and Multifunctional Copiers

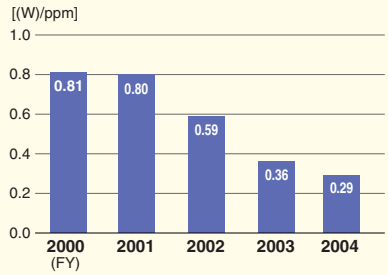


◎ Energy conservation values for copiers are calculated as follows:
Σ [<Energy consumption efficiency (Wh/h)>[1]/<copying speed[2]> × the number of units marketed]/
Σ the number of units marketed

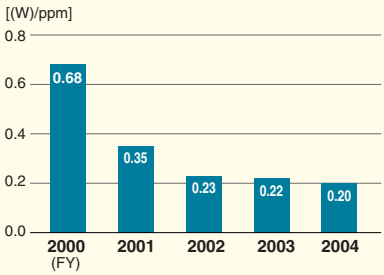
1. Energy consumption efficiency was measured in accordance with the Ministry of Economy, Trade and Industry's Law in Japan Concerning the Rational Use of Energy.
2. Copying speed = copies per minute (cpm)

Data for multifunction black-and-white copiers, color copiers and multifunction copiers are pursuant to the measurement standard for energy consumption efficiency of the Law Concerning the Rational Use of Energy.

❸ Black-and-white and Color Printers



❹ Facsimiles (Including Multifunctional Copiers)



◎ Energy conservation values for facsimiles and printers are calculated as follows:
Σ [<Energy Star energy consumption in standby mode[3] (W)>/<printing speed[4]> × the number of units marketed]/Σ the number of units marketed

3. Energy Star energy consumption in standby mode = energy consumption in standby mode pursuant to the standards of the International Energy Star Program.
4. Printing speed = print per minute (ppm)

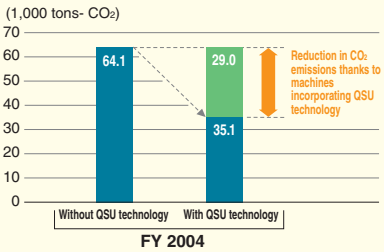
* Data for the four graphs above are calculated based on the number of units marketed in Japan.

● Future Activities

Ricoh will strive to improve its QSU technology to widely promote the use of the energy-saving function. Ricoh will also promote the introduction of user-friendly (reduction in time required to recover from energy-saving mode), energy-saving technologies to color copiers.

<Global>

❺ Reduction in CO_2 Emissions through the Use of QSU Technology



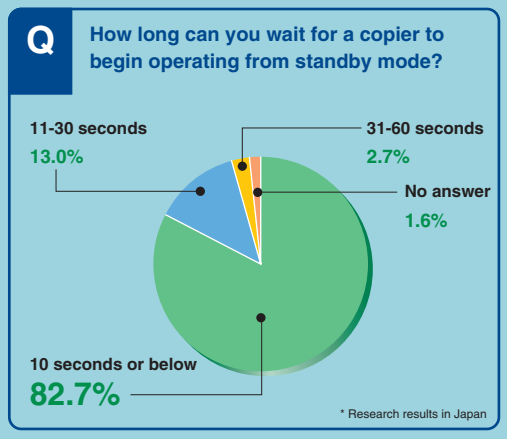
Segment Environmental Accounting of Product Energy Conservation (Benefit on cost in QSU product development)

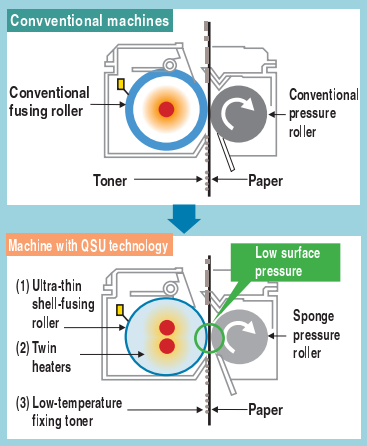
Costs			Effects		
			Economic benefits		Effect on environmental conservation
Item	Main costs	Costs	Internal benefits	Customer benefits	
R&D cost	Cost of developing energy-saving units	¥400 millon	Amount of profit contribution ¥1,894 million	Reduction in payment for consumed power supply ¥1,769 million	Reduction in CO_2 emissions 28,996 (t)
	Cost of molds, jigs, parts, etc.	¥488 millon			

* The reduction in payment for consumed power supply and CO_2 emissions is the annual benefit brought from eight hours of operation per day, 20 days of operation a month. Internal benefits refer to benefits on gross profits in sales results in fiscal 2004.

QSU, Energy-Saving Technology that Realizes Energy-Saving in Standby Mode and Quick Recovery from Energy-Saving Mode

According to Ricoh's market research, most consumers prefer copiers that recover from energy-saving mode in a shorter time (see pie chart). It also shows that many users of machines that need a longer time to recover from energy-saving mode do not utilize an energy-saving function and many users of products to which QSU technology is introduced make use of the function. If it takes too long to recover from the energy-saving mode, consumers will not use the function because they cannot make copies whenever they need to. That is, a copier/printer that takes longer time to recover from standby mode consumes extra energy in the mode. Users of products to which QSU technology is introduced seem to be free from stress and practice energy conservation unconsciously.





● QSU technology incorporated in Aficio (imagio Neo) series

(1) Ultra-thin shell-fusing roller
In order to realize quick start-up, the fusing roller was thinned as much as possible to shorten the temperature rise time.

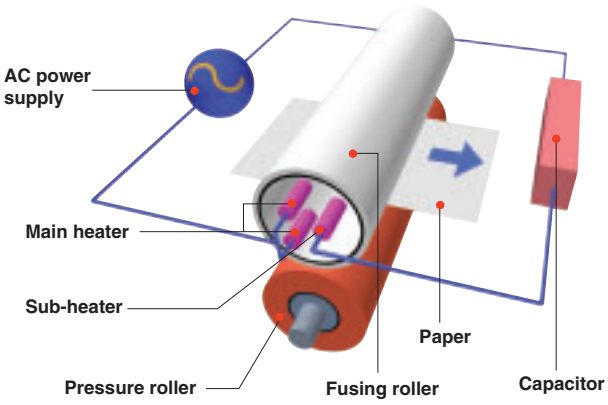
(2) Twin heaters
Because a thin roller is apt to get cold, the temperature is carefully and effectively adjusted by using two separately controlled heaters.

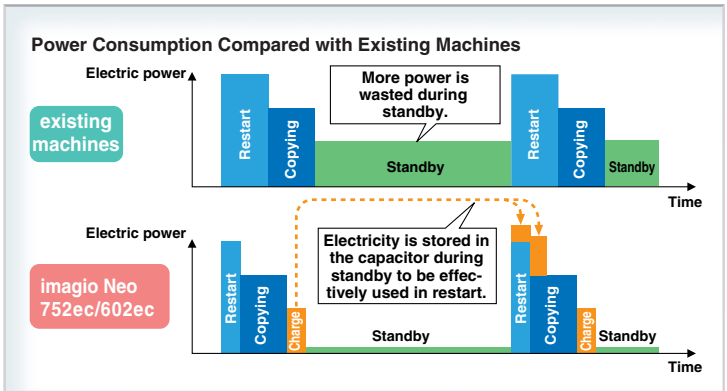
(3) Low-temperature fixing toner
This toner ensures a fixity that is equal to or higher than that of conventional toner even at low temperatures and supports both energy saving and the quick startup function.

Ricoh Achieves the World's First 10-Second Recovery Time High-Speed Digital Multifunctional copier: imagio Neo 752ec/602ec

In fiscal 2003, Ricoh introduced the HYBRID QSU, an integration of quick start-up (QSU) technology and capacitors (electric storage devices), to the imagio Neo 752 series of high-speed digital multifunctional copiers. This enabled a 30-second recovery time from energy-saving mode. In fiscal 2004, by improving the HYBRID QSU, Ricoh launched the imagio Neo 752ec/602ec, which achieves a 10-second recovery time from energy-saving mode. The capacitors have a quick charge and discharge capability. In the past, capacitors were used to supply heat to the fusing roller. This is because although the ultra-shin fusing roller, one of the QSU technologies, shortens the temperature rise time, papers tend to absorb heat easily from the fusing roller during high-speed printing, such as at 75 pages/min., which resulted in a failure to maintain copy quality and productivity. In the new series, capacitors are used both for printing and to help the restart. Using capacitors in this way, Ricoh succeeded in achieving a 10-second recovery time (about 1/30 that of existing machines*) from energy-saving mode without lowering productivity. This is the first time in the world that a ten-second recovery time has been achieved in the field of high-speed digital copiers.

* Comparison with imagio Neo 750 model 75
* Capacitors are incorporated only in the 100V machines marketed in Japan.





Enrichment of Energy-Saving Product Lines

In fiscal 2000, Ricoh marketed user-friendly and energy-saving products, the Aficio 1035/1045 (imagio Neo 350/450), which use Ricoh's original QSU energy-saving technology. Since then, Ricoh has actively incorporated this technology into its copiers and printers. In fiscal 2003, Ricoh developed the HYBRID QSU, an improved QSU technology designed for high-speed machines. Also in fiscal 2004, Ricoh developed the imagio Neo 752 ec series with a copying productivity of 75 pages/min., and a 10-second recovery time from energy-saving mode. This completes our extensive energy-saving product line, with machines with productivities ranging from 13 pages/min. to 75 pages/min in Japan.

The imagio Neo 752ec model 75 with optional equipment

30-Second Recovery Time for Color Printers

Ricoh launched color printer Aficio CL4000DN (IPSiO CX400) with a copying productivity of 25 pages/min. in February 2005. This machine, which has a 30-second recovery time from energy-saving mode and consumes less than 6W of energy in standby mode, combines user friendliness with energy-saving.

Aficio CL4000DN (IPSiO CX400)

Lineup of Products with QSU Technology in Japan

	Products	Printing speed (/min.)	Time required to recover from energy-saving mode	Energy consumption efficiency
Copier	imagio Neo 135	13 pages	10 seconds	14Wh/h
	imagio Neo 165	16 pages	10 seconds	14Wh/h
	imagio Neo 221	22 pages	10 seconds	29Wh/h
	imagio Neo 271	27 pages	10 seconds	29Wh/h
	imagio Neo 350RC	35 pages	10 seconds	34Wh/h
	imagio Neo 352	35 pages	10 seconds	33Wh/h
	imagio Neo 450RC	45 pages	15 seconds	49Wh/h
	imagio Neo 452	45 pages	15 seconds	48Wh/h
	imagio Neo 603	60 pages	30 seconds	57Wh/h
	imagio Neo 602ec-75	60 pages	10 seconds	—
	imagio Neo 753	75 pages	30 seconds	117Wh/h
	imagio Neo 752ec-75	75 pages	10 seconds	—
Printer	IPSiO NX 86S	20 pages	12 seconds	—
	IPSiO NX 96e	25 pages	12 seconds	—
	IPSiO NX 660S	22 pages	10 seconds	—
	IPSiO NX 760	28 pages	12 seconds	—
	IPSiO NX 860e	32 pages	12 seconds	—
	IPSiO NX 920	45 pages	15 seconds	—

Indirect Energy Saving through Reduced Paper Consumption

Development of User-Friendly Duplex Copying Function with High Productivity

To provide more customers with user-friendly duplex and n-up copying functions (copying multiple pages on one sheet of paper) and to reduce paper consumption by users, Ricoh has developed higher-speed duplex and n-up copying technologies that are more user-friendly. The Aficio 2075/2060 (imagio Neo 753/603) series, in which a single-path system is used, simultaneously reads both sides of a two-sided document with a single scan by two scanning sections, and realizes higher-speed duplex copying of two-sided documents at the same speed as single-sided document copying. The series also achieves 100% duplex copying productivity* while in continuous operation. Many of our multifunctional digital copiers also achieve 100% duplex copying productivity while in continuous operation.

* Duplex copying productivity (%) =(Time spent on simplex→duplex copying)/(Time spent on simplex→simplex copying)×100. The time is measured from the moment the desired number of copies is entered and the "Copy" button is pressed to the moment the copier is ready for the next batch of copying.

Solutions to Reduce Paper Consumption for Users

Ricoh provides its customers with printing solutions to realize an ideal printing environment that meets each customer's business needs. In addition, document solutions are available to scan and digitize paper documents, and confirm/share the data on networked PC screens. With these solutions, Ricoh contributes to a reduction in paper consumption for its customers.

RECO-View® IC Tag Series that Visualizes Rewritable IC Tag Information

Rewritable IC tags that record the latest inventory, production capacity, etc. are now used extensively to manage information in many different areas such as production and distribution. However, these IC tags have a drawback that the recorded data is invisible. Using thermal rewritable technology that is used for loyalty cards, etc., Ricoh has developed the RECO-View® IC Tag series that makes it possible to display and rewrite data recorded on IC tags. This technology enables simultaneous rewriting of information on IC tags and printed images on sheets and tags. These IC tags were tested at the Ricoh Numazu Plant and marketed in December 2003. Today, printers, readers and writers that respond to the RECO-View® IC Tag series have been launched by different makers, and RECO-View® IC Tags are used by more than 30 companies, mainly in the manufacturing sector.

Printer for IC tag sheet

RECO-View® IC tag sheet

INTERVIEW ⟹ Customer feedback

Introduction of the Ridoc IO Gate (integrated print management system) and printers

Keio University

The introduction of an integrated print management system brought paper consumption down approximately 50%.

Improvement of printing environment a big concern

Among other things, Keio University was concerned about the need for better printing environment to deal with its growing technological and administrative requirements. At the Mita and Hiyoshi campuses, every two PCs were locally connected to one printer. This setup necessitated a considerable number of printers and was causing immense problems in terms of cost and machine maintenance.

On-demand printing system
The printing function can be executed by selecting the printing job at the terminal next to the printer.

Improvement in user convenience for students and reduction in cost and environmental impact

Keio University introduced Ricoh's integrated print management system to its Mita, Hiyoshi, Yagami, and Shinanomachi campuses at about the same time. The on-demand pay printing system is connected to 57 printers in total. The network connection saves maintenance work and cost, and the optimal system allocation improves convenience for students. Under this system, users pay ¥5 per copy for black-and-white printing and ¥30 per copy for color printing. This made students more aware of the cost of printing, and some campuses succeeded in cutting down the number of copies to about 50% that in the previous year.

Global Promotion of Sales of Recycled Copiers Based on the “Comet Circle”

● Concept

Based on the concept of the Comet Circle that puts “Priority on Inner Loop Recycling,”* the Ricoh Group is working on recycling materials with less environmental impact and high economic efficiency. Our efforts are thus focused on the following activities (in order of priority)—recovering products, reusing parts, and recycling materials. Ricoh, with recognition that the flow from collection of used products to the recycling of materials is one business unit, is making efforts to improve profitability in the recycling business on a global scale. Improvement of profitability will make continuous activities to reduce environmental impact possible. *See page 8.

● Targets for Fiscal 2004

◎ Improve the quantity of reusable parts used by a factor of at least 20 (compared to fiscal 2000, in Japan)
◎ Improve the collection rate of used products and toner cartridges by at least 10% in terms of the number of units collected (the Ricoh Group as a whole, compared to fiscal 2000 figures)
◎ Increase the number of resource-recirculating-type products marketed by a factor of at least 20 (in Japan, compared to fiscal 2000 figures)
◎ Improve the resource recovery rate for used products and toner cartridges.

Products

Japan: 98%, Europe: 85%,
The Americas: 95%,
Asia-Pacific: Over 85%

Toner cartridges

Japan: 98%, Europe: 85%,
The Americas: 100%,
Asia-Pacific: 85%

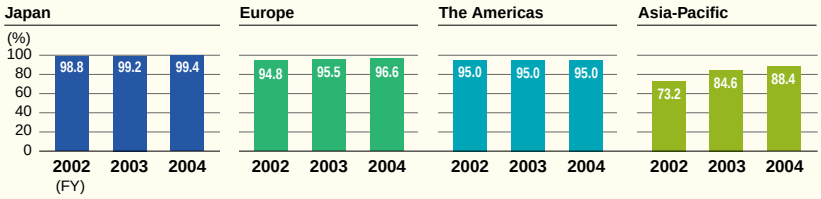
● Review of Fiscal 2004

The number of used products and toner cartridges collected and the resource recovery rate are increasing steadily (see graphs ❶ through ❹). Ricoh will continue to promote highly efficient collection and resource recovery methods. In fiscal 2004, the imagio Neo 350RC/450RC series (resource-recirculating-type products with an excellent energy-saving function) was put on the market. The sales of resource-recirculating-type products increased by a large margin (24.3 times that marketed in fiscal 2000) and the goal was attained.

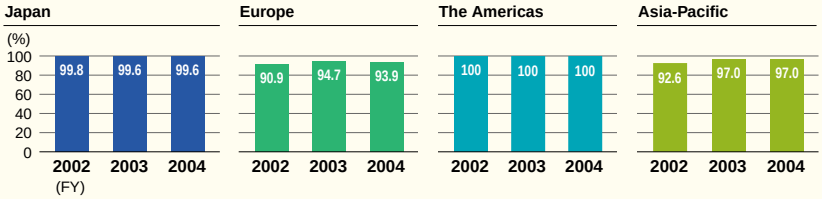
<Global>

Resource Recovery Rate

❶ Copiers

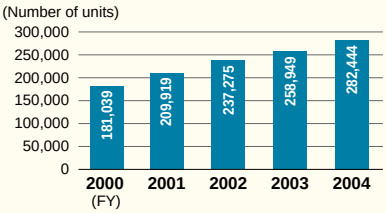


❷ Toner Cartridges

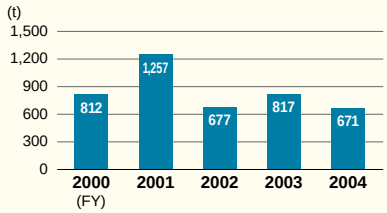


Collection Results

❸ Number of Copiers Collected



❹ Amount of Toner Cartridges Collected*



* Up to fiscal 2001, the amount of collected toner cartridges included the weight of the remaining toner inside the cartridges. In fiscal 2002, however, the calculation method was improved so that only the weight of the toner cartridges is included.

Segment Environmental Accounting of the Product Recycling Business (Japan)

Costs		Effects			
		Economic benefits		Effect on environmental conservation	
Items	Costs	Items	Benefits		
Product recycling cost	¥682 million	Sales	¥3,034 million	Amount of resource recovery: 33,096 (t) Up 3,868 (t) from that in the previous year	Amount of final disposal: 177 (t)
Collection/resource recovery cost	¥2,893 million	Social effect	¥2,648 million		
Total cost	¥3,575 million				

* Social effect refers to the cost of waste disposal that customers no longer have to pay.

● Future Action

Ricoh will endeavor to offer products that have low environmental impact and cost by improving the rate and quality of the method employed to collect used products and increasing the number of resource-recirculating-type products manufactured and marketed. Through these activities, the company will further promote improvements in profitability in its recycling business.

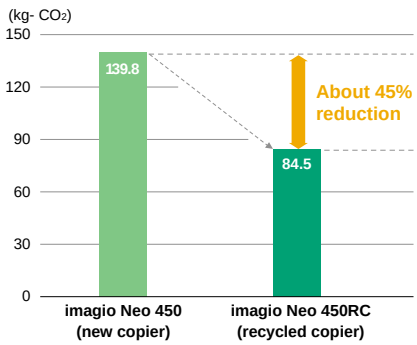
More Recycled Copier Models Available and Increased Sales

<Ricoh (Japan)>

Since the launch of the recycled digital copier, imagio MF6550RC in December 2001, Ricoh has increased the number of models available. In fiscal 2003, recycled machines with a copying productivity ranging from 35 pages/min. to 70 pages/min. became available, making it possible to meet the needs of a wider range of customers. In fiscal 2004, the new recycled digital copier imagio Neo 350 RC/450RC was added to the lineup. This new model is equipped with Ricoh's original QSU energy-saving technology that improves energy consumption and gives a fast warm-up period of only ten seconds. By responding to the needs of more customers, Ricoh has steadily increased sales of recycled machines. Because more than 82% (mass ratio) of the parts used in recycled machines are recycled parts, the imagio Neo 350/450RC gives around a 40% reduction in environmental impact over its whole lifecycle.

Imagio Neo 450RC, a recycled digital copier with optional equipment

❺ LCA Comparison Between a New Machine and Recycled Copier (CO_2 Emissions)



* A comparison is made by calculating the annual environmental impact of new and recycled copiers over a five-year-period and ten-year period, respectively.
* Figures for CO_2 emissions by copiers in operation at customer sites were not included in the calculation of the data.

INTERVIEW ⟹ Customer feedback

Introduction of Recycled Digital Copiers — Suita City, Osaka

"I am convinced of the importance of using recycled machines to promote the establishment of a recycling-based community."

Mayor **Yoshio Sakaguchi**

Fulfilling administrative social responsibility

Suita City encourages its citizens to get involved in establishing a sustainable community. Suita Environmental University for Senior Citizens is a good example of the integration of what citizens would like, what corporate entities are capable of doing, and what administrative authorities are supposed to do. Because we are supported by such companies as Ricoh in operating the university, we are both, in a way, fulfilling our social responsibilities.

How did we come to use recycled copiers?

Recycled copiers have a limited market, and people do not have a sufficient understanding of recycled products. Under such circumstances, the public sector needs to set an example for society by purchasing environmentally-friendly products. This is what administrative authorities can do in assuming social responsibility. We asked Ricoh to attach special stickers on its recycled copiers to help our personnel become more aware of the situation. (Of the 221 Ricoh copiers that Suita City uses, 76 are recycled.)

Expanding the Production Line for Recycled Machines

<Ricoh Thailand Ltd. (Thailand)>

Ricoh Thailand Ltd., established as a sales company, started full-scale production of recycled machines in fiscal 2003 for sale within Thailand. In fiscal 2004, the production line for recycled machines was expanded and improved to cope with an increase in the number of used products collected. By redesigning the production process and designating staff specifically to be in charge of work checks, work instructions, recycling, and overall process management, the company has succeeded in producing high-quality recycled machines efficiently. More than 40% of recycled machines produced in the Asia-Pacific region are manufactured by this company.

Production line for recycled machines at Ricoh Thailand

Production of Reconditioned Machines by a Sales Company

<Ricoh UK Ltd. (United Kingdom)>

In order to provide high-quality recycled products to the entire European market, the European Ricoh Group integrates products used in the European market at the European Green Center in the Netherlands. Used products collected at the center are recycled at Ricoh UK Products Ltd., a production site in the United Kingdom, to be sold as recycled machines and toner cartridges with the manufacturer's guarantee. Ricoh UK Ltd., a sales company in the United Kingdom, opened the UK Green Center in January 2004. The center produces reconditioned copiers of the same quality as those produced at plants by combining Ricoh UK Products' know-how and the field experience of Ricoh UK Ltd.

European Countries Establish Framework to Cope with the EU WEEE Directive

<Ricoh Family Group (RFG) (Europe)>

In accordance with the WEEE Directive*, manufacturers are required to collect and recycle office equipment at end-of-life. RFG is committed to building and operating recycle systems for office equipment. Using the expertise and infrastructure it has developed thus far, RFG works with not only the office equipment industry but with all electronic industries, such as Consumer electronics associations as well as recycling and logistic companies in all 25 EU countries to create systems that will ensure compliance with the local WEEE implementations. Users can return products to collection facilities or salespoints at end-of-life, and they are then collected and recycled by designated recycling companies. Collection and processing cost are financed by producers according to their market share. Already systems are in use in the Netherlands, Belgium, Switzerland, and Norway.

* EU Waste Electrical and Electronic Equipment Directive

Building Multi-tiered Collection Routes with Post Offices

<Lanier (Schweiz) AG (Switzerland)>

Lanier (Schweiz) AG, a sales company, has built a system that allows customers to return used toner cartridges via post offices free of charge. This system is based on the policy "customers can return everything they buy from Lanier to Lanier." Prepaid labels are enclosed in packages and can be downloaded from internet. Thanks to the system, more customers are now able to cooperate in the collecting and recycling process more easily. Since start of this program in November 2003 a monthly increase from 20% customer returns in average were reported. Of the used cartridges collected, those that can be reused are sent to the European Green Center to be sold as recycled products. Those that cannot be reused undergo material recycling by domestic recycling companies.

Special sticker attached to the corner of a collected package

Printer Cartridges Now Returnable through the Mail

<Ricoh (Japan)>

In addition to the normal collection route via sales companies and dealers, used cartridges for GELJET printers can now be returned through the mail. Users put the used cartridge into a collection envelope distributed with the original packaging and drop it into a mailbox. This new approach allows users to cooperate more easily in returning used cartridges. Ricoh makes donations to environmental groups from the results of collecting used cartridges through the mail. The first donation was to the Green Earth Network's "Magpie Forest" afforestation project (Huangtu Plateau in China), as a result of the savings from the collection scheme from February to September 2004.

Employee feedback

INTERVIEW — Promoting Innovations in Packaging

"Ricoh aims to develop its reusable resource-recirculating eco-packaging even further."

Tomoaki Arai
Group Leader
No. 3 Design Group
No. 1 Design Office
Designing Center
MFP Business Group

From eco-packaging materials to recyclable eco-packaging materials

"With increasing concern over packaging waste, highlighted by the ratification of the Container and Package Recycling Law in April 2000, Ricoh decided to improve the eco-packaging that it first introduced in 1994. While conventional eco-packaging aims to reduce the use of cardboard, the new packaging concept is to use recyclable materials. The package developed initially was of the metal frame type, but this could not be successfully mass-produced due to lack of versatility. Resource-recirculating eco-packaging using plastic materials was first introduced in January 2001, and today about 50% of copiers manufactured in Japan are shipped in this packaging."

Breaking the cost barrier

"Challenges in the design of new packaging take the form of composition of parts, cost, strength, durability, and versatility. Important points in organizing the new packaging system are creating an efficient collection system and maintaining the parts. The most difficult challenge was cost. Although some people think that cost is not a problem if this is offset by increased durability, longer depreciation periods may increase the overall risks. Team members engaged in developing the new packaging made strenuous efforts to respond to the request for the depreciation periods to be as short as possible and for the total costs—including manufacturing, collecting, and maintaining the parts—to be kept to the same level as conventional packaging."

Strengthening the product as well as its packaging material

"Moreover, while conventional packaging materials are only required to protect the product once, resource-recirculating eco-packaging must be able to withstand repeated use. Therefore, in addition to evaluating the strength of product packaging, it became necessary to evaluate other factors such as environmental deterioration, and durability of the packaging materials. And there was still another issue to be tackled. Since cushioning materials are not used in resource-

Reusing OPC Aluminum Tubes
<Ricoh (Japan)>

In March 2003 Ricoh started recycling photosensitive drums (OPCs: organic photo conductors), which form the heart of its copiers and printers. An OPC consists of an aluminum tube and photosensitive layer made of an agent mixed with resin and applied to the tube's surface. Since it was difficult to successfully separate the layer from the tube on used OPCs, materials recycling was adopted. Ricoh developed a new technology to separate and clean the photosensitive layer, and succeeded in separating all types of OPCs, regardless of how long they had been in use. This technology enables collected OPCs to be reused. In fiscal 2004, 26,000 recycled OPCs were delivered during the year, which gave a reduction of 7.7 tons of aluminum alloy, the material of the tubes. These efforts contribute to a reduction of 71.3 tons of CO_2 a year.

Recycling Process for Used OPCs

Eco-packaging

Conventional resource-recirculating eco-packaging introduced in 2001

Conventional resource-recirculating eco-packaging
The new user-friendly eco-packaging, launched in January 2005, can be refolded after being collected.

recirculating eco-packaging, the product needs to be stronger as well. It is clear, then, that the development and use of eco-packaging consists of more than just designing the packaging. It is an innovation that cannot be implemented without cooperation between suppliers and the whole Ricoh Group, and encompassing product design, distribution, and dealers. Ricoh is striving to advance the evolution of packaging."

Development staff

Satellite Filling Promotes the Reuse of Toner Bottles
<Ricoh (Japan)>

Ricoh has introduced the satellite filling concept to promote the reuse of toner bottles. In this system, instead of returning the collected toner bottles to the production site, bottles are recycled and filled with toner at a collection center close to the customers and the recycled bottles are shipped from the center. This new filling system reduces the environmental impact of transporting the bottles and shortens the lead time. Satellite filling has become possible thanks to the development of our small On-Demand Toner Filling Machine. In fiscal 2004, the new filling system was launched in the Kyushu, Tokai, Kanto, and Tohoku areas, and 320,000 toner bottles were shipped during the year. It is planned to expand satellite filling to the Kinki, Chugoku/Shikoku, and Hokkaido areas in fiscal 2005, to cover the whole of Japan. In terms of LCA evaluation, recycled toner bottles, which reduce the environmental impact of production and transportation, cut CO_2 emissions by 87% compared with new products.

In only a small space, anyone can easily refill with toner.

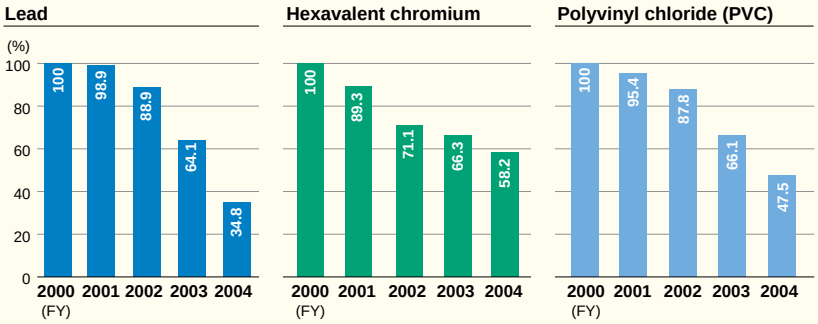
We are reducing the environmental impact that a product has during its lifecycle by reducing environmentally-sensitive substances contained in our products.

● Concept

Aiming to reduce the impact on the global environment and enhance end user comfort levels, the Ricoh Group is tackling important issues, specifically reduction of environmentally-sensitive substances contained in its products and reduction of noise, ozone, dust, and volatile organic compounds (VOCs) emissions at the end-user stage. Environmentally-sensitive substances contained in products do not affect the environment when the products are in use, but they will affect the environment when the products come to the end of their lifecycle and are improperly disposed of. An eco-balance* assessment shows that reducing the use of these substances will ultimately lessen the environmental impact a product has during its lifecycle. It will also reduce recycling costs. Accordingly, the Ricoh Group has given top priorities to these challenges. *See page 51.

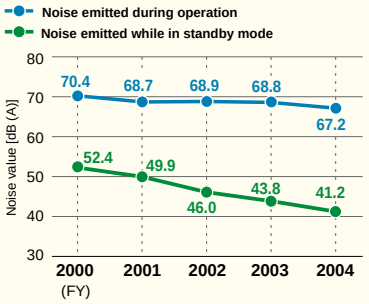
<Global>

❶ Changes in the Amount of Chemical Substances Used in One Product (Compared with those in the figures for fiscal 2000)



(Calculation method to determine the amount of chemical substances used in one product)
Σ (Amount of chemical substance contained in one product × number of products sold)/Σ number of products sold (worldwide)
* Figures for the amount of chemical substances contained in each product are not the average for all models but the amount used in a representative model. Therefore the figures are being renewed along with the progress of research.

❷ Changes in the Level of Noise Emitted by Color Copiers



* Calculations are based on the weighted number of color copiers and color printers sold and converted into a capacity of a copier that produces 50 sheets per minute for all machines.

❸ Achievement of Standards for Environmentally-sensitive Chemical Substances

	Models that Achieved the Standards[1]	Ricoh Standards (mg/m^3)	Eco Mark (Japan) (mg/m^3)
Ozone	96/96	0.02	0.02
Dust	96/96	0.075	0.075
Styrene	96/96	0.07	0.07

1. Figures show the number of models that achieved the standards out of 96models (copiers, facsimiles, and printers) marketed in fiscal 2004.

● Targets for Fiscal 2004

◎ Completely eliminate the use of environmentally-sensitive substances (i,e., lead, hexavalent chromium, polyvinyl chloride, and cadmium) in products.
◎ Reduce noise levels by 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.

● Review of Fiscal 2004

All products marketed contained none of the four environmentally-sensitive substances (lead, hexavalent chromium, polyvinyl chloride, and cadmium). Steady progress is being made in ensuring that our products contain absolutely none of the four environmentally-sensitive substances as a result of strengthening the management system for the 14 groups of substances prohibited by Ricoh* (see graph ❶). Noise levels while in standby mode have been reduced significantly, while noise levels during operation have been reduced to the level of our goal (see graph ❷). At the same time, all our products put on the market during fiscal 2004 satisfy the standards for environmentally-sensitive substance emissions (see table ❸).

*See page 28.

● Future Activities

The Ricoh Group will strengthen its strict management system for environmentally-sensitive substances to readily cope with inquiries from customers who have an increasing interest in chemical substances and their management, which is expected to further tighten. Regarding Germany's Blue Angel Mark that was revised in January 2004, 14 types of our products have received the mark (as of April 2005) and further efforts will be made to comply with it.

Promoting Complete Elimination of Use of Environmentally-sensitive Chemical Substances

<Ricoh (Japan)>

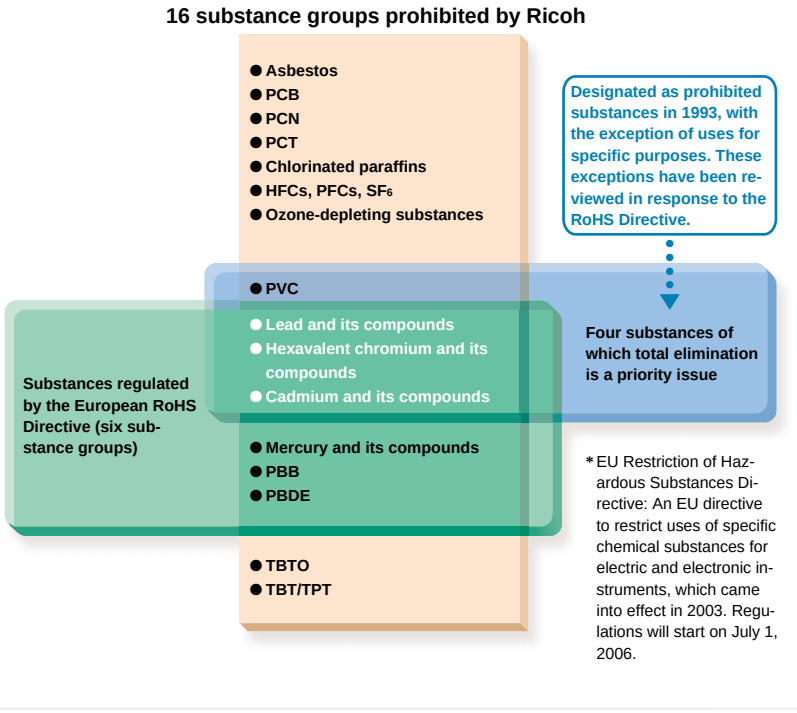
Ricoh set original standards for environmentally-sensitive substances that could be used in its products in 1993 as part of efforts to reduce these substances. In fiscal 2002, it set out a policy to completely eliminate use of the remaining four prohibited chemical substance groups out of the fourteen product groups prohibited by Ricoh, while organizing the Total Elimination Working Group to stop all use. All the divisions engaged in production (the design, procurement, and manufacturing divisions) take part in the group. The group is engaged not only in research into chemical substances in products and judgments on the validity of the research results, but also in appointing a key person in charge of total elimination of use of the substances for all parts, and establishing an environmental impact information database that will allow designers to check information on chemical substances contained in parts. Thus efforts are being made to build a seamless workflow and accelerated development for routine operations, aimed at eliminating all use of these chemicals. In fiscal 2004, two substance groups were added to the list of prohibited substances.

Marketing Products Pursuant to the RoHS Directive

As a result of its efforts toward the total elimination of environmentally-sensitive substances, Ricoh began marketing in Japan in fiscal 2004 the products pursuant to the EU's RoHS Directive, namely, the imagio Neo C600 (Aficio 3260C) and the imagio Neo C285/355 (Aficio 3228C/3235C series) of color digital multifunctional copiers.

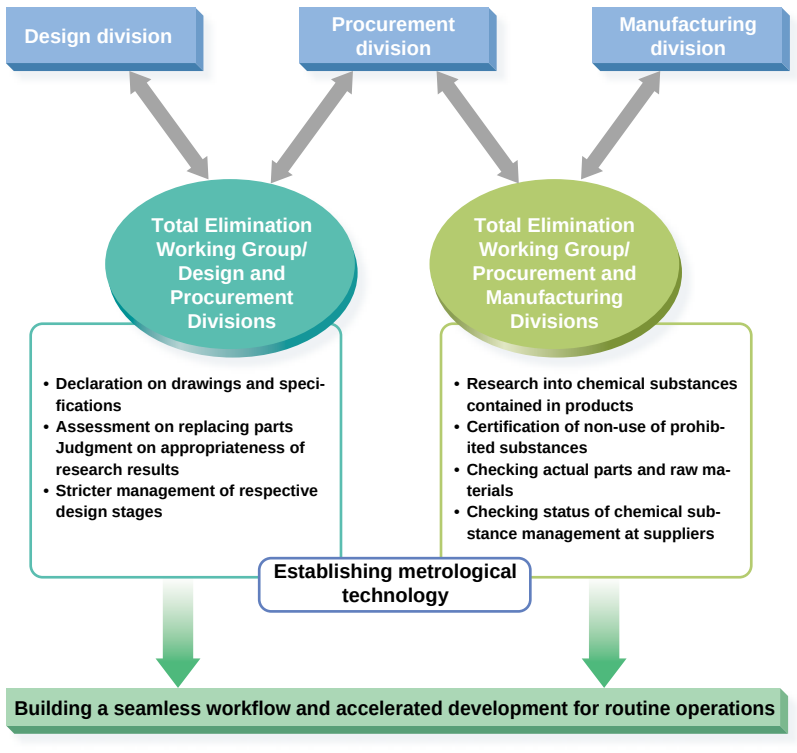
The Aficio 3260C (imagio Neo C600) with optional equipment

Substances Prohibited by Ricoh, Substances No Longer Used under the Action Program, RoHS Directive*



* EU Restriction of Hazardous Substances Directive: An EU directive to restrict uses of specific chemical substances for electric and electronic instruments, which came into effect in 2003. Regulations will start on July 1, 2006.

Establishing a System to Manage Chemical Substances Contained in Products



Pilot Program for the Certification of a System of Managing Chemical Substances Contained in Products <Ricoh (Japan)>

Because there are no standards set in Japan for systems of managing chemical substances contained in products, companies must take this matter into their own hands. Therefore, companies that supply parts or products to several clients may have to control chemical substances in different ways for each client. Taking this into account, Ricoh worked with JQA[1] to bring about a pilot program to confirm the validity of standardizing systems for managing chemical substances contained in products. Under this program, JQA screened the management system that Ricoh had created pursuant to draft guidelines prepared by JIPDEC's[2] review committee on the certification of chemical substance management systems. Through such efforts, the effectiveness of the guidelines in system construction was confirmed. Ricoh's system was thus endorsed for further improvements by JQA's third-party review under this program.

1. Japan Quality Assurance Organization
2. Japan Information Processing Development Corporation

TOPIX

Ricoh certified as a testing laboratory for the measuring of chemical emissions.

To provide the market with environmentally conscious products quickly, Ricoh acquired certification as a testing laboratory for the measuring of chemical emissions. It was the first manufacturer in the world to be so certified.

The very first certified testing laboratory in Japan

With a growing global call for green purchasing, more customers are concerned about chemicals emitted from products, particularly when they are in use.

The criteria to obtain the Blue Angel Mark, Germany's leading environmental label, were revised in January 2004. For chemicals emitted from office equipment, data to be submitted must now be measured by a testing laboratory certified by the Federal Institute for Materials Research and Testing (BAM). Because of the new criteria, products need to be sent to BAM-certified testing laboratories in Germany and the United States, a costly and time-consuming procedure, to prepare the data required when applying for the Blue Angel Mark.

The world's first manufacturer to be certified as a testing laboratory

To address this problem, Ricoh built its own emission-measuring testing laboratory on its design/development site and received accreditation from BAM in October 2004 as a testing laboratory authorized to take measurements from copiers and printers. Ricoh was the first manufacturer in the world to be so accredited. With this recognition, Ricoh can apply for the Blue Angel Mark quickly, creating a system that provides the market with environmentally conscious products.

*Chemicals, such as ozone, dust, and volatile organic compounds (VOCs), emitted from products.

Emission-measuring testing laboratory set up at Ohmori Plant

INTERVIEW ⟹ Industry organization

BITKOM, the German IT Association

"Green procurement becomes popular more and more."

BITKOM, with a membership of 700 companies, is the largest association in the electronics and IT industries in Europe. Dr. Mario Tobias, from the Environment Division at BITKOM, talked about Germany's environmental trends.

In Germany, more companies implement green purchasing in, for example, office products. Some companies and authorities not only follow BITKOM's guidelines for green purchasing but have established their own guidelines. One objective of the environmental working groups within BITKOM is to harmonize the different green purchasing guidelines within Germany. The future market is expected to pay more attention to chemicals in addition to companies' activities to conserve energy and recycle products. To be prepared for the future customers requirements and questions regarding environmental safety and health, BITKOM works close together with the related authorities and research institutes like BAM (refer to BAM article) as well as with international standardization bodies and NGOs.

Dr. Mario Tobias

INTERVIEW ⟹ Research institute

BAM, the Institute That Examined and Certified Ricoh's Laboratory

"Measuring chemicals easily leads to the spread of user-friendly equipment."

The Federal Institute for Materials Research and Testing (BAM) was founded in 1870–71 and is a technical and scientific senior federal institute under the authority of the Federal Ministry of Economics and Labour (BMWA). In addition to conducting research on chemicals emitted from office equipment, BAM aims at the overall goal of improving public technical safety. The following is an interview with Dr. Oliver Jann and Dr. Olaf Wilke, who examined and certified Ricoh's laboratory.


From left: Dr. Jürgen Lexow, Dr. Oliver Jann, and Dr. Olaf Wilke

What chemicals are emitted from office equipment, and what impact do they have?

Substances that are regulated by the Blue Angel Mark are benzene, styrene, ozone, dust, and Total Volatile Organic Compounds (TVOC). TVOC in particular is a sum value of chemical substances that may have an impact on health and are watched closely.

Regarding the certification of a private company as a testing laboratory

Although this was the first time we examined a private company, we conducted the same kind of examination as the one we do on specialized testing laboratories. We determined whether highly accurate tests based on Blue Angel Mark standards can be conducted. Also, because it was the testing laboratory of a manufacturer, the point we took particular note of was whether the system would allow test results to be disclosed properly while maintaining the independence of the sales division and measuring division. We visited Ricoh's testing laboratory and confirmed that both its measuring techniques and management ability are excellent, so we certified it. It is a welcome step also for a private company to receive certification because the reliable measuring of chemicals easily leads to the spread of user-friendly equipment.


BAM Headquarters in Berlin

2005

FOCUS 01

Chemical Substance Management in Cooperation with Suppliers

Imaging System Production Business Group
(Left) **Shunichi Ogawa**, Engineer, Procurement Development Group, Procurement Strategic Department, Procurement Control Center
(Right) **Susumu Kasa**, Deputy Manager, Procurement Strategic Group, Procurement Strategic Department, Procurement Control Center
(Center) **Susumu Takayama**, Assistant Manager, Planning Group, Parts Manufacturing Department, Imaging System Component Production Division

Ricoh works toward the total elimination of environmentally-sensitive substances in cooperation with its suppliers

In January 2005, Ricoh launched the Aficio 3260C/3245C (imagio Neo C600/C455), a color digital multifunctional copier, in response to the European RoHS Directive*, which is aimed at the total elimination of environmentally-sensitive substances contained in products. To this end, the procurement division, in addition to the design and manufacturing divisions, becomes an integral part for its role in establishing a production system that avoids contamination from environmentally-sensitive substances from the supplier's side, which is located upstream of all business activities. Ricoh's procurement division, working with roughly 1,000 suppliers and major production sites around the world, strives to establish and certify the Chemical Substance Management System (CMS) to avoid contamination by environmentally-sensitive substances.

* EU Restriction of Hazardous Substances Directive: An EU directive to restrict uses of specific chemical substances for electric and electronic instruments, which came into effect in 2003. Regulations will start on July 1, 2006.

CMS establishment and certification process

Briefing suppliers on CMS guidelines

↓

Assisting suppliers with their own CMS establishment

↓

Internal screening of suppliers

↓

Ricoh's screening (document screening/ field screening) Certification

INTERVIEW ⇒ Suppliers

Trading company — **Konishisangyo Co., Ltd. (acquired certification on January 13, 2005)**

Mr. Katsuhide Chiba,
Managing Director (left)
Mr. Makoto Tanaami,
Assistant Manager, Technical Quality Service (right)

"We supported the creation of CMS by suppliers, feeling that we belonged to the Ricoh Group."

Our first step was to create one CMS for one supplier.

When we were initially asked to create CMS, we were really puzzled as to how we were going to manage more than 40 suppliers. However, we were heartened by Ricoh's suggestion that we should first start with the creation of one CMS for one supplier.

Two employees completed Ricoh Group's CMS examiner training.

In order for us (a trading company) to create a CMS, we have to examine our suppliers in the same way Ricoh examines its suppliers. So, we asked Ricoh to hold CMS examiner training for two of our employees. When we conducted our first examination, we supported our suppliers, making good use of our experience as a supplier that had been examined and certified by Ricoh. As a result, the CMS was completed at the end of fiscal 2004, and we acquired certification at the beginning of fiscal 2005. We are committed to examining our more-than 40 suppliers while training our employees and accumulating know-how and experience.

Q What is the Chemical Substance Management System (CMS)?

A CMS is a system of preventing products from being contaminated with environmentally-sensitive substances.

To totally eliminate environmentally-sensitive substances from its products, the Ricoh Group needs to switch from the environmentally-sensitive substances used in parts, raw materials, and units to alternative substances and create a means of preventing products from being contaminated by such influential substances in the manufacturing processes of suppliers. CMS facilitate these efforts. Ricoh supports its suppliers by establishing and certifying CMS. Unlike EMS, there are no global standards for CMS. Therefore, the Ricoh Group prepared its own CMS guidelines[1] in April 2004 and revised them in November of the same year. These guidelines contain eight items, including the identification of substances prohibited by Ricoh[2] and those subject to the RoHS Directive, as well as procedures for establishing CMS.

1. See http://www.ricoh.com/environment/guideline/02.html.

2. See page 28.

Q What is most important part when creating a CMS?

A Promoting the scheme while taking into account the business type of the supplier is the main requirement.

Different suppliers have different potential contaminants, depending on what they deal in. There are eight business categories that are closely related to the Ricoh Group, namely, pressing, molding, cutting, rubber rollers, mechatronic parts, electronic parts, assembly, and trading. In April 2004, the Ricoh Group began briefing suppliers at major production sites around the world while training judges to screen and certify the CMS of suppliers. In Japan, one model company from each of the eight categories above was chosen, and judges were dispatched by Ricoh to support them in establishing CMS. All of those companies have since established and received certification for their own CMS between October 2004 and February 2005.

Briefing suppliers on CMS

Q What kinds of activities will be taken in the future?

A The establishment and certification of CMS will be completed prior to the enforcement of the RoHS Directive.

As additional CMS efforts, model suppliers will be benchmarked and our know-how will be provided to all suppliers throughout the world. Apart from primary suppliers, it is necessary to encourage similar efforts from secondary and tertiary suppliers to encompass the entire supply chain. To this end, we need to first of all train our primary suppliers, who have already established a CMS, to be judges so that they will be able to support, screen, and certify the CMS of secondary suppliers. Some form of support for this is already in place, such as judges from Ricoh accompanying primary trading companies when they visit secondary materials manufacturers. By September 2005, all primary suppliers for Ricoh's major domestic and overseas production sites are to have completed and obtained certification for their CMS. This will mean that global CMS will be established before regulations pursuant to the RoHS Directive will be enforced in July 2006.

INTERVIEW ⟹ Suppliers

Printing press — **IKURA SEIKI SEISAKUSYO Co., Ltd. (acquired certification on January 13, 2005)**

"Efforts were made to organize a system in which the mixing of prohibited chemical substances into parts and materials is avoided and such substances can be controlled and eliminated during procurement."

Mr. Osamu Akimoto,
Plant Manager, Director (left)
Mr. Tatsuya Todoroki,
Manager, Manufacturing Section (right)

Strict process management without the use of expensive measuring equipment

When we started creating CMS, we discussed whether we should purchase expensive measuring equipment or not. However, following Ricoh's advice to direct our efforts to process management, we decided against the purchase and instead focused on examining materials and goods and carrying out thorough process management. Although it is important to teach the fundamentals of chemical substances to workers in each process, we must learn to choose our words carefully. For example, saying such things as "Goods that you use unconsciously, such as markers or cellophane adhesive tape, may contain prohibited substances," may cause a panic among the workers. Therefore, our plan was to eliminate prohibited substances in the procurement process (at the purchase stage) in order for factory employees to work without worrying.

Utilizing Ricoh's information when examining materials and goods

For the materials and goods we were unable to examine, we made the most of Ricoh's accumulated information on the chemical substances they contain. Also, regarding some of the materials that contain prohibited chemical substances, we decided to limit the number of people in charge and conduct visual inspections. Thanks to the cooperation of not only Ricoh but also various other companies, including an oil and fat manufacturer, we were able to acquire CMS certification at an earlier stage.

To prevent errors during visual inspections, materials and goods are classified into (1) those that satisfy Ricoh standards and (2) others.

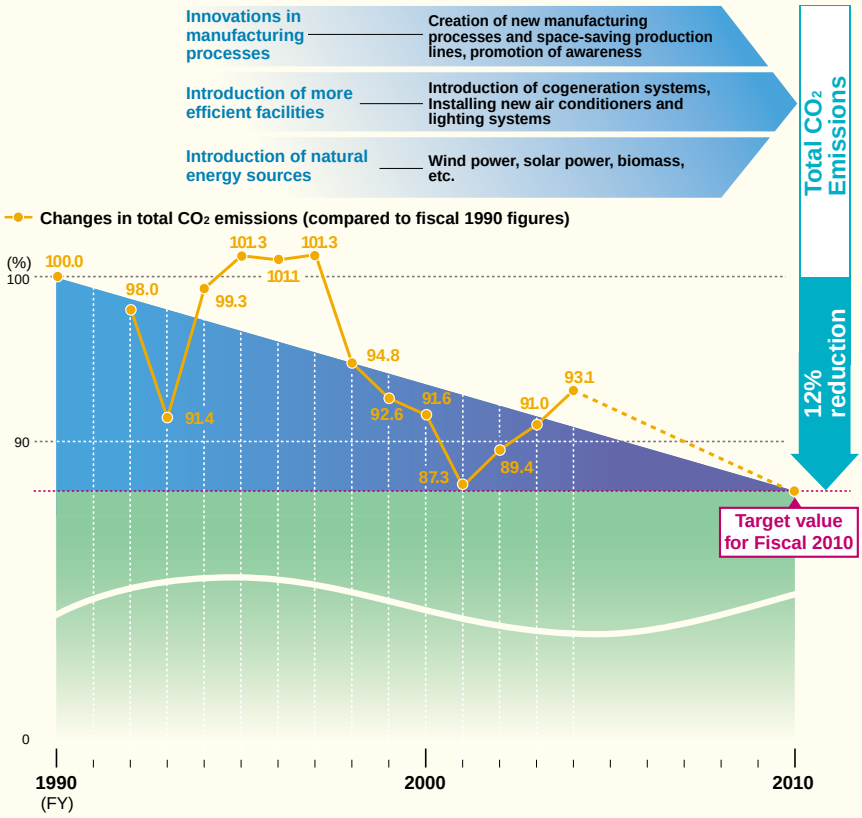
We will reduce total CO_2 emissions by 12% by the end of fiscal 2010 to help prevent global warming at a faster pace than set out in the Kyoto Protocol.

● Concept

The Ricoh Group has set goals that it wants to achieve by the end of fiscal 2010, aiming not only to attain the goals set out in the Kyoto Protocol, but also to lead the efforts to prevent global warming. Since a reduction in total CO_2 emissions is important in preventing global warming, the Ricoh Group companies in Japan have set a higher goal of reducing total emissions by 12% over the figures in fiscal 1990 by the end of fiscal 2010, compared with the goal for Japan of a 6% reduction set out in the Kyoto Protocol. Our group companies are striving to reduce global warming under this goal, which has been set in anticipation of an expansion in the scale of business. To attain this goal, the Ricoh Group is working to innovate its production processes[1], introduce more efficient facilities, and utilize natural energy sources. The Group positions its clean development mechanism (CDM)[2] as a scheme to prepare for the risks of unexpected expansions of production and fluctuating power supply rather than as a major CO_2 reduction measure. Efforts will be made to reduce greenhouse effect gases other than CO_2 by 10% over the level in fiscal 1995 by the end of fiscal 2010.

1. See page 35. 2. See page 37.

❶ Scenario for Reductions in Total CO_2 Emissions for Ricoh Group (production) in Japan up to Fiscal 2010



Segment Environmental Accounting of Energy Conservation Activities at Business Sites (The Entire Ricoh Group)

Costs			Effects			
			Economic benefits		Effect on environmental conservation	
Item	Main cost	Costs	Item	Benefits	Reduction item	Amount
Business area cost	Cost of global warming prevention	¥576.9 million	Reduction in lighting and heating expenses	¥284.6 million	CO_2 emissions	9,236.7 (t)

* Reduction in CO_2 emissions is a total of amounts reduced through measures to prevent global warming at production sites.

● Targets for Fiscal 2004 and Fiscal 2010

The Ricoh Group's Targets for Reducing CO_2 Emissions (Total Amount Emitted)

		Target for fiscal 2004	Target for fiscal 2010
Japan	Ricoh and Ricoh Group manufacturing subsidiaries	2% reduction (compared to fiscal 2000 figures)	12% reduction (compared to fiscal 1990 figures)
Japan	Ricoh Group non-manufacturing subsidiaries	2% reduction (company goals)	—
Outside Japan	Ricoh Group manufacturing subsidiaries	2% reduction (compared to fiscal 2000 figures)	10% reduction (compared to fiscal 1998 figures)

The Ricoh Group's Targets for Reducing Greenhouse Effect Gases Other Than CO_2 (Manufacturing, Total Amount Emitted)

	Target for fiscal 2004	Target for fiscal 2010
The Entire Ricoh Group	No more than a 1% increase (compared to fiscal 2000 figures)	10% reduction (compared to fiscal 1995 figures)

● Review of Fiscal 2004

CO_2 emission at production sites increased over the fiscal 2000 level (increased by 1.5% at home and by 2.2% abroad) (see graphs ❷ and ❺). This was because the increased energy consumption caused by the larger production of consumables supplied in Japan and France and the larger production of parts in China more than offset the amount of energy saved from improvements in manufacturing processes. CO_2 emissions at non-production sites decreased by approximately 1.1% over the previous fiscal year's levels (see graph ❸). New facilities were introduced for greenhouse effect gases other than CO_2 aiming at achieving the goal.

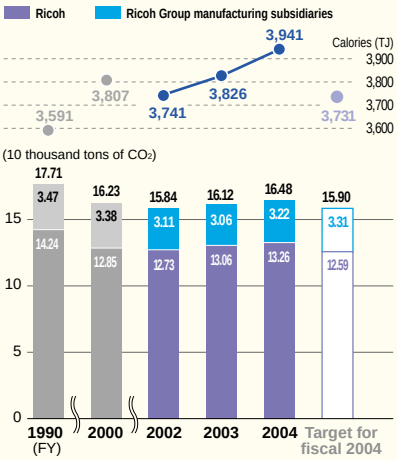
● Future Activities

In promoting activities to expand its business according to the 15th Medium-term Management Plan, which will start in fiscal 2005, Ricoh will strive to create a production process that uses less energy by taking various measures, such as developing an energy-saving production process through the concerted efforts of the development, design, and production divisions, to reduce CO_2 emissions at production sites. Additionally, efforts will be made to improve the energy efficiency of air-conditioning and illumination systems and introduce new energy sources as a long-term project. Ricoh will also promote the sharing and horizontal development of information on the improvement activities of each business site.

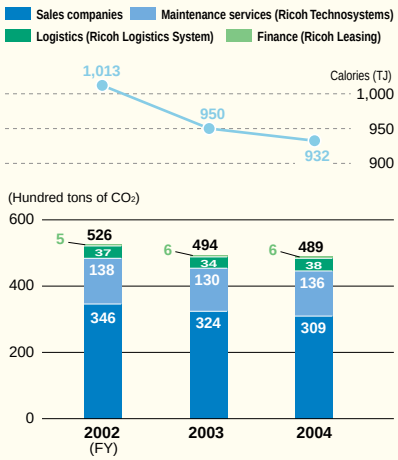
<Japan>

Energy Consumption (CO_2 conversion[1] and calories)

❷ The Ricoh Group (production)



❸ The Ricoh Group (nonproduction)



1. Calculated using a CO_2 emissions potential taken from an examination on greenhouse gas emission calculations issued by the Ministry of the Environment.

* Errors in converting to calories in graph ❸ are corrected retroactively.

Breakdown of Major Energy Consumption

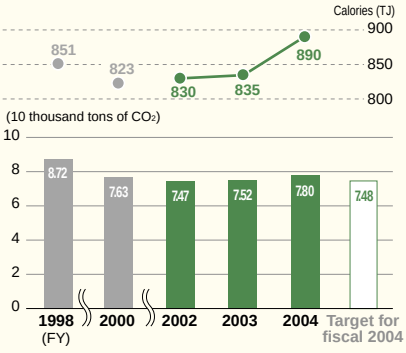
❹ The Ricoh Group (production)

	FY 2001	FY 2002	FY 2003	FY 2004
Kerosene (kℓ)	7,012	7,628	6,652	6,377
Heavy oil A (kℓ)	3,299	2,945	2,819	2,748
Town gas (1,000 m^3)	11,942	12,823	14,640	15,351
Electric power purchased (1,000 kWh)	281,175	284,554	289,770	298,640

<Outside Japan>

Energy Consumption
(CO_2 conversion and calories)

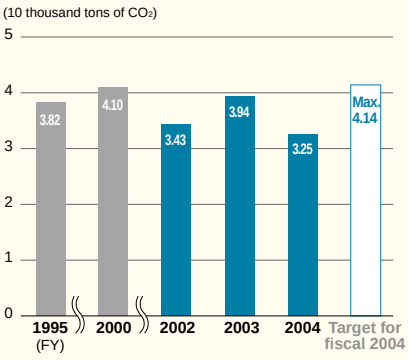
❺ The Ricoh Group (production)



<The Entire Ricoh Group>

Greenhouse Gas Emissions other than CO_2 [2] (CO_2 conversion)

❻ The Ricoh Group (production)



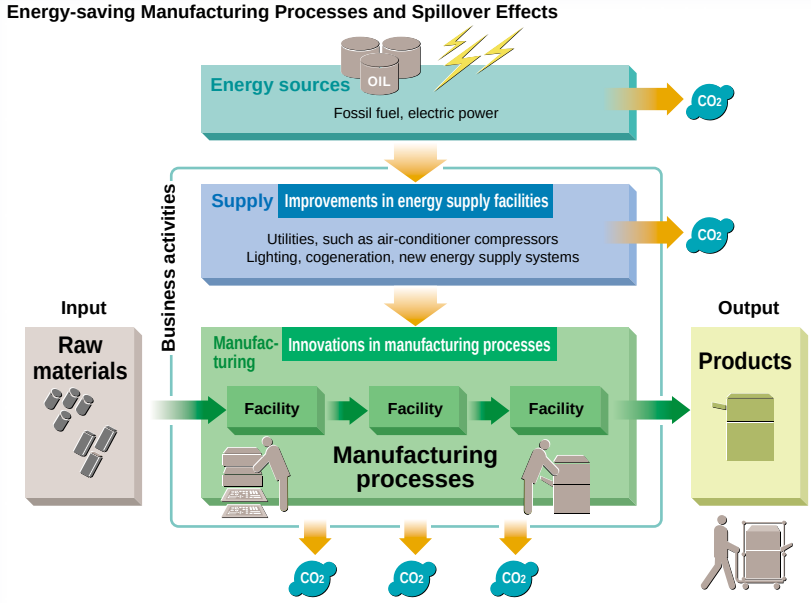
* The following formula was used to determine the greenhouse gas emissions.
Emission = Σ (amount emitted into the atmosphere × global warming potential)

2. NF_3 and substances that have a global warming effect and designated in the Kyoto Protocol

Innovations in Manufacturing Processes to Achieve the Goal of CO_2 Reduction <Ricoh Group (Japan)>

To achieve the ambitious goal of reducing CO_2 emissions by 12% of the fiscal 1990 level by fiscal 2010, the Ricoh Group established in fiscal 2004 an energy-saving production process committee made up of people in charge of the Group's major production sites in Japan. The committee checks the manufacturing processes of those production sites, identifies energy losses, and assigns a quota on reducing CO_2 emissions. Focusing on innovations in manufacturing processes may save energy at downsized production lines as well as have a spillover effect on associated equipment, such as air conditioners and air compressors, at production lines. The On-Demand Toner Filling Machine, developed in fiscal 2003, requires 1/40 of the installation space, and uses 1/4 of the electricity, compared with the conventional toner filler systems. This new machine also contributes to significant energy savings of associated equipment, such as air conditioners.

Energy-saving Manufacturing Processes and Spillover Effects



In fiscal 2004, downsized production lines for photosensitive materials used in copiers were put in operation. (See below.)

Small-lot production lines suited to meet market demand for multipurpose, high-quality products

Employee feedback

INTERVIEW — Downsized production lines for photoconductor

Innovations in manufacturing processes cut CO_2 emissions to 1/3.

Yoshihiro Yamaguchi
OPC Production Equipment Group
OPC Production Center
RS (Reprographic Supply) Products Division

Small, cost-effective, easy to carry, ready to use Appropriate for sustainable environmental management

Photosensitive materials used to be manufactured at large-scale facilities and were financially and environmentally adverse. For future expansion, we began developing innovative technologies and relevant equipment geared toward more efficient production around 2001. In 2002, we expected the demand for small photoconductor used in printers and color copiers to increase and drew up a plan to establish appropriate production lines at Ricoh Asia Industry (Shenzhen) Ltd. (RAI), one of the major manufacturing subsidiaries of the Ricoh Group in China. The need to customize super-cost-effective assembly lines for RAI became urgent. We were required to build production lines that were small, inexpensive, easy to carry, ready to use, and environmentally conscious enough to fall under sustainable environmental management.

Breakthrough development of a downsized production line

When manufacturing photoconductor, photosensitive agents must be used in a clean environment. Large production lines require a huge space, and thus consume a tremendous amount of energy to clean the air completely. We threw out our stereotypical idea of the conventional production line, i.e., aligning several tens of photoconductor on a palette, and devised a one-at-a-time production method for an ultimately small, cost-effective facility. Consequently, our new line requires approximately 1/4 or less the installation space* and about 1/3 the capital investment of conventional lines. Furthermore, a local air-conditioning system was adopted to clean the environment—a different approach from that of previous systems, which cleaned the air throughout the entire facility. This resulted in an air-conditioned area that is only 1/92 the size previously needed.

Inspiration to reconsider the manufacturing process leads to success

In September 2004, the first downsized mass production line was put in operation at RAI. CO_2 emissions per line were cut considerably, to less than 1/3, which was much more than the original goal. This satisfied all of our requirements, such as reducing the time needed to rinse without using detergents and completely eliminating industrial waste. For this project, I am convinced that the significant reduction in environmental impact that we achieved is attributable to a drastic reconsideration of the manufacturing process. We will build on this achievement to develop a mass production line with the same scale but more than double the productivity. In such a way, we can continue contributing to the sustainable environmental management.

* Ratio of facility area to per-unit production capacity

All-employee Participatory Activities for Energy Conservation

<Ricoh Gotemba Plant (Japan)>

In recognition of its continuous efforts to improve, Ricoh Gotemba Plant won the top prize, the Minister of Economy, Trade and Industry Prize (electrical division), for Energy Conservation Month in fiscal 2004. The plant uses energy mainly for its air conditioners, lighting systems, and manufacturing facilities. The plant, therefore, concentrated on these three areas in order to conserve energy. Members of the energy conservation committee promoted employee awareness and encouraged all employees to participate in environmental conservation activities while improving the cost-effectiveness of the plant's facilities. For example, the employees themselves installed motion sensor switches designed to be used in homes rather than the more costly models for office use to save the expenditure as well as eliminate labor costs. For the production area, a remotely controllable canopy switch has been installed to control the lighting system in each section. When the operation of air compressors, a major component of manufacturing facilities, was switched from around-the-clock use to use only when the production lines were running, employees took the initiation to make improvements themselves on production lines by taking countermeasures against air leakage.

Switching Boiler Fuel and Boiler Types

<Ricoh Yashiro Plant (Japan)>

To reduce CO_2 emissions, Ricoh Yashiro Plant switched its boiler fuel from kerosene to town gas (13A) and switched boiler types from fire-tube boilers to small, once-through boilers for higher cost efficiency. The project was funded by subsidies from the Ministry of Economy, Trade and Industry's program to encourage facilities that consume a considerable amount of energy to switch to natural gas. As a result, Ricoh Yashiro Plant increased its energy efficiency from 85–90% to 96% and reduced its annual CO_2 emissions by about 35% (1,720 tons/year), NOx by about 74% (according to the actual figure monitored), and SOx to zero.

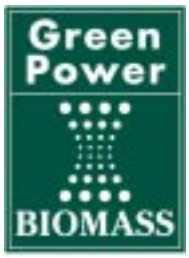
Introduction/Promotion of the Use of Natural Energy Systems

<Ricoh Unitechno, Tohoku Ricoh, Ricoh Elemex, Ricoh (Japan)>

Many of the Ricoh Group's plants are promoting the introduction of natural energy systems to utilize solar and wind power, as well as other natural sources. Ricoh Unitechno Co., Ltd. has reduced annual CO_2 emissions by 3 tons with a solar power generation system (10kW), while Tohoku Ricoh Co., Ltd. has achieved a 0.5-ton annual reduction in CO_2 emissions by using solar and wind power generation systems (1.5kW). Ricoh Elemex Corporation has reduced annual CO_2 emissions by 2.7 tons with a solar power generation system (6kW). In the meantime, Ricoh purchased energy produced by wind power from Japan Natural Energy Company Limited under the Green Power Certification System* in 2002, reducing annual CO_2 emissions by about 357 tons. Ricoh also concluded a five-year agreement in March 2003 to purchase biomass green electricity. This will lead to a reduction in annual CO_2 emissions of about 100 tons.

* This system is carried out by power companies to promote the expansion of natural energy.
http://www.natural-e.co.jp/english/press1-e.html#J01

Green Power certification mark



Reduction of Greenhouse Gases other than CO_2

<Ricoh Yashiro Plant (Japan)>

Ricoh Yashiro Plant, which manufactures semiconductors, carries out activities to reduce greenhouse gas (PFC) emissions by optimizing the flow of relevant processes. In fiscal 2004, additional PFC eliminators were installed, thereby reducing annual emissions by 1,700 tons (CO_2 conversion).

CarbonNeutral Office

<Ricoh UK Ltd. (United Kingdom)>

Ricoh UK Ltd., a sales company, is reducing CO_2 emissions generated by its head office by 731 tons/year through such energy-conserving efforts as upgrading the office lighting arrangement. In October 2004, the company successfully created a CarbonNeutral[1] head office in cooperation with Future Forests[2], a U.K. environmental consultancy that helps companies reduce or offset their CO_2 emissions. By shouldering the cost of planting 3,500 trees in Scotland, Ricoh UK offset 100% of the CO_2 emissions generated by its head office company cars, the electricity and gas used at the office, the trains/buses used by employees to commute, the airplanes used on business trips, and the hotels employees stayed at while on business trips. Ricoh UK plans to include company cars used to conduct field sales and services in its CarbonNeutral efforts in the future and to continue to look for ways to reduce CO_2 emissions still further by considering other energy saving opportunities.

1. "CarbonNeutral" describes a state in which CO_2 emissions are offset by the planting of trees and/or other natural means. CarbonNeutral is a registered trade mark of Future Forests.
2. http://www.futureforests.com/index.asp

Office of Ricoh UK Ltd.

Introduction of CDM

The Clean Development Mechanism (CDM) allows industrialized countries to conduct anti-global warming projects in developing countries, thereby helping those countries comply with their commitment to reduce greenhouse gas emissions specified under the Kyoto Protocol. If businesses in developed countries reduce greenhouse gases through projects in developing countries, they may use that reduction to achieve their own CO_2 reduction goals under certain rules. Developing countries benefit from this mechanism as well since they are given opportunities to receive investments and technology transfers. Ricoh uses CDM as one of its risk management strategies in achieving its CO_2 reduction goal for 2010, even if its production volume far exceeds expectation. When selecting CDM projects, Ricoh takes cost performance into account. In addition, by using networks that were created through environmental activities with environmental NPOs, Ricoh tries to choose projects that contribute to the conservation of ecosystems and improvement of living standards of the local people. In terms of the organizations that execute projects, Ricoh assesses their commitment to corporate social responsibility. In fiscal 2004, Ricoh signed agreements with the executing organizations on the following projects.

The Ricoh Group established the following criteria for the selection of CDM projects.

■ **Requirements for Ricoh's CDM projects**

① Projects should be valuable from the perspective of biodiversity and ecosystem conservation. As for environmental afforestation projects, they should be recognized by environmental NGOs.
② Projects should be socially recognized by every stakeholder.
③ Projects should satisfy the requirements described in ① and ② above and be approved by the CDM Council.

■ **Procedure to select projects and evaluation criteria**

Ricoh established evaluation criteria for each stage of selecting CDM projects, as shown below.

Procedure	Areas Evaluated
First evaluation	• Projects' basic elements
Second evaluation	• Value as a CDM project • Recipient country • Credit assessment of executing organizations/intermediaries
Third evaluation	• Contract

CDM Projects on Which Ricoh Signed Agreements in Fiscal 2004

Afforestation Project to Conserve Biodiversity <Ecuador>

In the Maquipucuna Nature Reserve and La Perla Forest in Ecuador, forests were cut down by stockbreeders who needed pastures for their cows, and the deforested areas were abandoned as the livestock business in Ecuador went into a recession. Conservation International (CI), an environmental NGO, has a plan to collect 15 different seeds to grow seedlings for reforestation purposes. CI plans to employ local people to conduct afforestation and maintain/manage virgin forests over the next five years. Ricoh decided to participate in this project because CI's project generates three benefits simultaneously, namely, ecosystem recovery, improvement in the local people's living standards, and CO_2 absorption through afforestation.

Wind Power Project <India>

The rapid economic growth in India has caused concern about the increased number of coal-fired power stations that satisfy the growing need for power. Ricoh is taking part in a number of wind power projects carried out in various parts of India. Switching from fossil fuel to wind energy can reduce CO_2 emissions.

Wind power facilities in India

Treadle Pump Project <India>

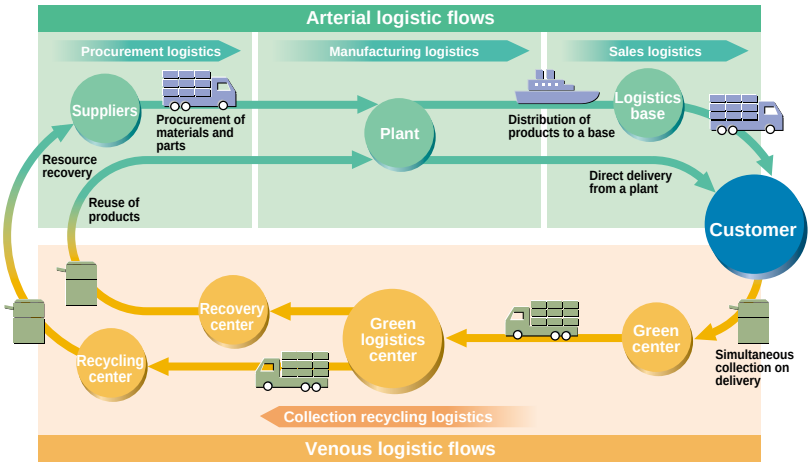
In India, small-lot farmers used to rent diesel pumps to draw underground water. In addition to their CO_2 emissions, diesel pumps were also a heavy burden for these farmers in rental fees and fuel costs. Ricoh participated in the project to introduce 20,000 treadle pumps.

Installation of a treadle pump

The Ricoh Group is working to reduce CO_2 emissions from transportation by creating a resource-recirculating logistics system and promoting modal shifts.

To achieve a sustainable resource-recirculating society, one important issue is the establishment of a logistics system for transporting products. The Ricoh Group is striving to create a resource-recirculating logistics system that integrates the arteries and veins of the logistics flow, including a system for direct transportation to and collection from customers. Another issue that Ricoh tackles is a reduction in environmental impact of transportation networks by promoting modal shifts and introducing low-emission vehicles. Examples that are successful in Japan will be introduced around the world, aiming at establishing global supply chain management (SCM).

Resource-recirculating Logistics System that Integrates the Arteries and Veins of the Logistic Flows (Japan)



Arterial logistic flows
- Establishment of a direct transportation system from plants to customers
- Modal shift from truck to railway and marine transportation
- Uses of reusable packaging materials

Venous logistic flows
- Establishment of a direct collection system for used products
- Expansion and improvement of infra-structure including collection centers

Promoting Modal Shift

<Ricoh Logistics System Co., Ltd. (Japan)>

Ricoh Logistics System Co., Ltd. is actively promoting a modal shift to transportation methods that have less environmental impact. The company shifted 25 transportation routes. For example, the transportation of large copiers from Tohoku Ricoh to the Sapporo, Osaka, and Kyushu areas, and toners from Fukui Plant to the Shizuoka, Kanagawa, and Osaka areas were shifted to railroads. The modal shifts so far have resulted in four maritime routes and 21 railroad routes.

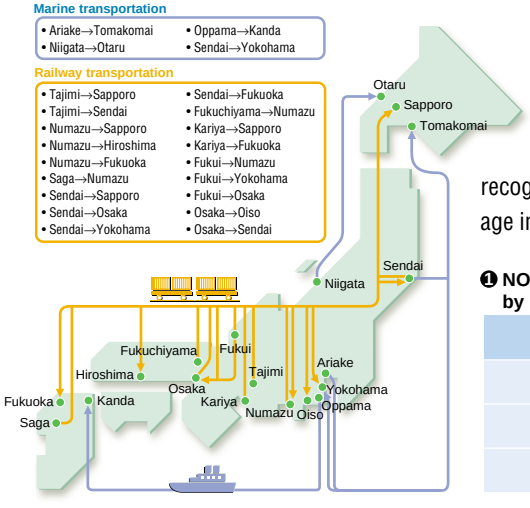
Major Cases of Modal Shift in Japan

Marine transportation

• Ariake→Tomakomai	• Oppama→Kanda
• Niigata→Otaru	• Sendai→Yokohama

Railway transportation

• Tajimi→Sapporo	• Sendai→Fukuoka
• Tajimi→Sendai	• Fukuchiyama→Numazu
• Numazu→Sapporo	• Kariya→Sapporo
• Numazu→Hiroshima	• Kariya→Fukuoka
• Numazu→Fukuoka	• Fukui→Numazu
• Saga→Numazu	• Fukui→Yokohama
• Sendai→Sapporo	• Fukui→Osaka
• Sendai→Osaka	• Osaka→Oiso
• Sendai→Yokohama	• Osaka→Sendai



These shifts contributed to a reduction of 3,718 tons of CO_2 emissions per year from transportation compared to when truck transportation was used.

Improvement in Vehicle Mileage and Introduction of Low-Emission Vehicles

<Ricoh Logistics System Co., Ltd. (Japan)>

Ricoh Logistics System Co., Ltd. is striving to improve vehicle mileage by utilizing digital tachometers and giving energy-conservation and safety education to drivers. As of March 2005, 60% of the vehicles (155 vehicles out of a total 261) were equipped with digital tachometers. As a result of drivers recognizing their own eco-drive levels, mileage improved by 25%. Other initiatives, such as improving transportation efficiency by introducing joint-delivery and roundtrip distribution, were taken to reduce fuel consumption.

❶ NOx and SOx Emissions in Transportation by Ricoh Logistics System

	NOx (t)	SOx (t)
2002	4.0	0.4
2003	2.6	0.4
2004	2.8	0.4

Promotion of an Eco-Drive Campaign

<Lanier (Schweiz) AG (Switzerland)>

In Switzerland, where there are relatively fewer industries that have a large environmental impact, reducing CO_2 emissions from transportation is important. Lanier (Schweiz) AG, a sales company, launched its company-wide Eco-Drive Campaign in 2004 for the prevention of global warming. In addition to the change from gasoline to diesel cars—started at the beginning of 2003—the company has prepared a course in "eco-driving" for all sales and service staff to show them how to reduce the fuel consumption of company cars. After receiving the "eco-driving" training, participants are encouraged to practice smart driving to reduce the average consumption and emissions. In fiscal 2004, CO_2 emissions fell 12% compared to the previous fiscal year thanks to the promotion of "eco-driving". Overall, a reduction of 26% has been achieved since the start of this program in 2003.

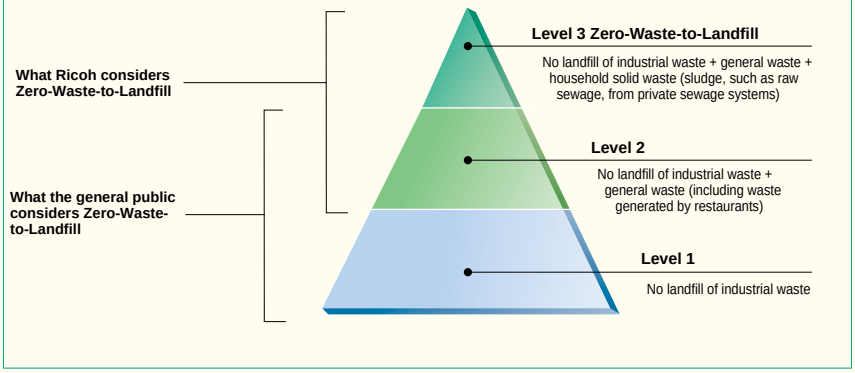
The Ricoh Group promotes Zero-Waste-to-Landfill activities at not only major production sites, but also nonproduction sites, including sales companies.

● Concept

The Ricoh Group is globally working to maximize resource productivity, primarily limiting the production of waste, reducing water consumption, and reducing paper consumption. The Ricoh Group promotes Zero-Waste-to-Landfill* activities as a part of its sustainable environmental management system by efficiently using resources, improving production efficiency, reducing waste disposal costs, and improving corporate quality by promoting employee awareness of environmental conservation. In fiscal 2001, the Ricoh Group achieved Zero-Waste-to-Landfill at its major global production sites. These activities are now promoted at non-production sites and sales companies in Japan as well as at sales companies outside Japan.

* Zero-Waste-to-Landfill means a 100% resource recovery rate and no waste used as landfill.

Definition of Zero-Waste-to-Landfill Levels by the Ricoh Group



● Targets for Fiscal 2004

◎ Reduce generated waste by at least 13% (Ricoh and Ricoh Group manufacturing subsidiaries, compared to fiscal 2000)
◎ Improve the waste recycling rate to at least 90% (Ricoh Group non-manufacturing subsidiaries in Japan)
◎ Reduce water consumption by at least 10% (Ricoh and Ricoh Group manufacturing subsidiaries, compared to fiscal 2000)
◎ Reduce paper purchases by at least 10% (Ricoh, Ricoh Group manufacturing subsidiaries, and Ricoh Group non-manufacturing subsidiaries in Japan, compared to fiscal 2000)

● Review of Fiscal 2004

Although the amount of waste generated was heightened due to the increase in production of supplies, the resource recovery rate is improving, even at non-manufacturing sites, with the progress of Zero-Waste-to-Landfill activities (see table ❹). The volume of industrial water used decreased, compared to the figures in the previous fiscal year, due to improvements in the production process. However, the goal was not achieved because production increased to a higher level than planned (see graph ❷). Paper purchases were reduced by 14.1% due to the positive use of duplex and n-up copying functions and the introduction of projectors to meetings.

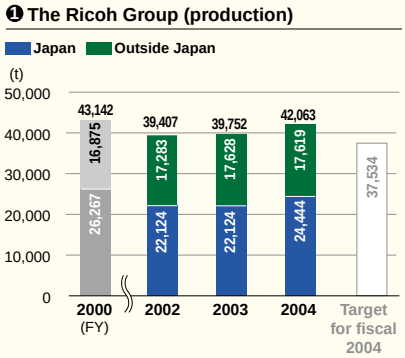
● Future Activities

The plan for fiscal 2005 and thereafter estimates a large-scale increase in production as a result of business expansion. To limit the generation of waste, Ricoh will promote improvements in the production process to make the most of resources at not only production sites but also the development and design divisions.

<The Entire Ricoh Group>

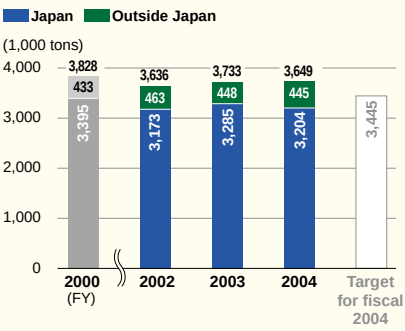
Total Amount of Waste Generated

❶ The Ricoh Group (production)



Volume of Industrial Water Used

❷ The Ricoh Group (production)



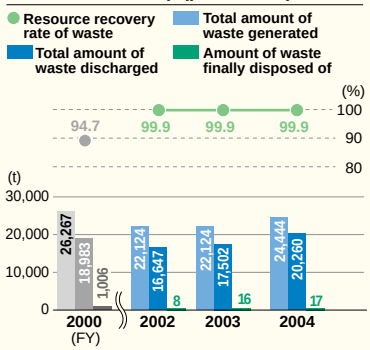
Segment Environmental Accounting of Recycling Activities at Business Sites (The Entire Ricoh Group)

Costs			Effects			
			Economic benefits		Effect on environmental conservation	
Item	Main cost	Costs	Items	Benefits	Reduction item	Amount
Business area cost	Resource circulation cost	¥1,094.4 million	Reduction in waste disposal expenses	¥12.3 million	Amount of waste disposed/ reduced	2.3 (t)
			Proceeds from sale of valuables	¥231.2 million		

<Japan>

Resource Recovery Rate of Waste/Total Amount of Waste Generated/Total Amount of Waste Discharged/Amount of Waste Finally Disposed of

❸The Ricoh Group (production)



❹The Ricoh Group (nonproduction)

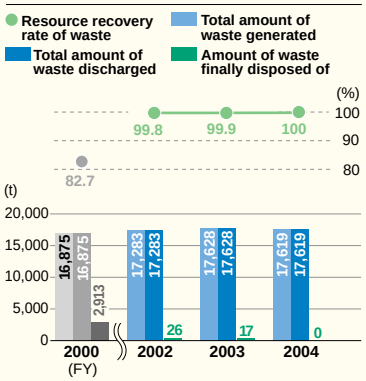
	Resource recovery rate of waste (%)	Total amount of waste discharged (t)	Amount of waste finally disposed of (t)
Sales Companies	85.2	2,255	335
Maintenance and Services (Ricoh Technosystems)	98.5	2,477	36
Logistics (Ricoh Logistics System)	96.7	3,773	124
Finance (Ricoh Leasing)	90.6	57	5

* At non-manufacturing subsidiaries, the amount of waste generated and the amount of waste discharged are the same, because waste is not processed at the business site. Therefore, only the total amount of waste discharged is listed.

<Outside Japan>

Resource Recovery Rate of Waste/Total Amount of Waste Generated/Total Amount of Waste Discharged/ Amount of Waste Finally Disposed of

❺The Ricoh Group (production)



Resource recovery rate of waste:
Amount of resource recovered/amount discharged
Total amount of waste generated:
Amount of waste generated at business sites
Total amount of waste discharged:
Amount of waste discharged outside business sites (including the waste undergoing disposal processing inside the plants)
Amount of waste finally disposed of:
Amount of discharged waste used in landfills and incinerated

* With the change in the method used to total the amount of waste at domestic business sites, data in graphs ❶, ❷, and ❸—except those for fiscal 2004—are revised.

Zero-Waste-to-Landfill Activities at Production Sites outside Japan

<Shanghai Ricoh Facsimile Co., Ltd. (China), Ricoh Wellingborough Products Ltd. (U.K.)>

Shanghai Ricoh Facsimile Co., Ltd. (SRF), and Shanghai Ricoh Digital Equipment Co., Ltd. (SRD), achieved Zero-Waste-to-Landfill in December 2004. Corner displays providing environmental information were set up to build environmental awareness among employees, and competitions for crafts using waste were held and participated in by all divisions. Searching for new recycling companies was also an important issue for both companies. In Shanghai, IC substrates, used toner, oily mops, and ballpoint pen refills are classified as “hazardous waste” and must be incinerated. However, because simply incinerating such waste does not satisfy Ricoh’s definition of Zero-Waste-to-Landfill, the companies had to look for a recycling company that provides an energy recovery service. Currently the companies sort waste into seven categories and plan to add subcategories to recycle into valuable resources. Ricoh Wellingborough Products Ltd., a manufacturing subsidiary in the United Kingdom, achieved Zero-Waste-to-Landfill in September 2004.

Maintenance of Zero-Waste-to-Landfill and Continuous Improvement Activities

<Ricoh Electronics, Inc. (United States)>

Ricoh Electronics, Inc., a manufacturing subsidiary in the United States, became a Zero-Waste-to-Landfill facility in February 2001. Since then the company has continued to promote the effective use of resources in various aspects, and reduce waste and emissions. REI established the Sustainability Improvement Sharing & Benchmarking System, which encourages employees to voluntarily submit process improvements that result in reduced environmental impact, and achieve high economic performance. In fiscal 2004, employees submitted 504 improvements, and recognition awards were given for each improvement. These improvements include the elimination of packaging materials used in packing thermal paper rolls, the reuse of laminated cardboard boxes and packaging paper used in packing parts, and improved efficiency in perforating sheet metal parts. These achievements were recognized by society as well; Ricoh Electronics was one of the top 10 companies in the Waste Reduction Awards Program that were recognized in December 2004 by the California Integrated Waste Management Board.

Zero-Waste-to-Landfill Activities at Outside Japan Sales Campanies

<Ricoh Europe B.V. (Netherlands)>

Zero-Waste-to-Landfill activities that started at production sites are now spreading to overseas non-production sites. In October 2004, Ricoh Europe (REBV), the European Regional Sales Headquarters, achieved Zero-Waste-to-Landfill status at both its office and spare part distribution center. The initiative got started by identifying types and volumes of waste being generated at the office and ESPC and cooperating in improving waste processing flow with recycling companies. To raise the awareness of its 400 staff members in sorting waste, an environmental promotion team was created. By producing posters illustrating types of waste, sorting and collection methods as well as indicating the amount of resources saved by Zero-Waste activities and promoting duplex copying and electronic files for the paperless office, the company continued its efforts to reduce resource use and raise awareness. The waste-processing cost decreased by 25% thanks to these efforts. Similar steps are expected to be taken at the branch office in Düsseldorf, Germany .

Waste-sorting corner at the Head Office

Poster

2005

FOCUS 02

Zero-Waste-to-Landfill Activities at Outside Japan Production Sites

Ricoh Industrie France S.A.S.
From left:
Hubert Schwanger, Vice President
Stephan Ruhlmann, Health/Safety/Environment Section
Laurent Cardot, Manager of the Health/Safety/Environment Section
Romuald Dotzler, Health/Safety/Environment Section

At plants in France, Zero-Waste-to-Landfill activities are promoted to achieve higher economic performance through the building of employees' environmental awareness.

Ricoh Industrie France S.A.S. (RIF), established in 1987, achieved level 3* Zero-Waste-to-Landfill in December 1999, making it Ricoh Group's first outside Japan production site to achieve that level. Although RIF produces copiers, toner cartridges, toners, and thermal paper, the plant is also positioned as the European product recovery center. Alsace, in the Eastern region of France, where RIF is located, is famous for its vineyards and has strict environmental regulations. The environmental awareness of the local community is also high. By achieving Zero-Waste-to-Landfill, RIF not only reduced environmental impact but also demonstrated that lower disposal costs contribute to bringing overall costs down. In October 2003, ECO' CLEANIC, which exhibits environmental conservation activities, was created. The displays are used to improve the quality of zero waste through employees' environmental awareness building and raising the awareness of zero waste in the local community. RIF continues its efforts to achieve a higher level through its Zero-Waste-to-Landfill activities.

* For information on the levels of Zero-Waste-to-Landfill. See page 39.

Sample Activity 1 Waste reduction through improvements in production processes

Thermal paper is produced by applying chemicals to paper. Because chemical mixtures vary depending on the type of product, a large amount of water is used to clean the pipes when a different product is manufactured. The amount of wastewater discharged was cut approximately 40% during the period from 2000 to 2004 by switching the pipe cleaning method to one that uses balls (cleaning the pipes pneumatically by putting balls inside the pipes) and making such improvements as integrating production processes by reducing the number of chemicals used from 29 to 6 with the support of the research and development division.

Cleaning the pipes pneumatically by putting balls inside the pipes

Sample Activity 2 Developing recycling routes with higher economic performance

Toner waste was sorted into two categories: waste containing iron and waste that does not. Waste that contains iron was recycled into roadbed materials, which generated processing costs. In 1998, a new recycling route that uses non-iron-containing toner waste as an additive in die making was developed, which made it possible to sell such waste for value and carry out recycling with a higher economic performance. Today, Ricoh UK Products Ltd., a manufacturing plant of the Ricoh Group, employs this processing route. Ricoh Electronics, Inc., in the Unites States, is also discussing using this route.

Production facilities for toners

Q What actions were taken to achieve Zero-Waste-to-Landfill?

A The Zero Waste Management Committee was established to study where waste comes from and how it is processed.

In January 1999, the Zero Waste Management Committee (which comprised staff from various divisions, including general affairs, procurement, technical, and research and development) was set up. The committee's aims were to achieve Zero-Waste-to-Landfill and a 15% cost reduction. First, committee members determined the amount of waste generated from each process. They discovered that the quantity of thermal paper waste and wastewater from the thermal paper production process and toner waste from the toner production process was large. The members then discussed ways to reduce such waste and enhance the sorting of waste and explored new processing routes. These initiatives led to the achievement of Zero-Waste-to-Landfill and a cost reduction that was far greater than the target of 15%. Fiscal 2004 saw a reduction of approximately ¥44 million in resource recovery cost as compared to that before achieving Zero-Waste-to-Landfill.

Resource sorting station at a plant

Q What improvement activities were taken after achieving Zero-Waste-to-Landfill?

A The company strove to cut costs even further and move up in level, from energy recovery to material recycling.

In October 2003, ECO' CLEANIC was created to improve the environmental awareness of all 1,000 members of the company, from employees to management. Everybody went through a one-hour environmental awareness building session. ECO' CLEANIC displays environmental conservation activities, i.e., what kinds of waste are generated, in what amounts, the production processes that generate such waste, how the waste is recycled, and the processing cost. All of these are explained in an easy-to-understand way, using actual samples and charts for 54 kinds of typical waste. Looking at these displays, employees could see the amount of waste generated, how waste is generated, and the current cost of processing waste, which led to their commitment to improving Zero-Waste-to-Landfill activities by submitting proposals. (See below.)

Now, before starting the production of a new product, the company estimates the kinds and amount of waste that will be generated and examines processing methods and routes. This is to deal with the potential risk of a sudden interruption in the resource recovery process.

Q What activities are planned for the future?

A Achievements in Zero-Waste-to-Landfill activities are shared with the local community to contribute to the creation of a sustainable society.

At ECO' CLEANIC, environmental issues, such as the relationship between environmental conservation by Zero-Waste-to-Landfill activities and economic performance, changes in methods of recycling polyethylene terephthalate bottles in France and how they are currently recycled, and what people should do as citizens to create a recycling-based society, are presented in an easy-to-understand way. Nearly 2,000 people, including teachers and pupils at local schools, government officials, and neighboring residents, have already visited ECO' CLEANIC. A half-day program, consisting of a learning session at the ECO' CLEANIC and plant tour designed for students, is available. By sharing the achievements of Zero-Waste-to-Landfill activities with society rather than keeping them within the plant, the company will contribute to the creation of a sustainable society.

A lecture for employees: Three staff members of the Health/Safety/Environment Section take turns giving a lecture.

Sample Activity 3

Promoting thorough sorting of wastes by building employee environmental awareness

Waste generated from the thermal paper production process is recycled into paper by material recycling, however if other substances are mixed in with thermal paper waste, the recycling process does not work. Therefore, once such a thing happens, recycling companies will refuse to accept thermal paper waste, which means the waste has to go to energy recovery. In order to raise employee awareness of the importance of waste sorting, a poster is placed in the sorting area to remind them that thorough sorting reduces not only environmental impact, but also processing cost by 83,000 euros a year.

Poster

ECO' CLEANIC

Overview of the ECO' CLEANIC setup inside the plant: Displays are arranged in a way that is easy for anyone, from children to Ricoh employees, to understand. To date, ECO' CLEANIC has had 2,948 visitors.

The Ricoh Group is engaging not only in control and reduction of the amount of chemical substances used and discharged, but also in prevention and remediation of soil contamination.

Concept

The Ricoh Group categorizes and controls chemical substances that are regulated in various countries around the world according to whether they are to be prohibited, reduced, or controlled. As for chemical substances classified as those to be reduced, the Ricoh Group is engaged in reduction based on a concept of risk management. This is a method to reduce chemical substances whose environmental impact is serious. The environmental impact is determined by calculating the amount of chemical substances used/discharged and the environmental impact potential*. The Ricoh Group also endeavors to reduce the amount of chemicals used and emitted by setting goals to reduce dichloromethane and ozone-depleting substances. Additionally, the Group sets a standard to prevent environmental risk from occurring. Based on the standard, each business site thoroughly controls the amount of chemicals used, emitted, discharged, and disposed of in order to prevent percolation or outflow to the environment. The Group also conducts surveys on soil and underground water contamination based on the recorded use of chemical substances and restores plants where pollution occurs.

* The environmental impact potential is set by Ricoh, taking toxicity, carcinogenicity, and the possibility of ozone depletion into consideration.

<The Entire Ricoh Group>

Amount of Environmentally Sensitive Substances Used and Emitted in Fiscal 2004

❶ The Ricoh Group (production)

Units: tons

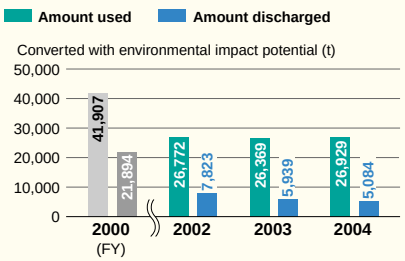
Substance	Environmental Impact Potential	Amount used[1]	Amount emitted[1]	Amount treated	Amount consumed	Amount emitted[2]	Amount transported	Amount disposed of	Amount recycled
Toluene	10	14,209	975	1,467.5	46.6	97.5	0.1	677.3	646.0
Dichloromethane	100	3,729	1,892	41.6	4.3	18.9	—	—	18.4
N, N-dimethylformamide	100	3,484	53	34.8	—	0.5	—	—	34.3
Nickel sulfate	100	234	0	5.7	3.3	—	—	—	2.3
Lead (Lead solder)	100	173	0	4.9	3.2	—	0.0	—	1.7
Xylene	10	78	67	7.9	0.1	6.7	—	0.0	1.1
Ethylene glycol	1	24	1	268.8	245.0	1.0	—	2.4	20.4
Zinc chloride	10	10	0	25.0	24.1	—	—	—	1.0
Antimony trioxide	100	8	0	1.4	1.3	—	0.0	—	—
Methyl methacrylate	1	7	0	7.3	—	0.1	—	5.0	2.2
Methacrylic acid	1	2	0	2.4	0.0	0.0	—	1.7	0.7
Thiourea	1	0	0	21.4	20.9	—	—	—	0.4
Poly(oxyethylene) alkyl ether	1	0	0	1.7	1.6	—	—	—	0.1

* Environmentally sensitive substances that are regulated by the Ricoh Group include all substances to which PRTR is applied. Substances listed are those treated in an amount of one ton or more annually. The amount of metal compounds is converted into metal.

1. The amount of the Ricoh Group's target substances for reduction used and discharged is calculated by using the following formula.
   Amount used = Σ {(amount – amount consumed) × environmental impact potential}
   Amount discharged = Σ {(amount emitted into air + amount discharged into public water supply + amount discharged into soil) × environmental impact potential}
2. Amount emitted = amounted emitted into air + amount discharged into public water supply + amount discharged into soil

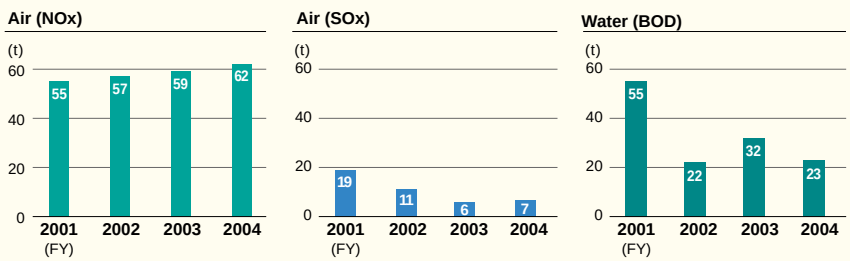
Changes in the Amount Used and Discharged of Ricoh Target Substances for Reduction

❷ The Ricoh Group (production)



Changes in the Amount of Nox, SOx and BOD

❸ The Ricoh Group (production)



* 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.

Segment Environmental Accounting of Pollution Prevention Activities at Business Sites (The Entire Ricoh Group)

Costs			Effects			
			Economic benefits		Effect on environmental conservation	
Item	Main cost	Costs	Items	Benefits	Items	Amount
Business area cost	Pollution prevention cost	¥397.7 million	Reduction in social cost	¥127.3 million	NOx SOx BOD PRTR substances (calculated with the conversion potential)	9.4 (t) –0.6 (t) 8.9 (t) 854.6 (t)
			Amount of risk avoidance effect (incidental effect)	¥5,936.0 million		

● Targets for Fiscal 2004

◎ Reduce environmentally sensitive substances (the Ricoh Group's target substances) to 8% of those used and 50% of those emitted (compared to fiscal 2000 figures).

◎ Completely eliminate the use of dichloromethane.

◎ Reduce emissions of ozone-depleting substances by 60% (compared to fiscal 2000 figures).

* Targets for Ricoh and the Ricoh Group's manufacturing subsidiaries in and outside Japan

● Review of Fiscal 2004

The amount of environmentally-sensitive substances used were reduced by 36% compared to the fiscal 2000 level but increased by approximately 560 tons[1] compared to that in the previous fiscal year. Emissions of these substances were reduced by 77% compared to the fiscal 2000 level and by about 860 tons[2] compared to that in the previous fiscal year (see graph ❷). Having completed the switch to an alternative solvent that we developed, we eliminated the use of dichloromethane in March 2005. The emissions of ozone-depleting substances were reduced by 88% compared to the fiscal 2000 level and by about 90 ODP-kg[3] compared to that in the previous fiscal year. Regarding the examination and purification of soil and underground water contamination, in addition to surveys and antipollution measures at production sites, we started research on non-production sites by collecting related information.

1. and 2. Both figures were converted with an environmental impact coefficient.
3. The figure was converted by ozone-depleting potential.

● Future Activities

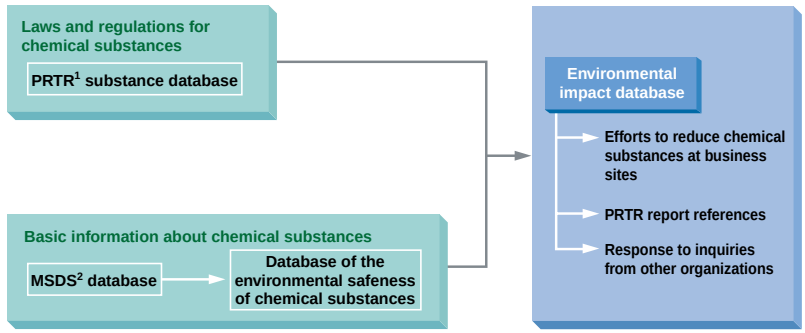
We will continue our efforts to reduce the use and emissions of chemical substances so that they are kept at current levels even though business operations will be significantly expanded in the Medium-term Management Plan for fiscal 2005 and thereafter. We completely eliminated the use of chlorine organic solvents at our production sites and plan to discontinue their use in the consignment production of photo conductors at plants other than Ricoh's. To deal with the issue of soil and underground water contamination, we will start a hearing and conduct surveys on non-production sites that have a high risk of contamination.

Chemical Substance Control Using IT System and Information Disclosure

<Ricoh Group (Global)>

The Ricoh Group established RECSIS to monitor data on chemical substances used, discharged, and disposed of at business sites. RECSIS is designed to promote reduction in the use of chemical substances, to prepare materials for PRTR reporting, and to speedily respond to inquiries from customers around the world, original equipment manufacturers, and citizens' groups.

Environmental and Chemical Safety Information System for Business Sites



1. Pollutant Release and Transfer Register
2. Material Safety Data Sheet

Discontinuing the Use of Chlorine Organic Solvents

<Ricoh Group (Global)>

The Ricoh Group endeavored to completely discontinue the use of chlorine organic solvents, which have considerable environmental impact. Dichloromethane, which is one such substance, was used to manufacture photoconductors for copiers already on the market. However, the Ricoh Group succeeded in developing an alternative solvent and improving production processes so that of the use of dichloromethane was completely discontinued by the end of fiscal 2004. This means that the Ricoh Group uses absolutely no chlorine organic solvents in any of its production processes.

Reduction in the Use and Emissions of Toluene

<Ricoh Numazu Plant, Fukui Plant (Japan)>

Toluene is the most used substance of all the chemicals that Ricoh uses in manufacturing products, but its environmental impact is considerable. Although toluene is used in producing supplies for copiers at Numazu Plant, the annual consumption of toluene was reduced by roughly 350 tons per year (converted) thanks to the development of a new production process.

At Fukui Plant, toluene is used in manufacturing thermal transfer ribbons, and the used toluene is recycled. The efficiency of this recycling process was improved, leading to a reduction of almost 520 tons per year (converted) of toluene.

Initiating the Examination and Purification of Soil and Underground Water at Non-Production Sites

<Ricoh Group (Global)>

Production sites are not the only ones faced with the risks of soil and underground water pollution. Even non-production sites are exposed to the same risks because there is the possibility that production was conducted there before we purchased them. In fiscal 2004, the Ricoh Group began examining soil and underground water at non-production sites, including sales companies, maintenance/service companies, and transportation/distribution companies, worldwide. Preliminary surveys were conducted to prepare a list of non-production sites that needed examination. The data that was collected to make this list is as follows: a listing of sites covered, business history from the start of operations to the present, production history (including the production of copiers and parts), and site history prior to the start of operations. Based on this data, pollution risks were classified into five levels. The Ricoh Group plans to sequentially examine the soil and underground water at sites with significant risks and survey the employees who work there. The company intends to complete its survey of all sites by fiscal 2007. For sites where pollution is detected, Ricoh will deal with the problem systematically.

Steps for Soil Examination at Non-Production Sites

- **Pollution is classified into five levels based on surveys and data (a listing of sites, types of operation, production history, and site history prior to the start of operations).**

A further examination is conducted, placing priority on sites that have a high level of pollution.

- **Surveys on the use of substances subject to examination, interviews, and field surveys are carried out.**

If substances that may contaminate soil were used

- **Gas and surface soil are examined, drilling surveys are conducted, and a monitoring well is set up.**

If pollution is detected

- **Improvements are made according to a schedule, and risk management is carried out.**

Examination and Purification of Soil and Underground water at Production Sites

<Ricoh Group (Global)>

Thinking it important to address the problems of soil and underground water pollution, the Ricoh Group started to examine and purify soil and underground water at its production sites in Japan in 1992. Subsequently, in 1999 a committee linking employees directly with the management teams of Ricoh and other Ricoh Group companies was established. In fiscal 2001, the Ricoh Group began examining and improving the soil and underground water at production sites outside Japan. Based on the history of their use of chlorine organic solvents and heavy metals, overseas production sites and R&D facilities that were possibly polluted were identified. An investigation into whether the soil and underground water at these sites were actually polluted was conducted. 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. The table on the right page shows the results of an underground water examination conducted as of March 2005. At the production sites where pollution was detected, detailed examinations and purification activities are now being conducted. At all production sites surveyed, including those where pollution was detected, no harmful influence over the surrounding areas has been found. 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 2004, the Ricoh Group spent approximately ¥1,280 million on examinations and purification activities in Japan, and will spend approximately ¥1,090 million until the completion of its purification activities.

In December 2004, a trace of fluorine pollution was detected at Ricoh's borrowed premises (Atsugi, Kanagawa Prefecture). This was discovered when the soil was examined at the time the borrowed land was returned to the owner in accordance with the provision (revised in October 2004). Ricoh immediately set up an antipollution team consisting of Ricoh staff and experts to draw up a purification program. Ricoh reported this to the landowner as well as to the people and municipalities concerned and completed the purification of the premises by the end of March 2005.

Removing polluted soil (at Ricoh Ohmori Office)

Soil improvement work at borrowed premises

❶Survey Results of Underground Water Pollution and Purification Efforts at Ricoh Production Sites and the Ricoh Group's Manufacturing Subsidiaries in Japan (As of March 2005)

Business site	Pollutant (Japan's environmental standard)	Survey result	Measures in implementation	Measures implemented
Ricoh Hatano Plant	Chlorine organic solvents Heavy metals, etc.	Cleaning completed (fiscal 1993) No pollution	——	Soil was removed.
Ricoh Numazu Plant, North Plant	Chlorine organic solvents Heavy metals, etc.	Cleaning completed (fiscal 1999) No history of use	——	The neutralization of gas and purification of underground water were completed.
Ricoh Numazu Plant, South Plant	Chlorine organic solvents Heavy metals, etc.	Cleaning completed (fiscal 1999) No pollution	——	Soil was removed.
Ricoh Ohmori Office	Trichloroethylene (0.03mg/L) Cis 12 dichloroethylene (0.04mg/L) Tetrachloroethylene (0.01mg/L) Heavy metals, etc.	0.242mg/L 0.0793mg/L 0.0120mg/L No pollution	• Purification of underground water • Regular monitoring	Soil was removed. The neutralization of gas was completed.
Ricoh Optical Industries*	Trichloroethylene (0.03mg/L) Cis 12 dichloroethylene (0.04mg/L) Tetrachloroethylene (0.01mg/L) Lead (0.01mg/L) Arsenic (0.01mg/L)	1.16mg/L 0.407mg/L 0.206mg/L 0.048mg/L 0.015mg/L	• Purification of underground water • Regular monitoring	The heavy metals are possibly nature derived (approved by the municipality).
Hasama Ricoh	Chlorine organic solvents Heavy metals, etc.	Cleaning completed (fiscal 2000) No pollution	——	Soil was removed.
Tohoku Ricoh	Cis 12 dichloroethylene (0.04mg/L) Trichloroethylene (0.03mg/L) Arsenic (0.01mg/L)	0.032mg/L 0.005mg/L 0.032mg/L	• Purification of underground water • Regular monitoring	Soil was removed. The neutralization of gas was completed. The arsenic is possibly nature derived (approved by the municipality).
Ricoh Elemex, Okazaki Plant	Trichloroethylene (0.03mg/L) 11-dichloroethylene (0.02mg/L) Tetrachloroethylene (0.01mg/L) Hexavalent chromium (0.05mg/L) Cadmium (0.01mg/L) Lead (0.01mg/L)	6.8mg/L 0.41mg/L 0.019mg/L 2.9mg/L 0.18mg/L 0.014mg/L	• Containment and purification of underground water • Neutralization of gas, Purification of underground water • Regular monitoring	
Ricoh Elemex, Ena Plant	Trichloroethylene (0.03mg/L) Cis 12 dichloroethylene (0.04mg/L) Hexavalent chromium (0.05mg/L) Arsenic and its compounds (0.8mg/L)	5.4mg/L 3.6mg/L 0.36mg/L 2.6mg/L	• Containment and purification of underground water • Neutralization of gas, Purification of underground water • Regular monitoring	
Ricoh Keiki	11-dichloroethylene (0.02mg/L) Heavy metals, etc.	0.017mg/L No pollution	• Purification of underground water • Regular monitoring	Soil was removed.

• No pollution: No pollution was detected where pollutants were used.
• The areas surrounding all business sites, including the above-mentioned sites, are not affected by pollutants.
* At Ricoh Optical Industries, a new source of lead contamination was discovered in soil surveys conducted in April 2004, and purification efforts were started in August 2004.
* All information, including business sites with no history of pollution, is shown on the Web site (http:/www.ricoh.com/environment/data/survey.html).

❷Survey Results of Underground Water Pollution and Purification Efforts at the Ricoh Group's Manufacturing Subsidiaries Outside Japan (As of March 2005)

Business site	Pollutant	Survey result	Measures in implementation	Measures implemented
Ricoh Electronics Inc., Irvine Plant (U.S.A.)	Cis 12 dichloroethylene Trichloroethylene Tetrachloroethylene Selenium	0.29mg/L 0.27mg/L 18mg/L 0.053mg/L	• Purification of underground water • Regular monitoring	Soil was removed.
Ricoh Electronics Inc., Tustin Plant (U.S.A.)	Chlorine organic solvents Heavy metals, etc.	No pollution No pollution	——	
Ricoh Electronics Inc., Santa Ana Plant (U.S.A.)	Chlorine organic solvents Heavy metals, etc.	No history of use No history of use	——	History of pollution caused by leakage of oil (purified)
Ricoh Electronics Inc., Georgia Plant (U.S.A.)	Chlorine organic solvents Heavy metals, etc.	No history of use No history of use	——	
Ricoh Industrie France S.A.S. (France)	Tetrachloroethylene Heavy metals, etc.	0.042mg/L No history of use	• Purification of underground water • Regular monitoring	The neutralization of gas was completed.
Ricoh UK Products Ltd. (U.K.)	Chlorine organic solvents Heavy metals, etc.	No pollution No pollution	——	
Ricoh Wellingborough Products Ltd. (U.K.)	Chlorine organic solvents Heavy metals, etc.	No pollution No pollution	——	
Ricoh Asia Industry (Schenzhen) Ltd. (China)	Chlorine organic solvents Heavy metals, etc.	No history of use No history of use	——	
Shanghai Ricoh Facsimile Co., Ltd. (China)	Chlorine organic solvents Heavy metals, etc.	No history of use No history of use	——	

• No pollution: No pollution was detected where pollutants were used.
• The areas surrounding all business sites, including the above-mentioned sites, are not affected by pollutants.

We are promoting participatory sustainable management by all employees based on the Plan-Do-Check-Action (PDCA) cycle for the entire Group, including each business site and division.

The Ricoh Group's environmental management system (EMS) is an important tool in facilitating sustainable environmental management on a global scale. The Ricoh group as a whole, and each of its business sites and divisions, is promoting participatory sustainable environmental management by all employees based on the PDCA cycle. The achievements of the environmental action plan prepared by each business site or division are evaluated in management reviews* using environmental accounting. Furthermore, based on the Group-wide Strategic Management by Objectives (SMO), which takes an environmental conservation perspective, the Ricoh Group continually evaluates the business performance of its divisions. Sustainable environmental management will be further promoted by incorporating EMS into the business process by product.

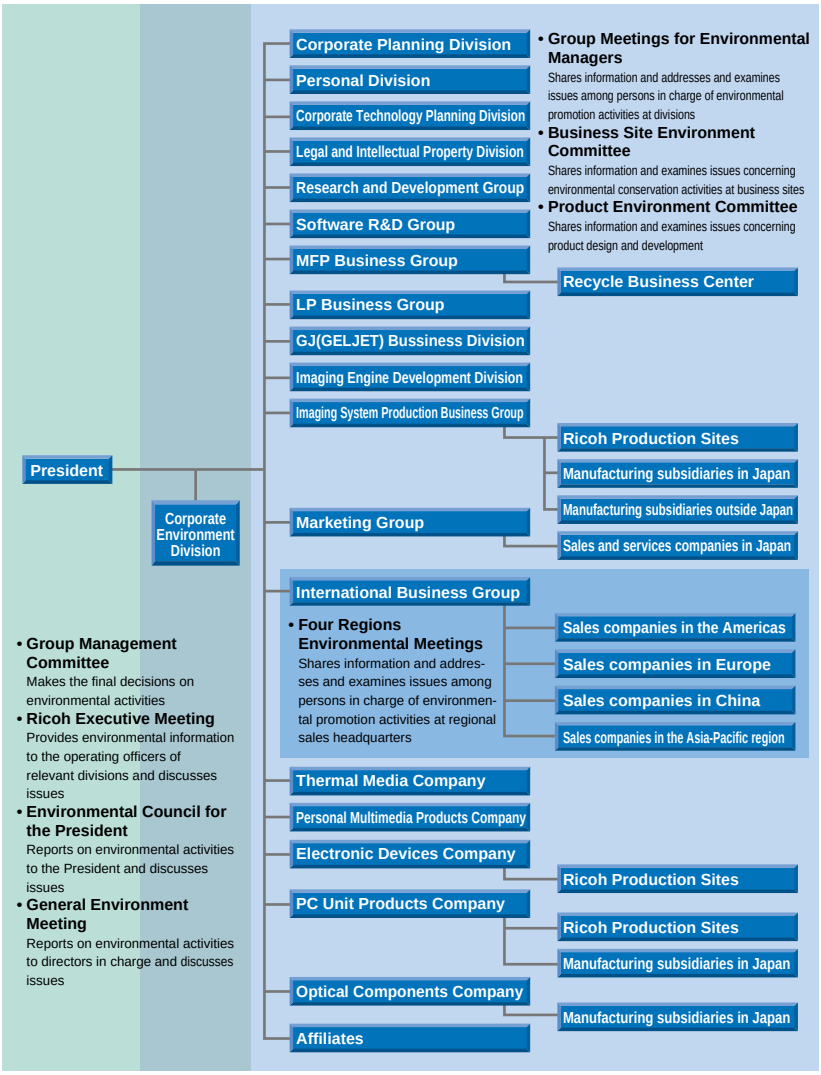
* The review is conducted by management to ensure the appropriateness and efficiency of EMS.

Acquisition of ISO 14001 Certification

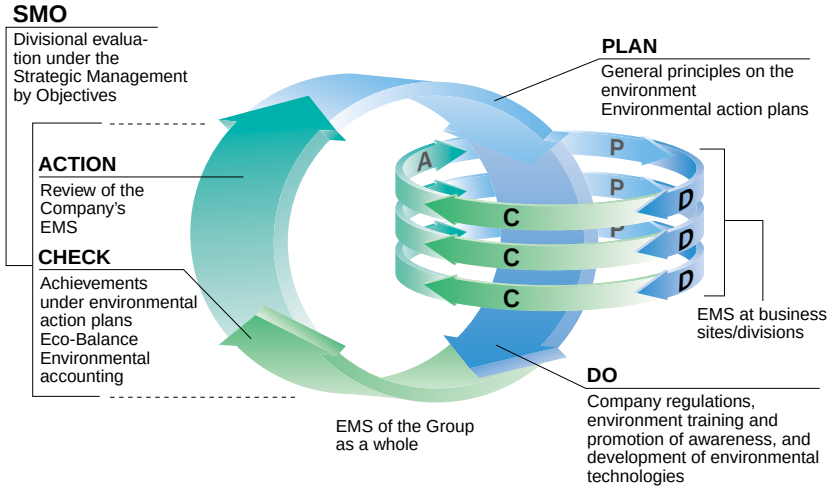
To realize sustainable environmental management, the Ricoh Group has been making every effort to establish its EMS. Starting with Ricoh Gotemba Plant, which received ISO/DIS 14001 certification in 1995, all major Ricoh production sites in the world were ISO 14001 certified as of March 2000. In 2001, the sales group in Japan as a whole was ISO 14001 certified. Sales companies other than those in Japan are also making every effort to acquire ISO 14001 certification. Regarding the companies and sites that newly joined the Ricoh Group, a standard has been set in which they are required to obtain ISO 14001 certification within three years.

* For the status of the Ricoh Group's ISO 14001 acquisition, please visit http://www.ricoh.com/environment/base/iso.html

Organizational Chart for the Ricoh Group's Sustainable Environmental Management System



EMS of the Ricoh Group



Participatory Approach by All Employees

The Ricoh Group is making an effort to improve sustainable management based on a "all-employee participatory approach." This "all-employee participatory approach" means that all employees in all divisions, such as R&D, product design, materials procurement, manufacturing, transportation, sales, maintenance/services and collection and recycling, participate in environmental activities. These activities are regarded as just as important as "QCD activities,"* which involve pursuing profitability. To improve environmental activities, internal benchmarks and know-how are provided to all employees from time to time to make them more environmentally aware.

* QCD means activities to improve the management of Quality, Cost, and Delivery.

Strategic Management by Objectives (SMO)

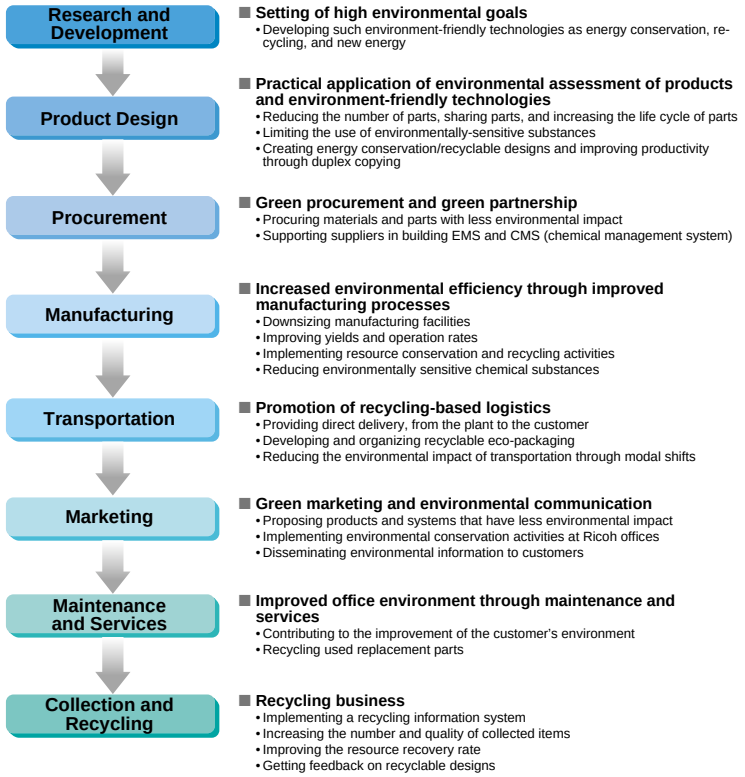
Ricoh introduced SMO in 1999 to clarify evaluation standards for environmental conservation activities that are used in divisional performance evaluations. This system is based on the Balanced Scorecard system, a performance management system developed in the 1990s in the United States and characterized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

Promotion of Sustainable Environmental Management by Sales Companies

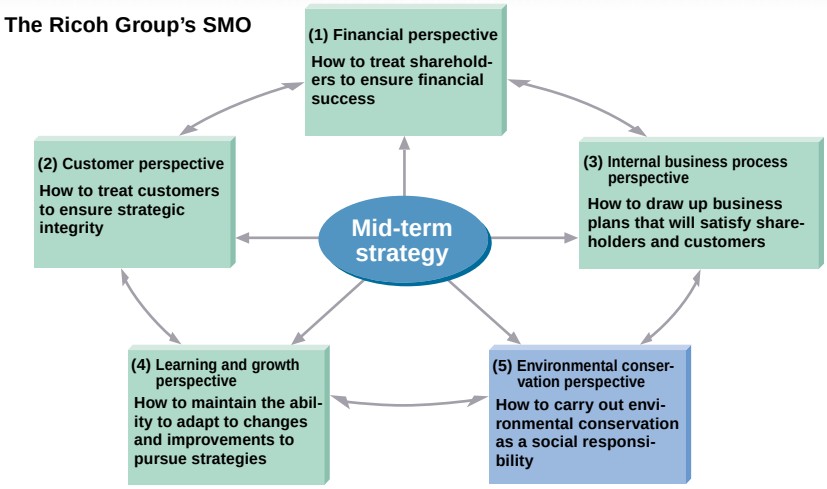
All sales companies in Japan, Europe, and the Asia-Pacific region have developed their own programs to evaluate the performance of sustainable environmental management and promote these programs based on the PDCA cycle. European sales companies have been implementing the Sustainability Self-Assessment Program (SSAP)* since fiscal 2002. SSAP contains evaluation categories that cover not only such environmental aspects as collection and recycling and energy/resource conservation but also social responsibility. Sales companies in the Asia-Pacific region have been conducting Sustainable Environmental Management Evaluations since fiscal 2002 as well. In Japan, sales companies began carrying out evaluations based on the Sustainable Environmental Management Improvement Evaluation System in fiscal 2003. Activities are assessed from three perspectives—environment, economy, and process—and awards are given according to the level of improvement based on the assessment. This program helps improve sustainable environmental management by all sales companies.

* For more information, please visit http://www.ricoh.com/environment/ report/pdf2004/21-22.pdf.

Sustainable Environmental Management Activities Participated in by All Employees



The Ricoh Group's SMO



The Sustainable Environmental Management Information System supports the decision-making process concerning sustainable environmental management and promotes environmentally conscious design.

The Sustainable Environmental Management Information System is designed to identify and promote the progress of sustainable environmental management. The system utilizes the Environmental Impact Information System to collect and process data about environmental impact and the Environmental Accounting System to collect and process data on environmental costs and effects. The collected data are processed and analyzed to identify the Eco Balance[1] of overall operations; draw up environmental action plans[2]; support decision-making in sustainable environmental management; promote environmentally conscious designs[3]; improve activities by each division; process Corporate Environmental Accounting[4]; and disclose information to the public.

1. See page 51. 2. See page 11.
3. See page 15. 4. See page 55.

Environmental Impact Information System

This system collects and processes data on environmental impact caused by each operational process, including procurement, design, manufacturing, transportation/sales, use, maintenance/services, and collection/recycling, as well as by overall operations.

Besides identifying the environmental impact of overall operations, the system automatically collects environmental data from the operational flow of each process, and such data is used to support PDCA in environmental improvement activities carried out at each process.

Environmental Accounting System

This system enables “Corporate Environmental Accounting” in a timely manner by collecting data on environmental conservation effects obtained from the Environmental Impact Information System and environmental cost data obtained from the accounting system, and processing this into sustainable environmental management indicators.*

*See page 54.

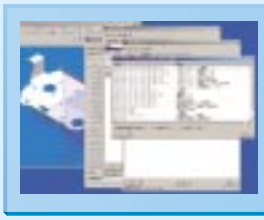
Sustainable Environmental Management Information System

Environmental Impact Information System

Procurement

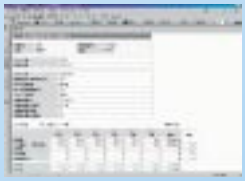
This system promotes green procurement in accordance with environmental action plans and information on laws and regulations. The system collects information on weight, component substances, and chemical substances in raw materials and parts by utilizing a network of suppliers. In fiscal 2004, this system was completed at major production sites in China.

Design



This is a system to select the most suitable materials and parts from the viewpoint of environmental conservation and costs in order to promote environmentally conscious design. This CAD system works in tandem with the procurement management system and the chemical substance management system.

Manufacturing



This system identifies the environmental impact caused by operations. It collects data on power consumption, the quantity of chemical substances used, CO_2 emissions, and waste discharged by all offices and sites, including production sites and non-production sites, such as Ricoh Head Office. In fiscal 2004, major production sites outside Japan completed the building of this system.

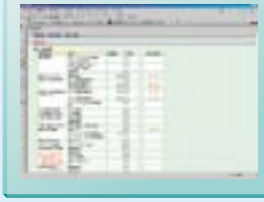
Transportation/Sales

This system collects data on power consumption as well as the amount of gasoline used and waste generated in order to reduce the environmental impact caused by logistics sites, transportation processes, and sales sites. The collected data are used to support the PDCA cycle of EMS at each site. In fiscal 2004, all logistics sites in Japan completed the building of this system.

Use

This is a system to share data about environmental performances by product (power consumption, duplex copying productivity, recyclable design, etc.) and use such data for environmentally conscious design and information disclosure in catalogs. This system compiles environmental impact information by product based on design data.

Maintenance/Services



This is a system to identify and analyze environmental impacts caused by maintenance work on products. This system collects related information from the database of product maintenance records and the database of power and gasoline consumed in the maintenance sites.

Collection/Recycling

This system provides an information infrastructure to utilize plans that were prepared at the design stage for the reuse or recycling of collected products and to store detailed information on the resource recovery process.

Data to process information collected

• Number of units produced (by process) • Weight of products • Value of sales
• Allocation information (relations between divisions/facilities and products)

Environmental impact information

Environmental accounting information

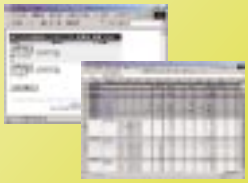
Integrated database

Analysis of information

Processing of information

Information needed for promoting PDCA (Plan-Do-Check-Action)* is output.

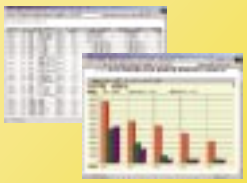
*See page 47.



Identifying Eco Balance

Using a sustainable environmental management information system, we collect extensive and diversified data covering all the operations of the Ricoh Group, allowing us to calculate the integrated environmental impact to determine the eco balance.

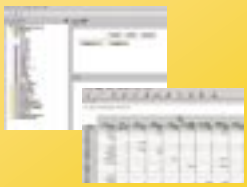
See page 51.



Preparing and Managing Environmental Action Plans

An action plan is drawn up based on the integrated environmental impact calculated by the sustainable environmental management information system. Reduction targets are also established in the plan. We identify problems early by introducing automatic aggregation and continuously monitoring the results, allowing us to take actions to address them.

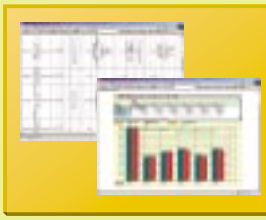
See page 11.



Sustainable Environmental Management Indicator

The cost effectiveness of our environmental improvement activities is calculated and used as an indicator to help promote sustainable environmental management.

See page 54.



Environmentally Conscious Design

The sustainable environmental management information system is used together with our product lifecycle management tool to enable designers to incorporate environmental performance into product design in areas such as energy/resource conservation, controlling and improvement of chemical reduction targets, and reduction of integrated environmental impact through designs based on LCA (life cycle assessment).

See page 15.

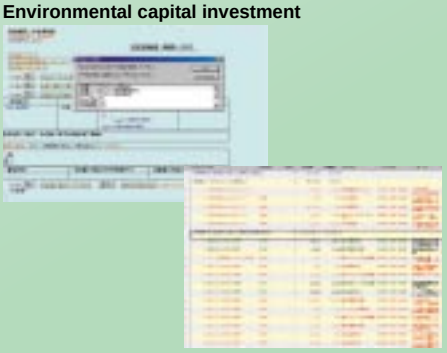
Environmental Accounting System

Accounting System

A space to enter the environmental accounting code was added to the accounting system to determine the cost of environmental conservation. Using information compiled on a daily and hourly basis makes it possible to calculate the cost of environmental conservation.

Environmental expenses

Environmental capital investment



Aggregate Database of Environment Accounting

Data on the economic benefits of environmental conservation activities and the environmental conservation costs/economic benefits for each company in the Ricoh Group are input to the aggregate database of environmental accounting on a quarterly or biannual basis to calculate these figures every six months.

The Eco Balance data on environmental impacts caused by overall business activities are utilized for establishing long-term targets and action plans.

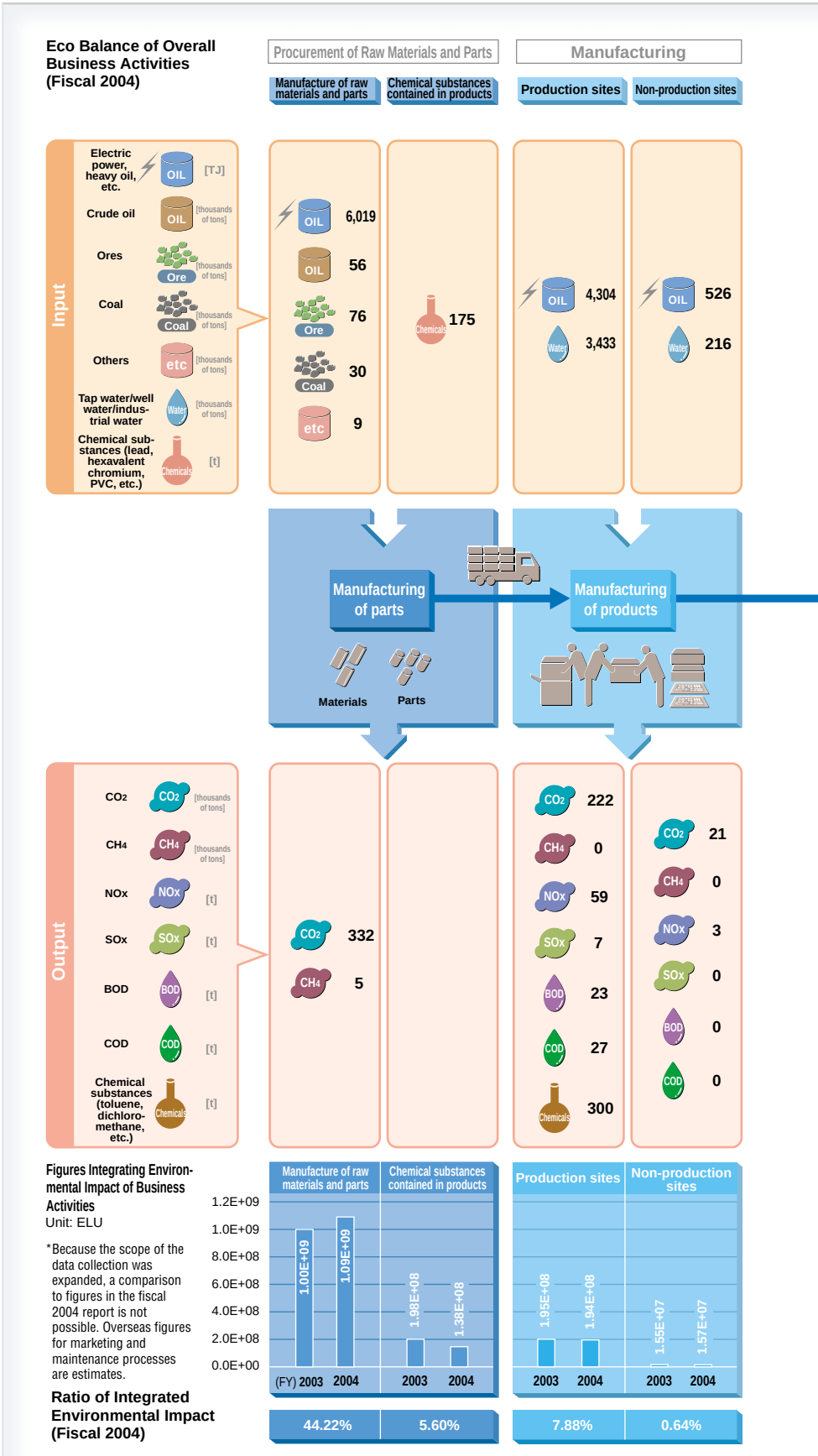
To effectively reduce the impact of processes with larger environmental impacts on a priority basis, the Ricoh Group identifies the environmental impacts of overall business activities and per process using Eco Balance.[1] Eco Balance shows the numerical data of all environmental impacts caused by business activities, such as effects on human health, resource depletion and effects on the ecosystem. These numerical data were obtained by applying the integrated analysis method[2] of the data collected by the Sustainable Environmental Management Information System.[3] Based on the evaluation of the "integrated environmental impact" that was identified by "the Eco Balance", "the Year 2010 Long-Term Environmental Goals"[4] and "the Environmental Action Plan"[5] are estalished.

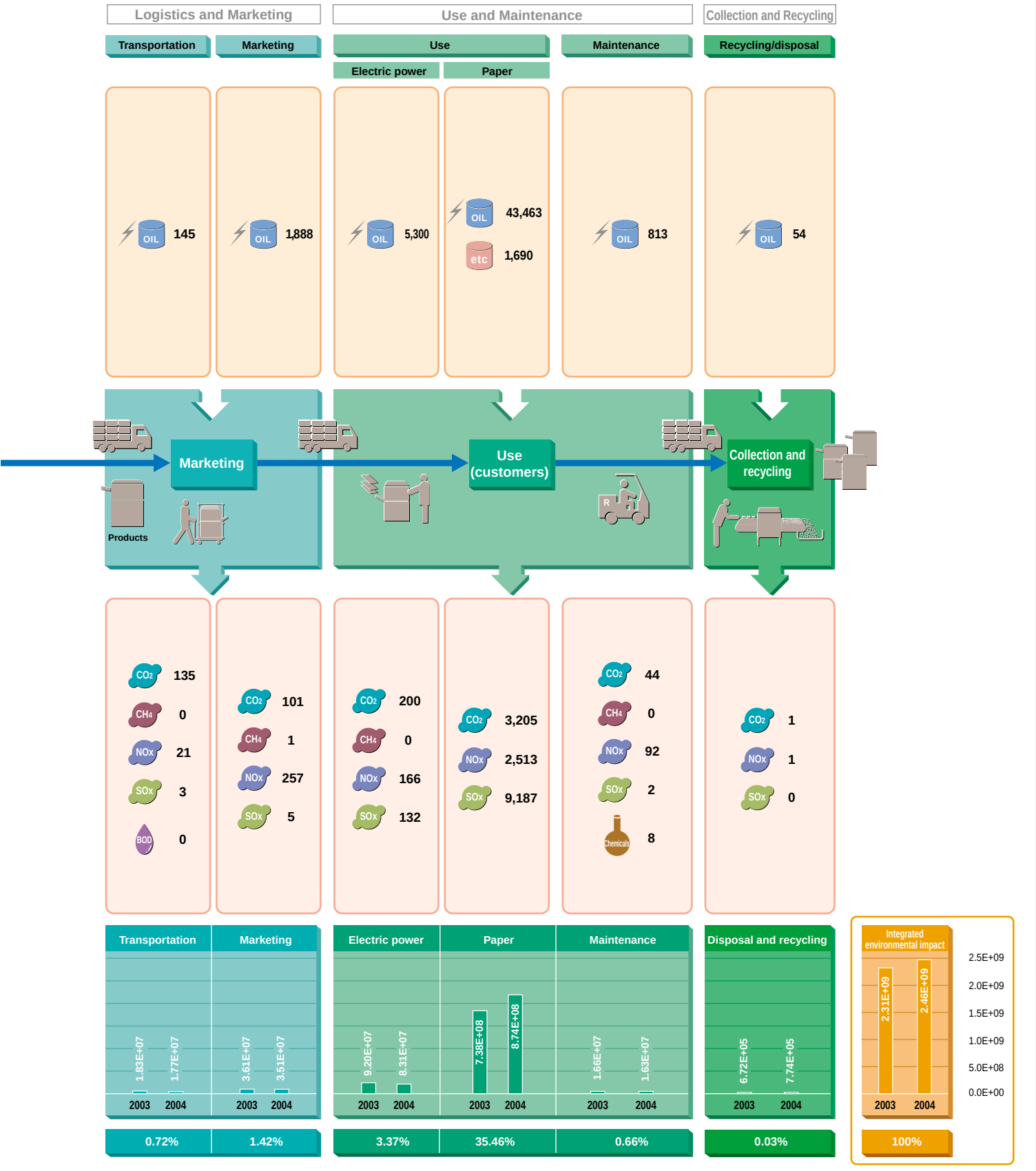
1. Eco Balance means the preparation of a list of input and output data on environmental impact to identify, quantitatively measure, and report environmental impacts caused by companies; or such a list itself.
2. Environmental Priority Strategies for Product Design (EPS), developed by the Swedish Environmental Research Institute (IVL) to calculate LCA of products, is used in calculating the Eco Balance of business activities. Under EPS, damage caused by environmental impact on human health, the ecosystem, non-living resources, and biodiversity is converted into financial values using ELU (Environmental Load Unit) as unified indicators (CO_2=0.108 ELU/kg, NOx=2.13 ELU/kg, SOx=3.27 ELU/kg, BOD=0.002 ELU/kg, etc.).

3. See page 49. 4. See page 9. 5. See page 11.

Review of Fiscal 2004

In fiscal 2004, the integrated environmental impact of the entire Ricoh Group increased from that in the previous fiscal year. This is mainly due to the increased use of resources resulting from stronger sales and a rise in customers' paper consumption. However, measures that were taken to reduce environmentally sensitive substances (lead, hexavalent chromium, PVC, etc.) contained in our products and the electricity use of our products are steadily yielding results. The method and scope of our Eco Balance evaluation are reviewed every year to improve its accuracy. In fiscal 2004, in addition to imaging system production divisions in Japan and overseas, a measuring instruments division was included in the scope of the data collection. Also, raw materials subject to evaluation were reviewed.





"E+n" means "× 10ⁿ"
(Example) 1.45E+08 = 1.45 × 10⁸

We aim to establish an environmental accounting system to evaluate sustainable environmental management and support managerial decision making.

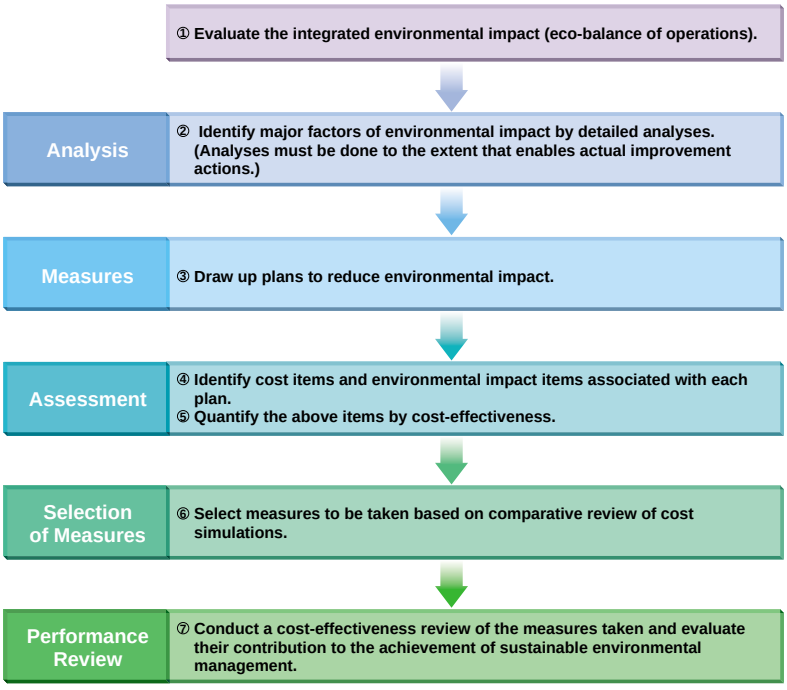
Thanks to its environmental accounting system, which was disclosed for the first time in 1999, the Ricoh Group has built up a good reputation. However, it is necessary to further improve this environmental accounting system as a managerial decision-making tool. We will internally utilize the Segment Environmental Accounting and the Eco Balance Environmental Accounting System to promote sustainable environmental management. From now on, we will make an effort to improve and enhance the environmental accounting system so that the system may be used as a sustainable environmental management indicator to accurately evaluate environmental conservation activities.

Utilization of Environmental Accounting

Environmental accounting is used to determine measures to promote sustainable environmental management.

Implementing measures that strike a balance between cost reduction and environmental impact reduction is crucial to promoting sustainable environmental management. The Ricoh Group uses environmental accounting to determine what measures should be taken for what processes and for what operations so that the maximum effect can be obtained. Therefore, we first identify those processes that are costly and have a high environmental impact in business operations, such as toner and semiconductor and thermal products, based on the Eco Balance environmental accounting for each operation. We examine a number of improvement plans to reduce the identified environmental impact through economically rational approaches. Then, using segment environmental accounting, we assess the effectiveness of each possible approach and decide what methods should be adopted to gain the best results. In our toner business, for example, it was found that the environmental impact of the manufacturing process and transportation is high. Although a modal shift to railway transportation seemed to be effective in reducing the environmental impact of transporting products, it was necessary to determine what kind of operational approach should be taken to achieve such effectiveness. Therefore, as a next step, we analyzed product transportation from Numazu Plant according to our economic accounting. From this analysis, we learned that a modal shift to railway transportation would reduce cost and environmental impact effectively when the distance of transportation is more than 200km.

Flow to Utilize Environmental Accounting



Internal Environmental Accounting Tool

Segment Environmental Accounting

This is an internal environmental accounting tool to select an investment activity, or a project, related to environmental conservation from among all processes of operations, and to evaluate environmental effects for a certain period. The effect of investment on environmental conservation will be calculated based on the concept of "Return on Investment" (ROI). The calculation result is used internally for decision making in sustainable environmental management. Ricoh Group companies and divisions, such as its recycling business division, increasingly utilize segment environmental accounting for their operations.

* For cases of segment environmental accounting.

See pages 19, 23, 33, 39 and 43.

Eco Balance Environmental Accounting

This is an internal environmental accounting tool to support PDCA for sustainable environmental management activities. The Ricoh Group conducts environmental accounting for each process and overall operations based on environmental impact data on each process, as obtained from "the Sustainable Environmental Management Information System."[1] Now, we are examining the applicability of the results of this Eco Balance Environmental Accounting to performance evaluation by division, as well as the utilization of these results in establishing and controlling the progress of "the Year 2010 Long-Term Environmental Goals"[2] and "the Environmental Action Plan."[3]

1. See page 49. 2. See page 9. 3. See page 11.

Corporate Environmental Accounting

This is a tool to inform the public of relevant information compiled in accordance with the Environmental Accounting Guidelines of Japan's Ministry of the Environment. The Ricoh Group takes the necessary portion from the Eco Balance environmental accounting data, and calculates the cost and effect (in quantity and monetary value) of its environmental conservation activities based on its own formulas and indicators. The calculated results are disclosed to the public after being verified by a third party organization. We will continue to improve the accuracy of the information to be disclosed and will make a positive effort to make it comparable to already-standardized documents, such as financial statements.

Review of Corporate Environmental Accounting in Fiscal 2004

Review of Corporate Environmental Accounting

The ratios of eco profit and eco effect, important indicators when measuring the effects sustainable environmental management activities have on cost, dropped about 10% in fiscal 2004 from the previous fiscal year's levels (see graph ①). This is because environmental conservation cost increased by approximately 7% compared to that in the previous fiscal year, and the economic benefits, particularly incidental effects of pollution prevention activities, decreased significantly. Incidental effects, however, lead to lower costs in implementing measures to avoid risks when the risks of pollution diminish due to the advancement of pollution prevention activities. On the other hand, if the ratios are compared to those at the start of the current environmental action plan (results in fiscal 2001), the ratio of eco profit increased by about 50% and ratio of eco effect about 3% (see graph ①).

The Eco Index, which indicates the level of sustainable environmental management for the entire business of the Ricoh Group, dropped slightly in fiscal 2004 from that in the previous fiscal year. This is because although total environmental impact decreased marginally, gross profit on sales declined 1.4% compared to the previous year's level. In terms of efficiency, however, in fiscal 2004 it improved approximately 45% compared to that in fiscal 2001, indicating that the level of sustainable environmental management for the entire business significantly rose over the past three years (see graph ②).

Corporate environmental accounting data (page 55) show that in environmental conservation costs, business area costs and administration costs remained unchanged in fiscal 2004 from those in the previous year. This implies that environmental management costs at business sites are stabilizing. Meanwhile, product recycling costs have increased over the past few years, surging in fiscal 2004.

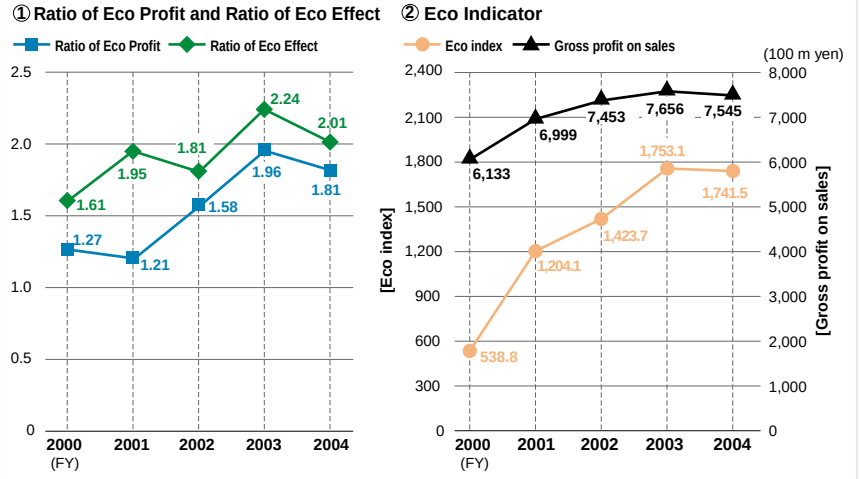
The cost of research and development in reducing environmental impact has expanded as well. These figures show that various costs are incurred in sustainable environmental management activities involving products.

Although it is becoming difficult to reap the economic benefits of environmental conservation activities carried out by business sites, the economic benefits of product recycling have substantially grown in the past few years. Consequently, the economic benefits of sustainable environmental management activities related to products now account for more than 50% of the total benefits, and this trend is likely to become more pronounced in the future.

However, when it comes to the effects of environmental conservation, the total amount of substances that have an impact on the environment have not decreased significantly, and this is true for all kinds of substances. CO_2 emissions, in particular, have increased by more than 2% due to production expansion and an extremely hot summer, which remains a challenging issue in the prevention of global warming in the future.

Currently, the Ricoh Group is promoting sustainable environmental management activities by improving the manufacturing process through innovations in energy/resource conservation. At Fukui Plant, for example, costs and the amount of materials and energy used were aggregated, and measures were taken to reduce loss and environmental impact by improving the production process. It was estimated that approximately ¥123 million in raw materials and direct expenses was cut per year thanks to these initiatives. We strive to further reduce the environmental impact of our business operations, thereby intensifying our efforts to promote sustainable environmental management.

Changes in Ricoh Group's Sustainable Environmental Management Indicators



Ricoh Group's Sustainable Environmental Management Indicators

Sustainable environmental management indicators	Results in fiscal 2004	Calculation formula
REP : Ratio of Eco Profit	1.81	Total economic benefit (29.98) /Total environmental conservation cost (16.57)
REE : Ratio of Eco Effect	2.01	{Total economic benefit (29.98) + Amount of reduction in social costs (0.03+3.29)}/Total environmental conservation cost (16.57)
Eco Index	1,741.5	Gross profit on sales (¥754,500,000 thousand) /Total environmental impact (433,247)
RPS : Ratio of Profit to Social cost	119.2	Gross profit on sales (754.5) /Total social cost (6.33)

* Monetary units are indicated in billions of yen unless otherwise indicated.

Ricoh Group's Corporate Environmental Accounting in fiscal 2004

Environmental conservation costs are classified according to "Categories corresponding to business activities" defined in the "Environmental Accounting Guidelines 2005" of the Ministry of the Environment.

Costs refer to expenditure on environmental conservation activities (in a broad sense), and consist of environmental investments and environmental costs (in a narrow sense).

● Environmental investments
These investments correspond to "investments in fixed assets" in financial accounting. The amount of environmental investments is distributed as environmental costs over the service life of fixed assets in accordance with depreciation procedures.

● Environmental costs
These environmental costs correspond to the "period cost" in financial accounting. (Depreciation cost of environmental investments is included.)

Cost unit: ¥100 million (Exchange rate: $1 = ¥107.58 €1 = ¥135.25)

Item	Costs			Economic Benefits		
	Environmental Investments	Environmental Costs	Main Costs	Monetary Effects	Category	Item
Business area costs	5.3	20.9	Pollution prevention cost ····· ¥398 million Global environmental conservation cost ····· ¥598 million Resource circulation cost ····¥1,094 million	5.3	a	Energy savings and improved waste processing efficiency
				50.2	b	Contribution to value-added production
				59.4	c	Avoidance of risk in restoring environments and avoidance of lawsuits
Upstream/ Downstream costs	0.5	84.6	Cost of collecting, disassembling, and recycling used products	103.9	a	Sales of recycled products, etc.
				[26.5]	S	Reduction in society's waste disposal cost
Administration costs	1.1	33.8	Cost generated by the division in charge of environmental conservation; cost to establish and maintain an environmental management system	21.1	b	Effects of media coverage and environmental education
Research and development costs	1.0	18.9	Research and development costs for environmental impact reduction	51.5	a	Contribution to gross margin through environmental research and development
				[6.4]	S	Reduction in user's electricity expenses thanks to an improved energy saving function and product performance
Social activity costs	0.0	5.3	Costs of preparing environmental reports and advertisements	8.4	b	Publicity from environmental advertisements, etc.
Environmental remediation costs	0.6	1.6	Costs of restoring soil and environment-related reconciliation	0.0	—	None
Other costs	0.0	0.6	Other costs for environmental conservation	0.0		
Total	8.7	165.7		299.8	Sum of a:160.7, b:79.7, and c:59.4.	
				[32.9]	Total S's	

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

- **Environmental investment rate: 2.5%**
  [= environmental investment (8.7) /total capital investment (346.1)]
- **Environmental R&D cost rate: 1.7%**
  [= Total environmental R&D cost (18.9) /Total R&D cost (1,104)]

Economic benefits refer to benefits that were obtained by environmental conservation activities and which contributed to the profits of the Ricoh Group in some form. Economic benefits are classified into four categories as follows:

● Substantial effect (a)
This means economic benefits that fall into either of the following two cases:

1) Cash or cash equivalent is received as a benefit. This corresponds to "realized gain" in financial accounting.
2) The amount of savings in such costs that would have occurred if environmental conservation activities had not been conducted. This amount is not recognized in financial accounting.

● Expected effect (b)
The expected amount of contribution in the case that expenditure on environmental conservation activities is assumed to have contributed to profits for the Ricoh Group. If environmental conservation costs are assumed to be costs that are indispensable for the Ricoh Group to conduct its operations, for example, it can be safely said that such cost contributed to profit in some form. In practice, the expected effect is computed by a certain formula for each item.

● Incidental effect (c)
Expenditure on environmental conservation activities can help avoid the occurrence of environmental impacts. Therefore, it can be safely said that the expenditure contributed to the avoidance of such damage of environmental impact that would have taken place without the expenditure. In practice, the incidental effect is computed by multiplying the expected amount of damage by an occurrence coefficient and impact coefficient.

● Social effect (S)
Social effect means such effect that is generated by expenditure on environmental conservation activities not for the Ricoh Group but for society. In practice, social effect means the amount of reduction in the expense of electric power and waste disposition that is enabled through environmentally conscious products for customers.

* For the computation formulas, see page on the right.

Effect on environmental conservation means the effect of activities to prevent and control the occurrence of environmental impacts and to eliminate and remove such environmental impacts. The Ricoh Group reports the amount of reduction in the emission of substances with serious environmental impacts for the current year as compared with the previous year (emissions in the previous year – emissions in the current year).

This is the quantity of substances with environmental impacts that were emitted by the Ricoh Group in the current fiscal year.

● Conversion Coefficient
This is a weighting coefficient that is used in identifying environmental impact by totaling and weighting various types of environmental impact expressed in different units (CO_2 = 1). Values of coefficients are based on the Swedish EPS method.

● Converted Quantity of Reduction/Converted Value of Impact
Converted quantity of reduction is obtained by multiplying environmental impact reduction by conversion coefficients and converted value of impact by multiplying total environmental impact by the coefficients. In other words, these values refer to the degree of seriousness of such environmental impact reduction and total environmental impact that are converted into figures in t-CO_2.

● Social Cost Reduction Values/Social Costs
Social cost reduction values represent financial figures obtained by converting the converted quantity of reduction into money and social costs by converting the converted value of impact into money. Computations are made using the factor of 108 Euro/t-CO_2 of EPS Ver2000.

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 Impact	Social Costs
Environmental impact reduction at business sites							
CO_2 –6,766.5	1.0	–6,766	–0.99	CO_2 291,267	1.0	291,267	42.55
NO*x* 9.4	19.7	185	0.03	NO*x* 172	19.7	3,384	0.49
SO*x* –0.6	30.3	–18	–0.00	SO*x* 10	30.3	289	0.04
BOD 8.9	0.02	0.2	0.00	BOD 23	0.02	0	0.00
Final waste disposal amount 2.3	104.0	238	0.03	Final waste disposal amount 841	104.0	87,468	12.78
PRTR substance emissions (Ricoh standards per substance)		8,546	1.25	PRTR substance emissions (Ricoh standards per substance)		50,839	7.43
Environmental impact reduction through products CO_2 9,969.1 (t) NO*x* 8.2 (t) SO*x* 6.5 (t) Final waste disposal amount 33,096.0 (t) Calculation for companies in Japan only							
		2,185	0.31			433,247	63.28

Data coverage
- **Companies: 93 Ricoh Group companies.** See page 73.
- **Period: From April 1, 2004 to March 31, 2005 (for costs and total environmental impact).**

* Social cost is calculated using the factor of 108 Euro/t-CO_2 (14,607 yen/t-CO_2).

* Environmental impact reduction represents the difference between figures in fiscal 2003 and fiscal 2004.

(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 environmentally conscious 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 sustainability report

(3) Formula of Incidental Effects

Amount of incidental effects	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

We have organized green partnerships to continue to promote effective environmental conservation.

To promote effective environmental conservation, it is important to make an effort in reducing the environmental impacts caused by "overall operations" through partnerships with suppliers and customers. For this purpose, it is necessary to establish, maintain, and improve partnerships that are beneficial to all parties. To contribute to the creation of a sustainable recycle-oriented society, we regard all parties involved in the operations of the Ricoh Group as green partners, and we, together with these green partners, are promoting effective environmental conservation.

Suppliers of Materials and Parts

Development of Environmentally Conscious Products

Based on the concept of manufacturing shared with suppliers, the Ricoh Group is promoting activities to reduce chemical substances with serious environmental impact. We are promoting the joint development of parts with less environmental impacts, and commend excellent cases at the Green Procurement Convention. In addition, we started supporting suppliers in creating chemical substance management systems* in fiscal 2004.

*See page 31.

Suppliers of Business Equipment and Stationery

Promotion of Environmental Conservation through Green Purchase of Environmentally Conscious Products

As a user of paper, stationery, and business equipment, we are promoting "green purchasing," which means that environmentally conscious products are used on a priority basis. In April 2002, the Ricoh Group established the Green Purchasing Guidelines in Japan for eight categories: paper, stationery, business equipment, office equipment, home appliances, work gloves, working clothes, and lighting. At production and non-production sites outside Japan, where there is no equivalent to Japan's Green Purchase Law, their own guidelines were established individually to develop green purchasing.

Logistics Companies

Reduction in Environmental Impact Caused by Transportation

To reduce the environmental impact caused by transportation, the Ricoh Group is promoting a modal shift (shift of transportation by trucks to that by sea and/or rail) in cooperation with various logistics companies.

*See page 38.

Recycling Companies

Efficient Use of Resources

In cooperation with recycling companies as "partners in creating a resource recirculating society," the Ricoh Group is making an effort to recycle used products and enhance "zero-waste-to-landfill" activities.

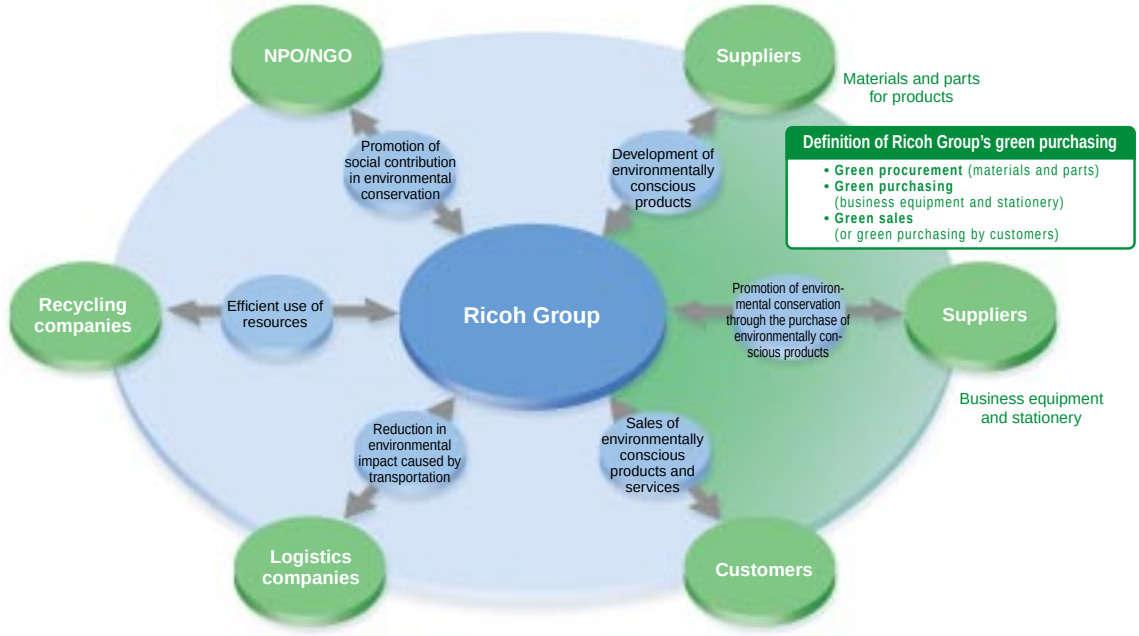
* For the recycling of products.
See page 23.
For recycling activities made by offices and sites.
See page 39.

Customers

Promotion of Environmentally Conscious Products

In recognition of its environmentally conscious products and environmental awareness building activities, Ricoh Corporation, the Americas Regional Sales Headquarters, received the Green Contractor Award 2004 from the Coalition for Government Procurement.

Ricoh Group's Green Partnerships



Customers

Green Marketing Participated by Customers to Promote Environmental Conservation

<Ricoh UK Ltd. (United Kingdom)>

Ricoh UK Ltd., a sales company, promotes green marketing activities with the aim of successfully combining environmental conservation with profit making. As part of such activities, the company introduced the RICOH Tree Dedication Programme in January 2005. Under this customer participation program, Ricoh will plant a tree in the customer's name for every 100,000 copies used on the customer's Ricoh equipment and send the customer a certificate. Planting trees is carried out in conjunction with Future Forests*, a U.K. company engaged in the CO_2-neutralizing business. All Direct and Dealer customers can participate in the program via Ricoh UK's website. There are examples where a customer's high appreciation of this program has led to a business agreement. Marketing support materials such as posters and machine stickers are also available to further promote this program. Ricoh staff can also participate in this scheme by having a tree dedicated to them on their birthday.

Ricoh UK produced *The Resource-full Green Office Guide* to be distributed to customers. The guide explains Ricoh's environmental conservation activities and offers practical ways that everyone can help prevent global warming and save resources. The guide contains many such ideas to help reduce environmental impact by society as a whole.

* http://www.futureforests.com/index.asp

Persons in charge at Ricoh UK Ltd.: Tom Wagland (left) and Louise Cheung

Certificate given to customers (left) and *The Resource-full Green Office Guide*

N P O

Establishing Paper Procurement Standards to Conserve Ecosystems

<Ricoh Group (Global)>

In June 2003, Ricoh established Environmental Standards for Paper Products. These standards aim to preserve what Ricoh defines as "forests of high conservation value*." In accordance with these standards, the Ricoh Group asks suppliers to comply with the standards in terms of both products supplied to it and the supplier's corporate activities. We may suspend business with those companies that do not comply. In defining "forests of high conservation value," we sought the advice of environmental NGOs. To determine whether or not suppliers have responded to our request for improvements, we use not only information that we collected ourselves but additional information provided by a selected third party. Ricoh Group companies outside Japan also conduct their activities based on the same standards.

* "Forests of high conservation value" include old-growth forests (forests mainly made up of 200- to 1,000-year-old trees), native forests (untouched forests), or natural forests inhabited by endangered species (forests consisting primarily of native species that are self-sustaining).

Procedure for selecting suppliers of wood raw materials

Requirements for suppliers

- Verify the origin of raw wood materials.
- Comply with all applicable laws and regulations in the origin countries and regions.
- Examine the conservation value of the forests from which raw materials are harvested.
- Prepare a sustainable forest management plan in cooperation with local residents and other stakeholders, including environmental protection organizations.

▼

Investigation

- In addition to the investigation conducted by Ricoh, information and analyses provided by a third party (including environmental protection organizations) will be used if necessary.

▼

Response

- If Ricoh recognizes that the supplier is not complying with the requirements and has not made adequate improvements to respond to Ricoh's requests, Ricoh may suspend business with the supplier.

2005

FOCUS 03

Building a Sustainable Environmental Management Model of Sales Companies in Japan

Tamio Shibagaki,
Leader, CS Environment Promotion Group, CSR Promotion Office,
Ricoh Chubu Co., Ltd.

Aiming to be a company that gains the support of communities by fostering a win-win relationship with them

Ricoh Chubu Co., Ltd., is a regional sales supervising company that oversees six Ricoh Group sales companies in the Chubu region in Japan. Making use of its marketing style, in which sales representatives pay repeated visits to customers, Ricoh Chubu started "environmentally" communicating with customers by providing them with environmental information as well as information about Ricoh products. In line with its promotion of environmental communication with local governments, companies, media, and environmental NPOs, Ricoh Chubu began efforts to share not only information but also its environmental conservation mission with local communities. Based on such keywords as *employees*, *customers*, and *local communities*, the company strives to achieve sustainable environmental management while contributing to the conservation of local environments.

Sample Activity 1 Green Promotion

The green promotion program, which aims to tie marketing activities with environmental conservation/community contributions, is a subsidy grant scheme for local citizen groups engaged in environmental conservation activities. In this program, Ricoh Chubu sales representatives explain to customers buying Ricoh's environmentally conscious products how environmental conservation and community contributions are important, and if the customer believes in what the company is doing, the sales representative will ask the customer to fill in an eco card with their company's name and other information. Ricoh Chubu then decides on the amount of the subsidy according to the total number of points on eco cards collected from such customers. Grantees are chosen by an eco-hiiki (eco-favor) vote by customers, environmental NPOs, scholars, citizen groups that are former grantees, and Ricoh Chubu employees. In fiscal 2004, 10 organizations were granted a subsidy, and our employees participated in environmental conservation activities organized by those organizations.

Eco Card

Sample Activity 2 E-koto (good thing) Project

In the E-koto (good thing) project, Ricoh Chubu encourages its employees to voluntarily engage in environmental conservation activities. Aims of the project are to provide appropriate opportunities for employees who have ideas about how things can be improved and to develop those ideas into actual activities in which all employees can participate. One employee is chosen from each of the company's divisions to become a member of the E-koto committee and give his/her opinion and ideas at monthly committee meetings. The sorting-sommelier certification system, in which participants can enjoy themselves, had its start in this project.

E-koto Committee

Q What is your opinion on sustainable environmental management at sales companies?

A **It is important for us to combine our marketing activities with environmental conservation efforts.**

Ricoh Chubu, a sales company, cannot merely copy the efforts made by production sites, such as making production lines more energy efficient and improving productivity through Zero-Waste-to-Landfill activities at the plants, and achieve similar success. Sustainable environmental management, which consists of both environmental conservation and economic efficiency, cannot be achieved solely by conserving energy and reducing paper consumption at offices. It is therefore important for us to promote sustainable environmental management through our strength in fostering a relationship with customers. To provide customer satisfaction, sales companies offer customers information about environmental regulations in addition to product information. Sharing environmental information with customers is the fastest way to gain their support in terms of environmental conservation.

Q Could you specify the activities you are currently undertaking?

A **We are currently undertaking activities that encourage the participation of employees, customers, and communities.**

It is important for Ricoh Chubu to create a new mechanism and internal system, with the environment taken into consideration, to appeal to customers and communities. Our green promotion activities (See below.), which started in June 2002, combine marketing activities with environmental conservation and social contributions. Coming into contact with a variety of community organizations as well as customers makes Ricoh Chubu, which provided B-to-B solutions in the past, now capable of engaging in B-to-C communication. In April 2004, a sorting-sommelier certification system (See below.) was established in the hope that employees would enjoy learning about the role of a sorting master and share their knowledge of environmental conservation with others. In addition to internal activities, sorting masters enthusiastically introduce Ricoh Group environmental conservation activities to customers, communities, and other stakeholders.

Q What are you aiming for?

A **We are aiming to contribute to the revitalization of local communities while establishing an environmental management system.**

Materializing ideas for green promotion and sorting-master schemes and cementing relationships with stakeholders helped build up Ricoh Chubu's reputation among local communities while promoting the awareness of our employees. Accordingly, sales representatives are now talking to customers differently; they sometimes successfully close deals because customers are interested in the company's environmental features. In developing environmental communication with customers and communities, it is important to meet and hold discussions with stakeholders who believe that a sustainable social system is needed and share the company's environmental conservation mission with them. Such face-to-face communication will establish the role that Ricoh Chubu is to play in the community. Further communication with and contributions to local communities will realize the sustainable environmental management relevant to our operations.

Sample Activity 3

Sorting-Sommelier Certification System

A sorting sommelier is a person who is able to properly sort waste and verbally communicate how and why it should be sorted. After the January 2004 internal announcement that applicants to the program will be accepted, those who applied participated in study meetings, using an approximately 200-page textbook, and took the certification exam. Thirty-eight employees have been qualified as sorting-sommelier thus far. Prior to the exam, applicants examined the recycling system of sorted waste, and several improvements were made as a result, including the localization of waste sorting rules in buildings, by promoting communication with management companies in charge of the buildings where our offices are set up, cleaning companies, local governments, and NPOs.

Sommelier badge

The first sorting sommeliers

Sorting-Sommelier Certification System

(1) Sorting

(2) Written Test

(3) Role Playing (Case Selection)

Plastic bags, each containing 10 types of waste, are prepared in the same quantity as the number of candidates for the exam.

The candidates choose one plastic bag each.

They sort all of the waste.

They attach slips with their names on to the sorted waste.

They place the waste in relevant sorting boxes according to Ricoh Chubu rules.

We are conducting awareness-building activities for our employees so that they can perform duties as global citizens and promote their individual sustainable environmental management.

To make all-employee participatory sustainable environmental management really effective, not only is the commitment of senior management and the active efforts of all divisions essential, but so is the awareness building of employees. Although sustainable environmental management concerns corporate activities, these activities are the accumulation of the actions of individual employees. The Ricoh Group has about 75,000 employees throughout the world. The results of sustainable environmental management will widely differ depending on the awareness of individual employees. Therefore, we are conducting education and awareness-building activities for our employees so that they may grow as "global citizens," "employees of the Ricoh Group," and "specialists in promoting sustainable environmental management."

Specialized Education

Organization of Environment-Related Courses

<Ricoh Group (Japan)>

To develop personnel who can manufacture environment-friendly products or manage chemical substances properly as sustainable environmental management specialists, environment-related courses, such as LCA and recyclable design, are organized for employees at their workplaces.

Environment-related Courses (Number of Participants)

Name of course	Number of participants in fiscal 2004
Recyclable Design	23
Technologies for the Environment Impact Assessment of Products (machines, peripherals and supplies)	31
Environment-Related Laws and Regulations	52
LCA (basic)	27
LCA (application)	5
Safety of Chemical Substances and Adaptation to Laws and Regulations (elementary class)	37
Safety of Chemical Substances and Adaptation to Laws and Regulations (senior class)	7
Noise (basic)	34
Thermal Design for Office Equipment	13
Total	229

Ricoh Group's Sustainable Environmental Management Conference

<Ricoh Group (Global)>

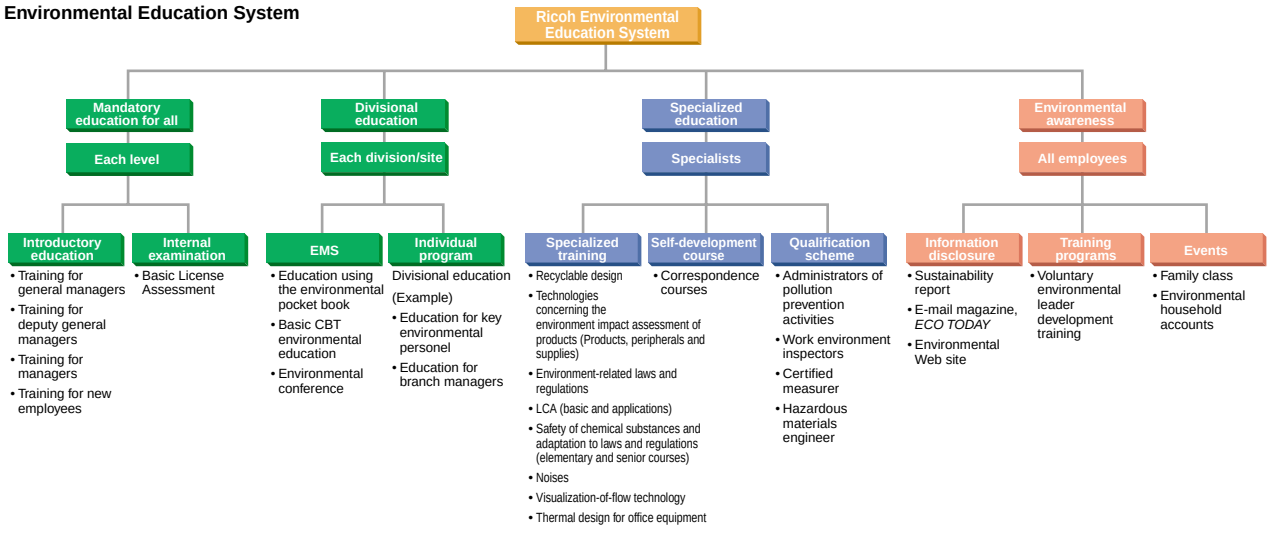
In February 2005, Ricoh Group's 11th Sustainable Environmental Management Conference was held at the Ohmori Office, Tokyo. The conference was held to promote all-employee participatory sustainable environmental management for the Ricoh Group as a whole and attended by Group employees from various countries, a new environmental action plan was introduced and updates on global warming were given. A commendation ceremony for the 3rd Ricoh Sustainable Development Award was also held during the conference.

Employee Education to Raise Employee Consciousness

<Fukui Plant, Ricoh (Japan)>

All-employee participatory sustainable environmental management efforts are based on employee consciousness. At Ricoh Fukui Plant, the person in charge of environmental conservation gives seminars to raise employee consciousness in each division. The person in charge promotes environmental conservation by talking about the plant's annual electric bill, the recycling of sorted waste, and the reduction of environmental impact and costs that can be achieved by sorting waste.

Environmental Education System



Employee Education and Divisional Education

Environmental Conferences in Europe and the Asia-Pacific Region

<Ricoh Europe B.V. and Ricoh Asia Pacific Pte. Ltd. (Global)>

Environmental Conferences are held in many parts of the world as a means of sharing regional information about laws and regulations as well as to benchmark examples of activities within a group. In Europe, an Environmental Conference was convened in Frankfurt, Germany, in May 2004. A total of 75 people attended the conference, including staff in charge of environmental issues from sales companies and manufacturing subsidiaries, who were there to explain the latest information on EU WEEE and RoHS Directives and introduce cases of recycled machine sales. In the Asia-Pacific region, 22 people participated in an Environmental Conference held in November 2004 in Bangkok, Thailand, to report on their respective country's activities and discuss future activities.

Environmental Conference in Europe

e-Learning at Sales Companies

<Ricoh's Marketing Group, Sales Companies, etc. (Japan)>

In fiscal 2004, we started an e-learning scheme for approximately 17,000 employees and temporary workers at Ricoh's Marketing Group and sales companies. The 60-minute sessions provide them with everything they need to know, from basic environmental knowledge such as global warming and a recycling-based society, to environment labels and Ricoh Group activities. Because sales representatives find it difficult to take part in group lessons due to their need to visit customers during the day, the e-learning sessions are useful as the sales representatives can take lessons whenever they like.

Environmental Awareness Building

Ricoh Group Sustainable Development Award

<Ricoh Group (Global)>

The Ricoh Group Sustainable Development Award has been presented since fiscal 2002. This award has two categories. One is the Award for Sustainable Environmental Management Improvement Activities, presented for routine all-employee participatory activities. The other is the Award for Sustainable Environmental Management Technology, presented in recognition of efforts to develop environmental technologies. These two awards are presented based on evaluations of activities from two perspectives: namely, environmental conservation effects and generated economic profit. In fiscal 2004, 26 entries were made by various divisions and sites across the world. Ricoh Fukui Plant was given the Award for Sustainable Environmental Management Improvement Activities for its contribution to environmental conservation and its remarkable, all-out activities in resource/energy conservation, environmental communication, and social contribution to communities. No party was given the Award for Sustainable Environmental Management Technology in this fiscal year.

Representatives of Ricoh Fukui Plant, winning the Award for Environmental Management Improvement Activities, with Mr. Sakurai, president of Ricoh (left)

Awareness Building Using Environmental Household Accounts

<Ricoh's Marketing Group, Sales Companies, etc. (Japan)>

Based on a desire that "employees not only promote sustainable environmental management in the office, but also conduct environmental conservation activities at home," Ricoh's Marketing Group, in cooperation with sales companies in Japan, has been making an effort to encourage the use of environmental household accounts. This effort is called Eco Life Note. The contents of Eco Life Note are input to the company's database, which enables the exchange of information among participants. As of the end of fiscal 2004, more than 500 households had participated in these activities.

Database of Eco Life Note, environmental household accounts

We are making efforts to conserve global forest ecosystems and enhance our employees' global citizen awareness.

To conserve the global environment, it is important not only to reduce environmental impact, but also to maintain and enhance the self-recovery capability of the global environment. The Ricoh Group is promoting forest ecosystem conservation projects at many places all over the world in partnership with environmental NPOs and local communities. Furthermore, headquarters and sales companies in various regions in the world are committed to environment-conscious social contribution activities. In Japan, the Ricoh Group is implementing an Environmental Volunteer Leader Development Program* to enhance each employee's global citizen awareness and help employees take initiatives in local communities to conserve the global environment.

*See page 69.

Forest Ecosystem Conservation Projects

<Ricoh Group (Global)>

On the earth, various life habitats exist and unique ecosystems are maintained in forests, grasslands, lakes and ponds, coral reefs, and oceans. If these ecosystems are damaged, the natural environment including water, air, climate, and soil that is indispensable for maintaining the life of human beings would be harmed. The Ricoh Group places priority on forest ecosystems with rich biodiversity and has been promoting forest ecosystem conservation projects since fiscal 1999 in partnership with environmental NPOs and local communities. In fiscal 2004, Ricoh launched the Conservation of Taiga Forests—The Northern Limit of the Tiger's Habitat, a project that aims to preserve forests where a variety of wildlife, including the Amur tiger, lives in harmony with human beings. This project is financed by the social contribution reserve that Ricoh established to continuously carry out social contribution activities. Provided that approval is gained at the general shareholders' meeting, 1% of Ricoh's annual profit, from which annual dividends are deducted, is allocated for the reserve (up to ¥0.2 billion). More information about Ricoh's forest ecosystem conservation projects is provided on ECO TODAY*, Ricoh's environmental website.

* http://www.ricoh.co.jp/ecology/ecotoday/index_e.html

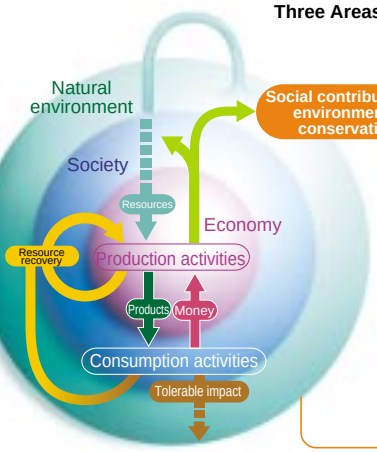
Ricoh Group's Forest Ecosystem Conservation Projects

Company	Country	Project		NPO	
		Name	Activity	Name	Descriptions
Ricoh Corporation	Mexico	Conservation of the Sierra Tarahumara forest and riverheads	Conservation and restoration of forests and riverheads that cover the North Mexico region comprising 1.5 million residents and 600,000 hectares of agricultural land.	WWF	Largest global conservation NPO in the world; works in more than 170 countries and engages in a wide range of projects related to biodiversity conservation, from ecosystem conservation to global warming prevention
Ricoh Europe B.V.	United Kingdom	Participation in the virgin forest conservation campaign hosted by the Woodland Trust	Supports a virgin forest conservation campaign that aims to protect woods and biodiversity in the United Kingdom	Woodland Trust	The Woodland Trust, the UK's leading woodland conservation charity, was established in 1972. With over 1,000 woods in its care, covering approximately 20,000 ha, the Trust is dedicated to the protection and conservation of our native woodland heritage
Ricoh Asia Pacific Pte Ltd.	Australia	Support of Earth Keeper™, an environmental education program conducted by Warrimoo Public School	A program in which children learn about ecosystems and environmental issues in Australia and plant trees	Warrimoo Public School	Teaches students about the environment through forest conservation activities, focusing on a project called Earth Keeper™, which gives children the skills to live in harmony with nature
Ricoh Co., Ltd.	Philippines	Restoration of tropical rain forests*	Restoration of rich forests where the Philippine Eagle and other forest creatures can coexist with people	Conservation International	Established to address environmental issues that focus on the harmonious relationship between nature and society; more than 1,000 staff in more than 30 countries work to conserve biodiversity
	Ghana	Restoration of tropical rain forests*	Preservation of forests through sustainable agriculture, specifically, raising cocoa in the shades of trees so that people can live with other living things		
	Malaysia	Restoration of tropical forests and orangutan habitats*	Expansion of the habitats of endangered species, including the orangutan	WWF	Largest global conservation NPO in the world; works in more than 170 countries and engages in a wide range of projects related to biodiversity conservation, from ecosystem conservation to global warming prevention
	China	Restoration of temperate forests and giant panda habitats*	Conservation of habitats for endangered species, including 437 vertebrates, such as the giant panda, and 4,000 plants, to prevent their extinction		
	Japan	Conservation of the Afan Forest in Kurohime, Nagano*	Conservation of natural forests that have enough space and food for bears, dormice, and other animals to live and where people can feel close to nature	C.W. Nicol Afan Woodland Trust	Researches and studies the forest ecosystem as well as conducts environmental conservation activities with the idea of establishing a forest where mankind can live without harming the natural environment
	Japan	Conservation of the Yanbaru Forest in Okinawa*	Conservation of habitats of endangered species unique to the region, including Rallus okinawae	Yanbaru Forest Trust	Aims at securing trust sites for wildlife, contributing to the conservation of habitats and other natural environments in northern Okinawa, which is blessed with rich biodiversity
	Russia	Conservation of Taiga, the northern limit habitat of tigers*	Conservation of rich forests where many wild animal species, including the Amur tiger, live harmoniously with people	Friends of the Earth Japan (FoE Japan)	Established as a member of Friends of the Earth International; promotes forest conservation and campaigns to prevent desertification and supports the forest industry in Japan
	Sri Lanka	Conservation and restoration of forests at World Heritage Sites	Preservation and expansion of forests where the Sri Lankan long-tailed fowl can live	Field Ornithology Group of Sri Lanka	Conducts research in bird ecology in Sri Lanka and develops domestic and overseas environmental conservation activities for bird habitats
	Bangladesh	Restoration of satoyama (*community forests*)	Education of children, development of afforestation activities, and raising of saplings	Bangladesh Poush	Provides environmental education especially to children and promotes afforestation activities in Sri Lanka

* For each project, flag species are mentioned in the column of activities. These projects aim at conserving not only flag species, but also all forest ecosystems in the area.

* Projects covered under the social contribution reserve system

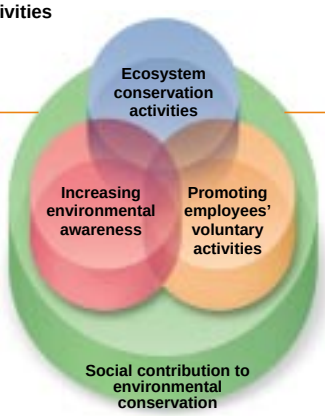
Three Areas of Environmental-conscious Social Contribution Activities



Ecosystem conservation activities
We work to conserve ecosystems at the global and community levels as a company and support organization engaged in such activities.

Promoting employees' voluntary activities
We promote employees' participation in voluntary activities for environmental conservation in communities and encourage them to reduce environmental impact at home and the workplace.

Increasing environmental awareness
We encourage individuals and organizations to understand the current situation of the global environment, and increase their awareness of conservation so that they take actions.



Pursuing the Ideal Society (Three P's Balance™)

See page 7.

INTERVIEW ⟹ NGO

Example of a Forest Ecosystem Conservation Project
Conservation of Taiga Forests
The Northern Limit of the Tiger's Habitat

FoE Japan

Ricoh started a forest ecosystem conservation project focusing on the Bikin River basin, a habitat of the endangered Amur tiger.

Eiichiro Noguchi
Director, Russian Far East Taiga (Forest) Project, FoE Japan (an environmental NGO)

The Bikin River basin stretches over approximately 13,000 square kilometers, from Khabarovsk to Vladivostok, which is equivalent to the combined areas of Tokyo, Kanagawa, Chiba, and Saitama.

The Nature-rich Russian Far East faces the threat of deforestation.

In May 2004, in partnership with FoE Japan (an environmental NGO), Ricoh started a forest ecosystem conservation project focusing on the northern area of the Bikin River basin in the Russian Far East. The forest is a habitat of the Amur tiger, an endangered species. The Russian Far East, which is quite close to Hokkaido, lies across the Japan Sea and still maintains natural forests and a diversified ecosystem. Bikin Basin forests are precious habitats for a great variety of wildlife, including the Amur tiger, many of which are rare animals. For example, the Amur tiger, the largest species of tiger, is critically endangered with as few as 380 left in the world. However, after the collapse of the Soviet Union, a great many trees were cut for export in order to obtain foreign currency. Because of this, the forests are now threatened with deforestation and the consequential destruction of the ecosystem.

Aiming to protect both the natural environment and the local people's lives

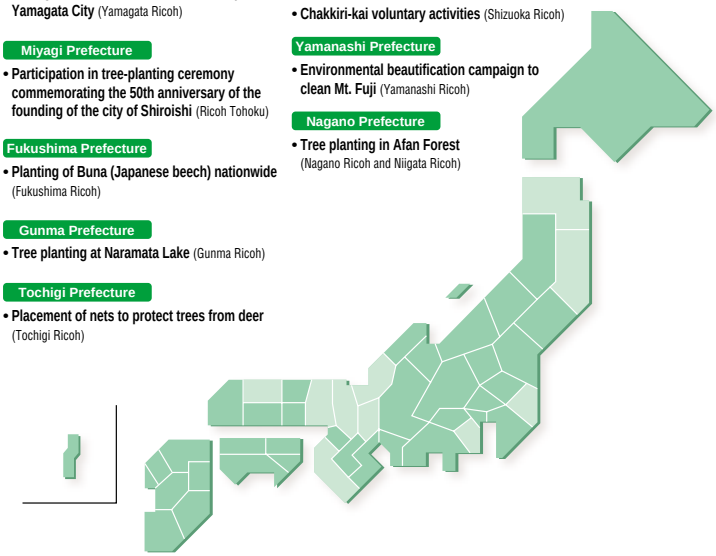
As the first step of the project, we encouraged the Udeghe people (indigenous habitants), local NGOs, and researchers to understand what our project is about so that a friendly relationship can be established between us, and we are currently carrying out our research on endangered species, including the Amur tiger. At the same time, to promote the awareness of the environmental value of the region, we have also contacted the Russian government and we are striving to disseminate information about our project among both the Russian and Japanese people. To help the Udeghe make a living without relying on the lumber business, we intend to conduct eco-tours and support a fair trade* scheme by purchasing honey and herbs, such as rosehip, that can be obtained from the forests there. The ultimate goal of this joint program is an entry on UNESCO's World Heritage List as a natural site. UNESCO realizes that there is a habitat of the Amur tiger in the region and that the surrounding areas have natural values. We approached the related authorities to appeal for the environmental values of the forests as a step to attain our goal because being designated as a nature reserve by domestic law is a requirement for entry.

* In general, fair trade aims to help economically disadvantaged producers in developing countries become independent by earning a stable and fair income.
* Details of the project are available on http://www.ricoh.com/environment/society/report/index.html

Environmental volunteer activities further promoted by the Ricoh Group's sales companies in Japan

Promotion of forest conservation is one of the target goals set by the Ricoh Group to be achieved by fiscal 2004 in terms of social contribution in environmental conservation. In fiscal 2004, sales companies activated their efforts.

Map of Forest Conservation Activities



Hokkaido
- Clean & Walk in Sapporo Art Park (Hokkaido Ricoh)
- Participation in Hokkaido Arbor Day (Hokkaido Ricoh)
- Tenguyama Cleanup Climb (Hokkaido Ricoh)
- Clean & Walk in the Kushiro Wetlands (Hokkaido Ricoh)

Akita Prefecture
- Cleanup of Yuuhi-no-Matsubara (Akita Ricoh)
- Cleanup of Kaze-no-Matsubara (Akita Ricoh)
- Planting of Buna (Japanese beech) at the riverhead of Nagaki River (Akita Ricoh)
- Tree planting in Nishi-Yurihara (Akita Ricoh)
- Tree planting in Kisakata (Akita Ricoh)
- Planting of Buna (Japanese beech) in Shirakami (Akita Ricoh)

Yamagata Prefecture
- Yamagata Mori-no-Kanshasai/Arbor Day in Yamagata City (Yamagata Ricoh)

Miyagi Prefecture
- Participation in tree-planting ceremony commemorating the 50th anniversary of the founding of the city of Shiroishi (Ricoh Tohoku)

Fukushima Prefecture
- Planting of Buna (Japanese beech) nationwide (Fukushima Ricoh)

Gunma Prefecture
- Tree planting at Naramata Lake (Gunma Ricoh)

Tochigi Prefecture
- Placement of nets to protect trees from deer (Tochigi Ricoh)

Saitama Prefecture
- Activities to conserve Ohya thicket in Higashimatsuyama-shi (Ricoh Sales Co., Ltd., RICOH TECHNOSYSTEMS CO., LTD., and NBS Ricoh)
- Preservation of *satoyama* (community forests) in Sayama Hills (Trust No. 5 area) (Ricoh Sales Co., Ltd., and NBS Ricoh)
- Conservation activities on Mt. Kannon (Ricoh Sales Co., Ltd.)

Tokyo
- Conservation of *satoyama* (community forests) in Minamidaira Hills (Ricoh Sales Co., Ltd.)

Chiba Prefecture
- Conservation of Ricoh Chiba's Fureai-no Mori (Ricoh Sales Co., Ltd., RICOH TECHNOSYSTEMS CO., LTD., and NBS Ricoh)

Shizuoka Prefecture
- Chakkiri-kai voluntary activities (Shizuoka Ricoh)

Yamanashi Prefecture
- Environmental beautification campaign to clean Mt. Fuji (Yamanashi Ricoh)

Nagano Prefecture
- Tree planting in Afan Forest (Nagano Ricoh and Niigata Ricoh)

Toyama Prefecture
- Afforestation in Toyama (Toyama Ricoh)

Ishikawa Prefecture
- Conservation of Aodani *mizogo* Biotope (Ishikawa Ricoh)

Aichi Prefecture
- Environmental improvement of Jyoko-ji Hotaruno-sato (Ricoh Chubu)
- Participation in activities of Aigo-kai at Nagoya Heiwa Park (Aichi Ricoh)
- Oasis-no Mori Club activities in the Aioiyama green zone (Aichi Ricoh)

Gifu Prefecture
- Participation in activities of Enasan Midorino-kai (Gifu Ricoh)

Nara Prefecture
- Activities to nurture forests in Yatayama (Nara Ricoh)

Mie Prefecture
- Forest conservation activities in Ureshinocho (Mie Ricoh)
- Gozaishodake Cleanup Climb (Mie Ricoh)

Osaka
- Forest conservation activities on Mt. Satsuki (Ricoh Kansai, Osaka Ricoh, and NBS Ricoh)

Kagawa Prefecture
- Activities to conserve Fureai-no Mori in Kagawa (Shikoku Ricoh)

Tottori Prefecture
- Activities to maintain riverhead forests (Tottori Ricoh)

Okayama Prefecture
- Activities to conserve Osafune Beautiful Forest (Okayama Ricoh)

Hiroshima Prefecture
- Voluntary activities in Gongenzan Ikoi-no Mori (Ricoh Chugoku, Hiroshima Ricoh, and NBS Ricoh)

Yamaguchi Prefecture
- Forest conservation activities in Eigenzan Park in Shunan-shi (Yamaguchi Ricoh)
- Activities to conserve a city-owned forest of Japanese cypress in Kano, Shunan-shi (Yamaguchi Ricoh)

Oita Prefecture
- Voluntary activities to conserve forests in Ohaza-Higashiyama, Beppu-shi (Oita Ricoh)

Miyazaki Prefecture
- Miyazaki Yukyu-no Mori Project (Miyazaki Ricoh)
- Watershed protection forest project in Tanocho (Miyazaki Ricoh)
- Volunteer activities to promote afforestation project (Miyazaki Ricoh)

Fukuoka Prefecture
- Conserving Fureai-no Mori of Sefuriyama Mountains (Fukuoka Ricoh, Ricoh Kyushu, and NBS Ricoh)

Saga Prefecture
- The 22nd-Century Asian Forest Project (Saga Ricoh)
- Participation in the Saga 22 Forest Nurturing Festival of the Ariake Sea Basin (Saga Ricoh)

Kumamoto Prefecture
- Kabutomushi-no Mori Project (Kumamoto Ricoh)

Nagasaki Prefecture
- Participation in tree planting on Mt. Fugendake (Nagasaki Ricoh)

Kagoshima Prefecture
- Participation in Arbor Day at Fukiage Beach (Kagoshima Ricoh)

Okinawa Prefecture
- Participation in the Green Growing Festival (Okinawa Ricoh)

Planting Buna (Japanese beech) in Shirakami
Hachimori-machi, Akita Prefecture
<Akita Ricoh Co., Ltd.>

A tree-planting ceremony organized by the Shirakami Nature Association was held on October 10, 2004, at the Shirakami mountain range. Approximately 150 volunteers participated in the event, 10 of which were Akita Ricoh employees and their families. They planted trees in the hope that the natural environment of the Shirakami mountain range will be preserved for future generations.

Thicket Conservation Activities
Higashimatsuyama-shi, Saitama Prefecture
<Ricoh Sales Co., Ltd., Ricoh Technosystems Co., Ltd., NBS Ricoh Co., Ltd.>

The 8th Thicket Conservation Activities for Ohya in Higashimatsuyama-shi were held on December 12, 2004. Twelve Ricoh employees participated in the program. Because acorns from the *kunugi* and *konara* trees (oak species) were not receiving enough sunshine due to a thick growth of *hisakaki* (*Eurya japonica*), about 50 of the shrubs were cut down. Cutting the shrubs improved the environment and helped the acorns sprout and grow well.

Sample Activities in Japan

Activities to Conserve Fureai-no Mori
Chiba-shi, Chiba Prefecture
<Ricoh Sales Co., Ltd., Ricoh Technosystems Co., Ltd., NBS Ricoh Co., Ltd.>

On March 19, 2004, 24 Ricoh employees took part in the fifth forest conservation program held at Ricoh Chiba's Fureai-no Mori in Wakaba ward, Chiba Prefecture. The group of Ricoh employees was authorized and registered as a cooperative organization for a *satoyama* (community forest) ordinance issued by Chiba Prefecture. This is the first time that a corporate volunteer group was registered. The group plans to continue its conservation activities once a month based on an annual schedule.

Chakkiri-kai Voluntary Activities
Shizuoka-shi, Shizuoka Prefecture
<Shizuoka Ricoh Co., Ltd.>

On November 7, 2004, five Shizuoka Ricoh employees participated in voluntary, weeding of the area along a hiking course in Nihondaira. Hikers can walk more comfortably now, and the amount of illegally dumped garbage has decreased, which helped improve the landscape.

Activities to Conserve Osafune Beautiful Forest
Okayama Prefecture
<Okayama Ricoh Co., Ltd.>

Eleven Okayama Ricoh employees participated in Forest Volunteer Day, promoted by the National Land Afforestation Promotion Organization, on August 21, 2004, and helped weed the Osafune Beautiful Forest in Osafunecho, Okugun. At first some of them found it difficult to cut the two-meter tall grass using a sickle with a one-meter blade, but they gradually got used to it.

Planting Trees in Afan Forest
Nagano-shi, Nagano Prefecture
<Nagano Ricoh Co., Ltd, Niigata Ricoh Co., Ltd.>

On May 8, 2004, eight Ricoh employees took part in the planting of oak saplings organized by the C.W. NICOL Afan Woodland Trust. Part of the forest is used for the experimental growing of seedlings, some of which were transplanted by the participants. Blessed with fine weather, the participants enjoyed transplanting 150 saplings. Later, they plan to weed the area where the saplings were transplanted.

Activities to Conserve Fureai-no-Mori
Kagawa Prefecture
<Shikoku Ricoh Co., Ltd.>

In line with its commitment to supporting the conservation and management of national forests, the company is helping to conserve Kagawa Fureai-no-Mori. Four Shikoku Ricoh employees participated in conservation activities in March and May of 2004. These activities consisted of thinning trees, cutting underbrush, weeding the area along the road, picking up trash and cleaning signboards.

Tree Planting at Mt. Fugen
Nagasaki Prefecture
<Nagasaki Ricoh Co., Ltd.>

On November 7, 2004, voluntary tree planting was carried out in the Unzen/Fugen area. A total of 49 Nagasaki Ricoh employees, including their families, took part in the work. Among the 49 participants, 19 were children. Participation by a large number of children was encouraging. We can expect future generations to continue and expand these activities.

Sample Activities Outside Japan

Supporting Children Planting Trees
<Lanier (Australia) Pty. Ltd. (Australia)>

In Australia, National Schools Tree Day was established to build children's awareness of environmental conservation and help them feel the pleasures of growing trees. On July 23, Tree Day, Lanier Australia, a sales company, participated in a tree planting activity with Eltham East Primary School in Melbourne by donating 150 saplings. Lanier employees and 50 students planted the trees.

Cleaning a Stretch of Beach and Observing Nature with Children
<Ricoh Asia Pacific Pte. Ltd. and Ricoh Singapore Pte. Ltd. (Singapore)>

Ricoh Asia Pacific (RA), the regional sales headquarters for the Asia-Pacific region, and Ricoh Singapore (RSP), a sales company, cleaned up one of the beaches of Pulau Ubin, a Singaporean island, in August 2004. Of those who participated in this event, 127 were staff members, including their families, and 20 were children from Whispering Hearts. Led by Green Volunteers Network, a nature conservation group, participants walked among small fruit trees and herbs as well as the native plants of a mangrove forest. They marveled at the natural environment before starting to clean up the beach.

Riverhead Forest Conservation
<Ricoh Corporation (Mexico)>

Since February 2004, Ricoh Corporation, the Americas Regional Sales Headquarters, has supported the conservation of the Sierra Tarahumara forest in Mexico with the World Wide Fund for Nature (WWF). The forest covers 60,000 square kilometers and has riverheads that supply water to all 60,000 square kilometers of North Mexico farmland. Due to expanding desertification caused by deforestation, the headwaters are rapidly drying up. Ricoh Corporation and WWF believed that it was important to stimulate community based forest conservation by building a partnership with the people of Tarahumara. In fiscal 2004, Ricoh and WWF called for the local people's understanding and cooperation in future activities to promote forest conservation by training community leaders and combining economic development in the region with environmental conservation.

Supporting Forest Surveys for the Conservation of Biodiversity
<Ricoh France S.A. (France)>

Ricoh France, a sales company, supports Pro-Natura, an NPO engaged in forest surveys in many countries for the conservation of biodiversity. In fiscal 2004, the company provided financial support for the manufacturing of Canopy Glider, which is used in investigating tree canopies.

Expansion of Environmental Volunteer Activities
<Ricoh Group (Japan)>

Environmental volunteer leaders have expanded their activities significantly. Although at first they worked only with their families and friends, they now participate in more extensive activities involving local children and communities. In addition to production sites, sales companies across the country also promote voluntary activities.

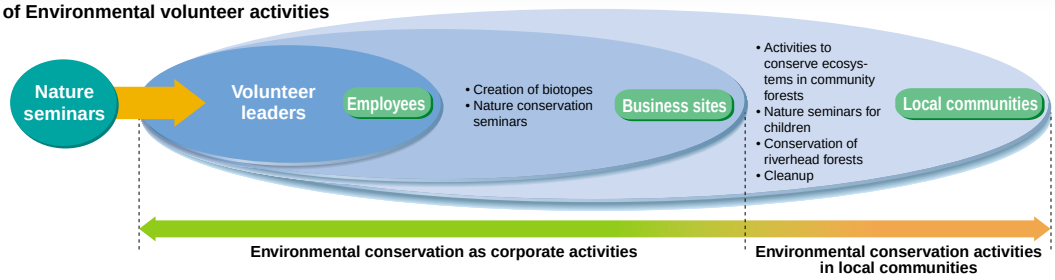
Environmental Volunteer Activities

Cleaning Up Sagami River (Ricoh Toda Plant)
The Sagami River's riverbed and walking trail near the Ricoh Toda Plant in Atsugi, Kanagawa Prefecture, were cleaned on June 2, 2004. Sixteen Toda Plant employees participated in this project.

Rehabilitating Hatano Farmland (Ricoh Hatano Plant)
On September 18, 2004, members of the Farmland Refresh Group at Ricoh Hatano Plant in Hatano-shi, Kanagawa Prefecture, helped with organic farm work. This was an initiative to support a project promoted by Hatano City to rehabilitate degraded and idle farmland.

Preserving the Kitayama Wetlands (Ricoh Elemex Corporation)
On November 7, 2004, Ricoh Elemex employees took part in activities to conserve the Kitayama Wetlands in Okazaki City, Aichi Prefecture. They cut down trees in an artificial forest and cleaned the remnants. The Kitayama Wetlands is designated as one of Japan's 500 important wetlands.

Expansion of Environmental volunteer activities



Cleaning Up Shiroishi River (Tohoku Ricoh Co., Ltd.)
Shitaba-machi in Miyagi Prefecture is famous for its cherry blossoms and is designated as one of Japan's best 100 cherry blossom viewing spots. On March 19, 2004, Tohoku Ricoh employees and their families (a total of 14 people) took part in cleaning up Shiroishi River to prepare for the Shibata Cherry Blossom Festival.

Conservation of the *Satoyama* Area of Mt. Satsuki (Ikeda Plant and Yashiro Plant)
Ikeda Plant and Yashiro Plant employees and their families participated in activities to conserve the *satoyama* (community forest) area of Mt. Satsuki in Ikeda City, Osaka, on November 20, 2004. Two sets of tables and benches that were bought with the funds from Free Will, Ricoh's social contribution club, were installed on the observation deck.

Riverhead forest conservation
On October 23, 2004, Yadoriki Shinboku Group members and their families (17 in total) participated as a partner corporation in the riverhead forest conservation program organized by Kanagawa Prefecture. The group is Ricoh's environmental volunteer group.

Cleaning Up Senbonhama Beach in Numazu (Ricoh Numazu Plant)
On June 27, 2004, 25 Ricoh Numazu Plant employees volunteered to clean up Senbonhama Beach in the 2004 Festa Coste del Gomi in Senbonhama, Shizuoka Prefecture. About 800 people participated in the event and collected a large amount of garbage that was carefully disposed of.

Cleaning Up the Izunuma/Uchinuma Wetlands (Hasama Ricoh)
The Izunuma/Uchinuma Wetlands in Miyagi Prefecture, which are listed under the Ramsar Convention, are the winter home for swans and geese. On March 20, 2004, seven Hasama Ricoh employees volunteered to clean up the wetlands with other participants.

Thicket Conservation at Hatano City
Five members of the Hatano Thicket Conservation Group cleared the fallen leaves in the thicket of Lake Shinsei on December 12, 2004.

Cleaning Up the Tottori Sand Dunes (Ricoh Tottori Group)
On September 26, 2004, 90 Ricoh Tottori Group employees took part in cleaning up the Tottori Sand Dunes, a national park. Thanks to this program, which takes place annually, the amount of garbage that litters the area is decreasing each year.

Cleaning Up the Beach at Kamakura
On September 19, 2004, 115 Ricoh Group employees and their families cleaned Zaimokuza beach in Kamakura and enjoyed making sand sculptures.

Conserving the Shishigaya Green Zone
On February 5, 2004, 15 members of the Shishigaya Green Zone Conservation Group trimmed and cut plum trees and mended fences to conserve the landscape of the Shishigaya Green Zone in Yokohama City, Kanagawa Prefecture.

2005

FOCUS 04

Environmental Volunteer Leader Development Program in Japan

Corporate Environment Division
Megumi Kawahara, Deputy Manager, Environmental Communication Office (center)
Kazuyuki Kishi, Environmental Communication Office (right)
Keishi Nakamura, Environmental Communication Office (left)

We nurture environmental volunteer leaders to promote environmental conservation activities in local communities.

The Ricoh Group promotes all-employee participatory sustainable environmental management. It is very important to build employee awareness because it is the employee who carries out the activities that achieve the Group's goals. How environmentally conscious employees act at home and in the communities where they live will contribute to reducing environmental impact throughout society. In 1999, Ricoh launched the Environmental Volunteer Leader Development Program. By the end of fiscal 2004, as many as 277 people had participated in the program.

Environmental Volunteer Leader Development Program

Ricoh's nature seminar elementary course (overnight training held three times a year)

Participants learn about the natural environment surrounding them and feel the importance of the ecosystem in the field as well as the basics of volunteer activities. On completion of the program, participants are certified as environmental volunteer leaders.

Registered as a leader

Follow-up Training

Ricoh Company Meeting for Environmental Volunteer Leaders (held twice a year on weekdays)

This meeting is designed for leaders to exchange information and develop skills. Examples of the volunteer activities that leaders take part in are introduced, and participants get the latest information from outside experts.

Advanced Training

Nature seminar intermediate course (overnight training held once a year)

Participants learn how to take more joy in continuing volunteer activities and gain the knowledge and skills required to give environmental training to other people.

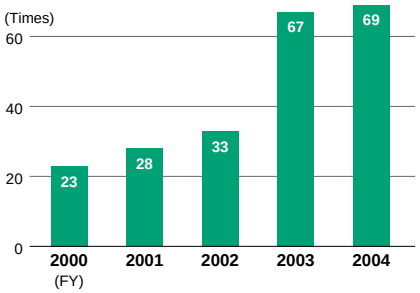
Advanced Training

Ricoh forest seminar (Two-night seminar held once a year)

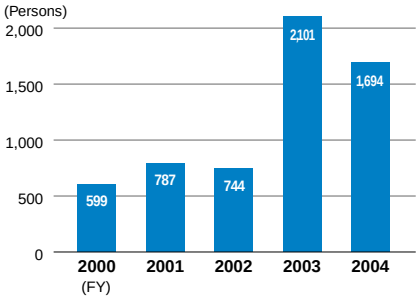
Participants learn about the composition and structure of forests that are often unnoticed as well as the mechanism of nature and how men deal with forests. Training takes place in the Afan Forest in Nagano Prefecture.

Environmental volunteer leaders take the initiative in environmental activities involving family, colleagues, and local people.

Number of Environmental Volunteer Activities



Number of Participants in Environmental Volunteer Activities



Q What is the Environmental Volunteer Leader Development Program?

A The program nurtures volunteer leaders who can promote environmental conservation activities by themselves.

We believe that it is more effective to encourage employees to plan and carry out volunteer activities by themselves, and in the process nurture leaders to promote such activities, than to make them participate in company-run activities. In June 1999, the Ricoh Group launched an Environmental Volunteer Leader Development Program. In fiscal 2001, the program was expanded to include Ricoh Group employees and retirees. By the end of fiscal 2004, as many as 277 persons had participated in the program. This fiscal year, environmental volunteer leaders planned and organized 69 projects to build environmental awareness. They worked with other employees, their families, and friends to help local communities. After completing the program and taking part in actual environmental activities, many of the leaders wish to draw up projects of their own. We provide them with information about volunteer activities in the community and the opportunity to join those activities.

Q How does the program work?

A Participants will become more conscious and knowledgeable and acquire necessary know-hows.

The program begins with the elementary courses, followed by intermediary courses at Ricoh nature seminars, forest seminars, and Ricoh Company Meetings. In the elementary courses, we, with the cooperation of NPOs and specialists, teach the importance of ecosystem conservation as well as basic knowledge about planning and organizing volunteer activities. At Ricoh Company Meetings, leaders gain new knowledge, report their activities, and exchange information and opinions with other leaders. In the intermediary courses, we nurture personnel who are able to not only organize activities but also convey to others how such activities work and how much fun they are. Forest seminars aim at nurturing personnel with expertise in forest conservation.

Nature seminar elementary course

Q How do you wish to develop activities?

A We hold regional nature seminars to increase the number of leaders.

We started nature seminars in the Tokyo area, which made it difficult for employees living outside the area to attend. In fiscal 2002, the first seminar in the Kansai area was held at Ricoh Ikeda Plant in Osaka. It attracted employees who were interested in the seminars but were not able to join due to geographical reasons. To ensure that environmental volunteer activities would be carried out after the completion of the seminar, we asked City Hall to provide us with a nearby thicket and invited a member of an NPO taking care of the thicket to give a lecture. After completing the seminar, the participants formed their own group, called Green Conductor, and they are continuing their activities. We plan to continue holding regional nature seminars, and in fact seminars are scheduled to be held in the Shikoku, Kanto, and Kansai areas in fiscal 2005. Networks with various administrations and NPOs throughout the country will be developed with leaders playing a central role, which will lead to more extensive environmental volunteer activities.

Employee feedback

INTERVIEW — Message from an Environmental Volunteer Leader

"Having met like-minded people at a nature seminar, I began to actively take part in voluntary programs."

Kiyoko Iwamoto
Business Assistance Center, Business Planning Division, Ricoh Electronic Devices Company, Ikeda Plant

Nature seminars gave me the opportunity to act on my own initiative.

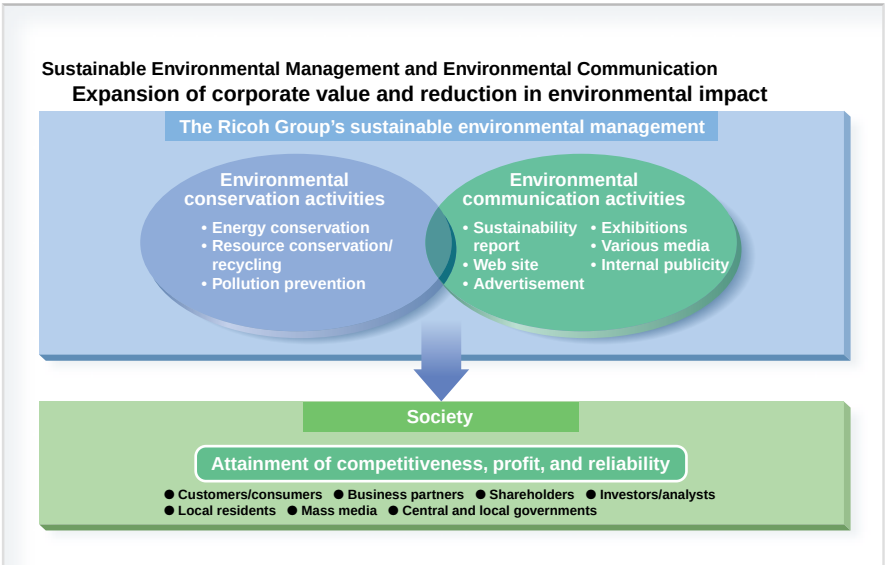
I have always liked hiking and mountaineering as well as drawing the plants I see and learning their names. When I started thinking about nature and life, I learned that Ikeda Plant, the place I work, was going to hold a nature seminar. Being interested in volunteer activities, I decided to join the seminar. I was pleasantly surprised to discover myself among so many people that shared the same interest. We became friends at the get-together for the seminar, talked about what we could do, signed up members, and launched a volunteer group.

Calling for employees' participation in environmental activities

It has been two years since we began our activities on Mt. Satsuki. We manage bamboo forests and maintain hiking paths as well as teach how to make baskets using vines. By posting a notice with photos at our workplace to invite new members to our activities, we successfully attracted new members. Our members also include local citizens. I would like to continue our efforts to provide people with the opportunity to enjoy nature.

Promoting Environmental Conservation Activities Through the Promotion of Communications in Good Faith

To be a going concern that is favorably rated by society, it is important to not only promote environmental conservation activities, but also to make an effort to inform as many people as possible of our philosophy and activities so that we may win public confidence. The active disclosure of information to internal and external stakeholders will contribute to the further activation of activities and the creation of a resource-recirculating society. With the firm belief that environmental communication and conservation activities are the two wheels of sustainable environmental management, the Ricoh Group is promoting the conservation activities communications in good faith.



Communication Activities

Environmental Web Site

<Ricoh Group (Global)>

Ricoh's environmental web site focuses on visibility, simplicity, and user-friendliness so that visitors can easily find the information they want, including the latest news and information on products covered by the Law Concerning the Promotion of the Procurement of Environmentally Conscious Goods and Services by the State and Other Entities (Law on Promoting Green Purchasing). On the ECO TODAY web site for children, a section called the Tempel-Tuttle Story is set up. In it, forest ecosystem conservation activities are explained in an easy-to-understand way, using examples from Mexico, China, Malaysia, and Japan, and children can learn about environmental problems through quizzes and games. The ECO TODAY web site is also available in English and is linked to relevant organizations throughout the world.

http://www.ricoh.co.jp/ecology/ecotoday/index_e.html

Environmental Advertisements

<Ricoh Group (Global)>

Ricoh produces environmental advertisements to inform of its idea of sustainable environmental management based on actual company activities. In fiscal 2004, three sustainable reports were issued, and advertisements featuring the forest ecosystem conservation project, which Ricoh promotes with NPOs at various places in the world, were made. Advertisements are placed both in Japan and overseas.

Advertisement regarding Sustainability (Wall Street Journal)

Advertisement of a forest ecosystem conservation project (National Graphics)

Exhibitions

<Ricoh Group (Japan)>

In December 2004, Ricoh participated in a general environmental exhibition titled Eco Products 2004 held at Tokyo Big Sight. Under the theme "Toward Competitive Sustainable Environmental Management," Ricoh introduced a high-speed digital multifunctional copier that is able to recover from energy-saving mode within 10 seconds and described its efforts to completely eliminate the use of environmentally-sensitive substances. Ricoh thus presented its state-of-the-art eco-technology and the efforts made by all of its employees to realize sustainable environmental management. At a joint booth with Cosmo Oil Co., Ltd., the social contribution activities conducted worldwide by both Ricoh and Cosmo Oil were showcased. At the booth, we encouraged visitors to join an environmental-quality-promotion event, in which visitors chose the projects they would like to support, with the two companies promising to financially support the planting of one sapling for each visitor who participated.

Ricoh and COSMO OIL joint booth

Issuance of Sustainability Reports (Environment)

<Ricoh Group (Global)>

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 year 2002 edition, published in July 2002 under the new name, "Sustainability Report," the Ricoh Group has presented the concepts and performance of its sustainable environmental management. For the 2004 edition, we issued in June three kinds of reports at the same time, namely, the Sustainability Report (Environment), Sustainability Report (Corporate Social Responsibility), and Annual Report. Ricoh was the winner of the Continued Excellence Award for CSR Report, which is given to only one company by Toyo Keizai Inc., in recognition of its significant achievements in publishing sustainability reports as well as past CSR activities. Ricoh's sustainability reports and annual report are available online at the web site address given below.

*http://www.ricoh.com/csr/report/

Issue Dates of Reports and Number of Copies Issued

		Date of Issue	No. of Copies	No. of Pages
Ricoh Group Environmental Report 1998	Japanese	Jan. 1999	26,200	30
	English	Jan. 1999	500	
Ricoh Group Environmental Report 1999	Japanese	Sept. 1999	51,300	32
	English	Sept. 1999	8,375	
Ricoh Group Environmental Report 2000	Japanese	Sept. 2000	45,950	60
	English	Dec. 2000	6,800	
Ricoh Group Sustainability Report 2001	Japanese	Sept. 2001	25,950	74
	English	Dec. 2001	7,000	
Ricoh Group Sustainability Report 2002	Japanese	Jul. 2002	21,315	84
	English	Sept. 2002	6,000	
Ricoh Group Sustainability Report (Environment) 2003	Japanese	Jun. 2003	21,045	84
	English	Sept. 2003	7,000	
Ricoh Group Sustainability Report (Environment) 2004	Japanese	Jun. 2004	18,245 (As of April 30, 2005)	84
	English	Sept. 2004	7,000	

Environmental Reports Issued by Business Sites

<Ricoh Group (Global)>

To enhance relationships with local communities, Ricoh Group business sites issue their own environmental reports as a means of communication with government offices, residents of neighboring areas, and family members of their employees. The Ricoh Group established the guidelines for the preparation of site reports on environmental conservation for its business sites in fiscal 2001. In fiscal 2004, Ricoh Leasing Co., Ltd. and Fukui Ricoh Co., Ltd. issued site reports for the first time. Ricoh Fukui Plant, which has issued a site report since 1999, adopted a new system in fiscal 2004, under which they prepared a summary for the report. Ricoh Fukui Plant was given the Continued Excellence Award for the Site Report of the 8th Environmental Report Award. They also won the Excellence Award of the Environmental Communication Awards 2004.

Employee feedback

INTERVIEW — **Production of an Environmental Site Report**

"Trying to provide local people with the information they need in a form they like."

Chiaki Terashima
Assistant Manager
General Affairs Group,
Ricoh Fukui Plant

We issued Ricoh Fukui Plant's first *Environmental Site Report* in 1999. Since then, we have improved the report in terms of what information should be given to which people. Because we operate in a community, we think that people living near our plant should be the first to receive our environmental report and have an opportunity to visit our plant to see the actual production process. This is because we would like the community to know that environmental issues are being properly managed at our plant. As an initiative to promote this policy, in fiscal 2003 we began offering opportunities to the ward mayor, the president of the farmers' union, and the chairman of the welfare committee to come to our briefing on environmental issues based on the report and visit our plant. Listening to people's opinions, we confirmed that their primary concern is our activities in preventing pollution. The opinions of the local people and our answers to improve the issues are described in our environmental report. In fiscal 2004, we also began distributing a summary of the report to all employees. The report outlines the activities participated by all employees during the year. We hope that by sharing such information with everyone concerned, we can make further improvements.

Building Awareness in Children

Supporting the World's Largest Science Competition for Senior High School Students

<Ricoh Corporation (United States)>

Ricoh Corporation, the Americas Regional Sales Headquarters, is a major sponsor of the International Science and Engineering Fair (ISEF). ISEF, now in its 56th year, is the world's largest science competition for senior high school students. More than 10 million students around the world are expected to participate. Since 2005, Ricoh Corporation has supported 2 of the 14 award categories: Environmental Science and Team Projects. Also, the company created a new award, the Ricoh Sustainable Development Award, to raise awareness of the importance of environmental conservation and sustainability. This award is given to research that offers the greatest potential for combining environmental conservation and business. The award ceremony was held in May in Phoenix, Arizona, where a scholarship of $50,000 and a trip to Expo 2005 Aichi were presented to the winners.

Mr. Ichioka, Chairman of Ricoh Corporation, and the winners

Supporting the Development of Environmental Conservation Activities at Elementary and Junior High Schools

<Ricoh (Japan)>

Ricoh served as sponsor for the School Eco Awards organized by the Sankei Shimbun Photo News Center. To promote environmental conservation activities at elementary and junior high schools throughout the country, the awards give recognition to schools showing achievements in their environment-conscious reports. The first awards were held in March 2005. Ricoh became a sponsor as an endorsement of the idea behind the awards, which addresses the importance of exposing children to environmental issues and making them understand that their participation helps save the global environment.

Targeted Period

This report describes the sustainable environmental management activities of the Ricoh Group in fiscal 2004 (April 1, 2004 to March 31, 2005).

Environmental impact and environmental acounting data: fiscal 2004 data Descriptions in articles and chronological tables: fiscal 2004 data (in principle)

The environmental impact and environmental accounting data are 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 Ricoh Group data presented elsewhere in this report, e.g., in the organization profile and global network. The name Ricoh refers to "Ricoh Co., Ltd," and not the "Ricoh Group" as a whole.

● Important Organizational Changes Made During the Report Period

On October 1, 2004, all shares of Hitachi Printing Solutions Ltd. were transferred to Ricoh, and Ricoh Printing Systems Ltd. was established.

On January 1, 2005, Ricoh's five sales companies in the metropolitan area merged to become Ricoh Sales Co., Ltd.

● Past and Future Reports

The Ricoh Group has published annual environmental reports every year since 1997, which covered fiscal 1996. The 2005 Report in Japanese was issued in June 2005. The 2006 Report in Japanese will be issued in June 2006.

Scope of Collection of Environmental Impact and Environmental Accounting Data

Environmental impact and environmental accounting data are collected from Ricoh's production and non-production sites and Ricoh Group companies that have established their own sustainable management systems.

■ Japan

- **Ricoh production sites:**
  Atsugi Plant, Hatano Plant, Numazu Plant, Gotemba Plant, Fukui Plant, Ikeda Plant, Yashiro Plant
- **Ricoh nonproduction sites:**
  Aoyama Head Office, Ohmori Office, Ohmori Office No. 2, Ginza Office, Ricoh System Center, Shin-Yokohama Office, Ricoh Service Parts Center, Research and Development Center, Software Research Center, Toda Technical Center, Applied Electronics Laboratory
- **Ricoh Group major manufacturing subsidiaries:**
  Tohoku Ricoh Co., Ltd.; Hasama Ricoh, Inc.; Ricoh Unitechno Co., Ltd.; Ricoh Optical Industries Co., Ltd.; Ricoh Keiki Co., Ltd.; Ricoh Microelectronics Co., Ltd.; Ricoh Elemex Corporation
- **Ricoh Group major nonmanufacturing subsidiaries:**
  Ricoh Logistics System Co., Ltd.; Ricoh Techno Systems Co., Ltd.; 42 sales companies; and NBS Ricoh Co., Ltd.
  Part Component System Co., Ltd.[1]
  Ricoh Leasing Company, Ltd.[2]

■ The Americas

- **Manufacturing company:**
  Ricoh Electronics, Inc. (U.S.A.)
- **Nonmanufacturing companies:**
  Ricoh Corporation (U.S.A.) and two sales companies

■ Europe

- **Manufacturing companies:**
  Ricoh UK Products Ltd. (U.K.)
  Ricoh Industrie France S.A.S. (France)
- **Nonmanufacturing companies:**
  Ricoh Europe B.V. (the Netherlands) and 29 sales companies in the region

■ China

- **Manufacturing company:**
  Ricoh Asia Industry (Shenzhen) Ltd. (China)

■ Asia-Pacific Region

- **Nonmanufacturing companies:**
  Ricoh Asia Pacific Pte. Ltd. (Singapore)

1. Environmental accounting data only
2. Part of environmental impact data only

Corporate Philosophy/General Principles on the Environment/Management Philosophy/ Principles of the Environmental Reporting

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 environmental 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 to ensure survival in a time filled with increasing change, information-oriented societies, diverse values, and more intense competition.

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

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 and in 2004. These principles show Ricoh's commitment to sustainable environmental 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

As a global citizen, Ricoh group is obligation-conscious of environmental conservation. In addition, we strive to honor our environmental responsibilities and concentrate group-wide efforts in environmental conservation activities, implementation of which we believe to be as significant as our business operations.

Action Guideline

1. Complying with domestic and international regulations as a matter of course, we dutifully fulfill our responsibilities, setting goals toward minimizing the environmental effects of business practice in keeping up with broader social expectations. In achieving these goals, we endeavor to create economic values.
2. We take steps to develop and promote technology that will enable us to reduce environmental effects, and proactively utilize such innovations.
3. In all our business activities, we strive for awareness of environmental impact, thereby involving all Ricoh employees in implementing continuous improvements to prevent pollution, use energy and natural resources more efficiently.
4. To provide our products and services, we spare no effort to reduce environmental effects in all stages of product lifecycle, from procurement, manufacturing, sale, and logistics, to usage, recycling, and disposal.
5. We at Ricoh wish each employee to be attentive to a broader range of social issues and mindful of enhancing environmental awareness through proactive learning processes, designed to commit the employee to environmental conservation activities according to his or her responsibility.
6. Coordinating closely with every country and region, we contribute to wider society, for whom we actively disclose information, participate, and assist in environmental conservation activities.

Established in Feb.1992 and revised in Oct. 2004.

Principles of the Environmental Reporting

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

1. The environmental reporting must contain true statements about companies' state of sustainable environmental management[1].
2. The environmental reporting must fairly represent the results of all the sustainable environmental management activities[2].
3. The environmental reporting must clearly represent the facts necessary for stakeholders not to misjudge the environmental impact of companies[3 and 4].
4. The environmental reporting 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' sustainable 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 sustainable environmental management.
5. Ongoing applications may be cancelled only if there is good reason and it has been determined that environmental reporting 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.

Ricoh Co., Ltd. was established in Japan on February 6, 1936. The Ricoh Group consists of Ricoh Co., Ltd., 325 subsidiaries, and 22 affiliates*. The Ricoh Group engages in activities on a global scale that include the development, production, marketing, after-sales services, and recycling of office equipment including copiers and printers in five regions around the world (Japan, the Americas, Europe, China, and the Asia-Pacific region). The Group has more than 75,000 employees.

Ricoh Aoyama Head Office
Ricoh Bldg., Minami-Aoyama 1-15-5,
Minato-ku, Tokyo 107-8544, Japan
Phone: +81-3-3479-3111
http://www.ricoh.com/

* The definition of an affiliate follows the U.S. Generally Accepted Accounting Principles (U.S. GAAP), which differ slightly from the definition given in Japan's GAAP.

Ricoh Group Brands

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

Brand logos

RICOH

* The new logo will come into effect in September 2005.

RICOH

savin®

nashuatec

Rex-Rotary

Gestetner

LANIER

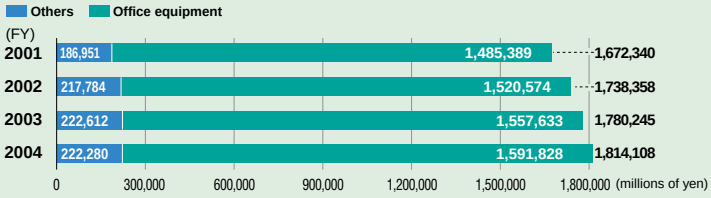
Market Evaluation Results and Economic Performance

In 2004, Ricoh held the largest share of the office-use black-and-white copier market and the second largest share of the color copier market in Japan. In the same year, the Ricoh Group held the second largest share of both the office-use black-and-white copier and color copier markets in the Untied States[1]. In the office-use black-and-white copier market in Europe[2], the Group held the largest share for the eighth year in a row. In fiscal 2004, Ricoh's consolidated sales increased but profits declined[3].

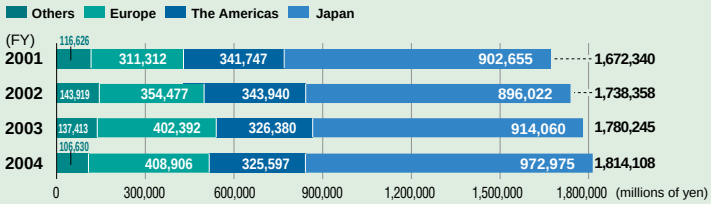
1. Total number of products marketed under the Ricoh, Savin, Gestetner, and Lanier brand names (excluding the segment for up to 10 ppm copiers)
2. Including products marketed under the Ricoh, Gestetner, Nashuatec, Rex-Rotary, and Lanier brand names as well as OEM products (excluding the segment for personal copiers)
3. For details, see the IR section of Ricoh's website. (http://www.ricoh.com/IR/)

Source: Gartner Dataquest, March 2005, GJ05138 (Data for Japan and the United States)
Infosource S.A. (Data for Europe)

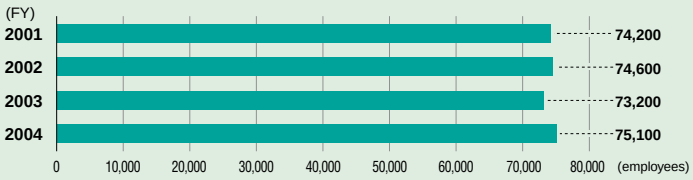
The Ricoh Group's Sales Classified by Business



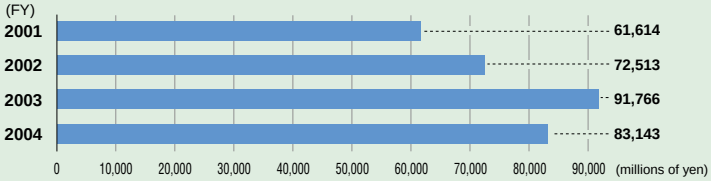
The Ricoh Group's Sales Classified by Region



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.

Major Product Lines

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

Other businesses

Optical devices, measuring instruments, semiconductors, others

<Black-and-white multifunctional copier> imagio Neo 752ec*

<Color multifunctional copier> Aficio 3245C

<GelSprinter> Aficio G700

<Black-and-white laser printer> Aficio AP610N

<Color laser printer> Aficio CL7100

<Digital camera> Caplio R2

<Digital duplicator> Satelio A450F*

<Electronic device> R1100D

<Application software> Ridoc IO Gate*

* Only in Japan

Business Site Data

	Site (Resource Conservation and Recycling) See page 39.				
	Waste recovery rate (%)	Total waste amount produced (t)[1]	Total waste discharge amount (t)[2]	Final waste disposal amount (t)	Water consumption (1,000 tons)
Ricoh's Business Sites					
Atsugi Plant—Office equipment and other products 1005 Shimo-Ogino, Atsugi, Kanagawa 243-0298, Japan	100	1,253	1,253	0.0	139
Hatano Plant—Printed circuit boards and electronic components 423 Hirasawa, Hadano, Kanagawa 257-8586, Japan	100	174	174	0.0	14
Numazu Plant—Supplies 16-1 Honda-machi, Numazu, Shizuoka 410-8505, Japan	100	9,000	4,824	0.0	1,919
Gotemba Plant—Copiers, fax machines, and data processing systems 1-10 Komakado, Gotemba, Shizuoka 412-0038, Japan	100	1,811	1,811	0.0	64
Fukui Plant—Supplies 64-1 Ohmi, Sakai-cho, Sakai-gun, Fukui 919-0547, Japan	100	2,339	2,339	0.0	186
Ikeda Plant—Electronic devices 13-1 Himemuro-cho, Ikeda, Osaka 563-8501, Japan	100	128	121	0.0	149
Yashiro Plant—Electronic devices 30-1 Saho, Yashiro-cho, Kato-gun, Hyogo 673-1447, Japan	100	478	478	0.0	152
Non-production sites	99.1	2,003	2,003	17.0	216
Total	99.9	17,188	13,005	17.0	2,840
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	1,970	1,970	0.0	161
Hasama Ricoh, Inc.—Parts for copiers and data processing equipment 86 Aza-Kitasanden, Sanuma, Hasama-cho, Tome-gun, Miyagi 987-0511, Japan	100	2,342	2,342	0.0	10
Ricoh Unitechno Co., Ltd.—Fax machines, copiers, and microfilm equipment 713 Tsurugasone, Yashio, Saitama 340-0802, Japan	100	501	501	0.0	16
Ricoh Optical Industries Co., Ltd.—Photographic equipment 10-109 Ohata, Hanamaki, Iwate 025-0303, Japan	100	884	884	0.0	58
Ricoh Keiki Co., Ltd.—Parts for copiers and data processing equipment 3144-1 Aza-Ipponguri, Shimoizumi, Kuboizumi-machi, Saga 849-0903, Japan	100	195	195	0.0	3
Ricoh Microelectronics Co., Ltd.—Printed circuit boards 10-3 Kitamura, Tottori, Tottori 680-0911, Japan	100	569	569	0.0	18
Ricoh Elemex Corporation—Office equipment, clocks, watches, and educational equipment 2-14-29 Uchiyama, Chikusa-ku, Nagoya, Aichi 464-0075, Japan **Ena Plant** 1218-2 Nakano, Nagashima-cho, Ena, Gifu 509-7205, Japan **Okazaki Plant** 3-69 Ida-cho, Okazaki, Aichi 444-8586, Japan	100	769	769	0.0	95
Total	100	7,229	7,229	0.0	361
The Ricoh Group's Manufacturing Subsidiaries outside Japan					
Ricoh Electronics, Inc. (REI)—Office equipment and supplies One Ricoh Square, 1100 Valencia Avenue, Tustin, CA 92780, U.S.A.	100	8,037	8,037	0.0	183
Ricoh UK Products Ltd. (RPL)—Office equipment and supplies Priorslee, Telford, Shropshire TF2 9NS, U.K	100	1,166	1,166	0.0	29
Ricoh Industrie France S.A.S. (RIF)—Office equipment and supplies 144, Route de Rouffach 68920, Wettolsheim, France	100	7,178	7,178	0.0	61
Ricoh Asia Industry S.Z. Ltd. (RAI)—Copiers Color TV Industrial Zone, Futian District, Shenzhen, P.R. China	100	1,239	1,239	0.0	172
Total	100	17,619	17,619	0.0	445

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 prior to 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 potential. See page 43.

	Sites (Preventing Global Warming) See page 33.		Sites (Pollution Prevention) See page 43.				
	Energy consumption		Emissions into air (NOx) (t)	Emissions into air (SOx) (t)	Water discharge (BOD) (t)	'Ricoh target substances for reduction' used[3] (t)	'Ricoh target substances for reduction' discharged[3] (t)
	($t\text{-}CO_2$)	(TJ)					
	14,222	349.7	1.644	0.019	1.616	92.3	6.4
	1,331	35.3	0.037	0.000	0.481	187.4	0.0
	34,344	759.4	17.635	0.000	3.096	12,666.1	2,830.8
	3,325	75.5	0.752	0.023	0.073	0.0	0.0
	22,918	484.8	7.305	0.067	1.219	9,236.5	649.2
	7,456	193.0	1.137	0.000	0.671	101.3	28.3
	28,447	748.6	3.552	0.000	0.370	553.9	302.8
	20,515	526.4	3.143	0.178	0.072	7.4	0.0
	132,559	3,172.6	35.205	0.287	7.598	22,845.0	3,817.4
	10,335	229.7	3.065	2.052	7.076	1,814.4	414.7
	1,880	44.5	0.322	0.240	0.068	21.9	18.6
	1,314	34.2	0.120	0.000	0.033	20.8	20.8
	7,813	184.0	1.493	0.893	0.220	75.0	7.0
	906	24.6	0.000	0.000	0.000	163.9	0.3
	3,132	79.9	0.438	2.978	0.162	229.0	2.2
	6,791	171.5	0.545	0.077	0.128	305.2	66.2
	32,171	768.4	5.983	6.240	7.687	2,630.3	530.0
	44,723	413.1	11.409	0.000	4.607	511.9	12.9
	9,183	98.4	1.819	0.000	0.000	904.0	723.2
	10,087	299.5	7.352	0.000	1.886	2.8	0.5
	14,007	78.6	0.471	0.442	1.286	35.4	0.0
	78,000	889.7	21.051	0.442	7.779	1,454.2	736.6

The Ricoh Group's Environmental Conservation Activities

■ 1976–March 2004

	The Ricoh Group's Major Activities		Society's Recognition of the Ricoh Group's Major Activities		Worldwide Trends
1976	Establishes Environmental Promotion Section			1971	Environment Agency set up Ramsar Convention adopted
1990 December	Sets up Environmental Administration Office			1977	United Nations Conference on Desertification held UNEP Conference held
1992 February March	Establishes Ricoh General Principles on the Environment FT5570 copier awarded the BAM (initial version)			1987	Montreal Protocol adopted
				1990	London meeting (set phaseout of CFCs and HCFCs)
1993 March May May December	Ricoh achieves total elimination of ozone-depleting substances (specific chlorofluorocarbons (CFCs), specific types of halon, carbon tetrachloride, etc.). Announces the recycled product design basic policy and implements recyclable design level 1 Launches materials labeling on plastic parts The Ricoh Group achieves total elimination of ozone-depleting substances (specific chlorofluorocarbons (CFCs), specific types of halon, carbon tetrachloride, etc.).	1993 May September	Ricoh UK Products' copier photosensitive drum recycling technology receives the Queen's Award in the U.K. Ricoh UK Products' power consumption reduction activities receive Business Energy Awards Grand Prize.	1991	Recovered Resource Use Promotion Law enacted
				1992	UN Conference on Environment and Development (Earth Summit) held
				1993	Energy Saving Law revised
1994 August November	Completes the Comet Circle concept Implements labeling of materials and grade on plastic parts	1994 May	Ricoh UK Products' copier photoconductor drum recycling technology receives the European Better Environment Award for Industry.		
1995 February October December	Holds First Ricoh Company Environment Conference Announces International Energy Star certified products Ricoh Gotemba Plant acquires ISO 14001 certification (the first certification given by a Japanese certification organization).	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.	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 July	Ricoh UK Products acquires BS 7750/ISO 14001 certification.			1996	ISO Environmental Auditing Standards of Environmental Management System established International Energy Star Award launched by EPA
1997 March	Sets management of 79 types of chemical substances	1997 March	Ricoh Corporation (the U.S.A.) wins Energy Star Copier Prize.		
1998 April May October	Ricoh establishes the Recycling Division. Issues the *Ricoh Group Green Procurement Guidelines* Ricoh Fukui Plant achieves a 100% resource recovery rate (Zero-Waste-to-Landfill).	1998 December	Ricoh ranked number one in the Second Corporate Environmental Management Level Survey by the *Nihon Keizai Shimbun* newspaper.	1997	COP3 (Kyoto Conference) held Kyoto Protocol adopted
1999 January September	Issues the *Ricoh Group Environmental Report 1998* Ricoh announces results of its first environmental accounting.	1999 November	Ricoh wins the IEA Demand-Side Management Award of Excellence in the recently created Copier of the Future Division for its energy-saving technology.	1998	Eco Partnership Tokyo Conference held Law concerning the Promotion of Measures to Cope with Global Warming enacted
2000 January February March	Ricoh acquires Eco-Mark certification for 28 copier models. Ricoh's digital multifunctional copier, the imagio MF6550, acquires Type III Environmental Impact Disclosure from BVQI (Sweden). Holds the 1st Global Recycling Conference	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).	1999	Revised Energy Saving Law enforced PRTR Law enacted
2001 July December	Ricoh announces its participation in e-mission 55. imagio MF6550RC, an environmentally conscious digital copier, is marketed for rental use.	June December	Ricoh wins Grand Prize in the 10th Corporate Contribution to Society Awards organized by the Asahi Shimbun Foundation. Ricoh ranks first for the third year in a row in the 4th Corporate Environmental Management Level Survey organized by the *Nihon Keizai Shimbun*.	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 enacted Waste Management and Public Cleansing Law revised Law for the Promotion of Utilization of Recyclable Resources enacted Law Concerning the Promotion of the Procurement of Eco-Friendly Goods and Services by the State and Other Entities enacted
2002 January March April September November December	The first Ricoh Green Procurement Meeting is held. The Ricoh Group's main production sites in the world achieve a 100% resource recovery rate (Zero-Waste-to-Landfill). Ricoh announces its participation in the UN Global Compact. Ricoh system acquires Type III Eco-Label certification from the Japan Environmental Management Association for Industry (JEMAI). The Noise Testing Center of Ricoh Omori Plant acquires ISO/IEC17025 certification from the NIST (the U.S.). The Ricoh Group implements the first commendation of the Ricoh Sustainable Development Award.	2001 July December	Ricoh receives the highest eco-rating of AAA in the photographic and office equipment categories from Innovest Strategic Value Advisors, a U.S.A. investment research company, and ranked first among nominees. In a survey conducted by the Financial Times, 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.	2001	Ministry of the Environment (Japan) established The first Conference on the Creation of Wa no Kuni held Law for Recycling of Specified Kinds of Home Appliances enacted Law Concerning the Promotion of the Procurement of Eco-Friendly Goods and Services by the State and Other Entities enforced in full scale
		2002 May	Ricoh ranks first in the world in environmental and social/cultural aspects for office equipment and home appliances in the corporate responsibility rating conducted by Ökom GmbH (Germany) .	2002	The World Summit on Sustainable Development (Johannesburg Summit) held
2003 January June	Ricoh establishes the Corporate Social Responsibility (CSR) Division. Ricoh establishes environmental regulations for paper products.	2003 April May November	Ricoh receives the Grand Prize in the 12th Global Environment Awards. Ricoh wins the 2003 WEC Gold Medal. Ricoh receives the Minister for Economy, Trade and Industry Award in the 6th Green Purchasing Awards.	2003	The EU Directive on Waste Electrical and Electronic Equipment (WEEE) comes into effect. The EU Directive on the Restriction of Hazardous Substances in Electrical and Electronic Equipment (RoHS) comes into effect.
2004 January	Ricoh implements Ricoh Group Code of Conduct and Ricoh Group CSR Charter.			2004	Tenth Session of the Conference of the Parties (COP 10) to the UN Framework Convention on Climate Change
		2004 February	imagio Neo 752/602 series receives the Energy Conservation Center Chairman's Prize in the 14th Energy-Saving Awards.	2005	The Kyoto Protocol goes into force (February 16).

* For details, see Ricoh's web site. (http://www.ricoh.com/environment/global/index.html)

■ Fiscal 2004 (from April 2004 to March 2005)

	The Ricoh Group's Activities
2004 April	A briefing on the revision to Ricoh Group's green procurement policy and certification system of the chemical management system (CMS) is held.
April	All sales companies of the Ricoh Tohoku Group achieve Level 2 Zero-Waste-to-Landfill.
May	Ricoh and FoE Japan sign an agreement on the Ricoh-FoE Japan Project to Conserve Taiga, the Northern Limit Habitat of Tigers, which is being carried out in the Russian Far East.
June	Ricoh and JQA jointly implement a pilot program for the certification system for the information management of chemical substances contained in products.
June	Ricoh Group issues three interconnecting sustainability reports (*Environment Report, Corporate Social Responsibility Report* and *Annual Report*) for fiscal 2004 for the first time.
July	Ricoh Group holds the third parent-child nature school.
August	The 15th Ricoh Company Meetings for Environmental Volunteer Leaders is held.
August	The Tokyo office of Ricoh Elemex Corporation achieves Zero-Waste-to-Landfill.
September	The Technology Center (Aichi Prefecture) of Ricoh Elemex Corporation achieves Zero-Waste-to-Landfill.
September	The third Ricoh Forest Seminar is held. The number of Ricoh forest conservation leaders totals 38.
September	Ricoh acquires System Certification of the Eco Leaf environmental label in the digital camera business.
September	The Aficio2060 ec/2075 ec, a high-speed multifunctional digital copier equipped with the HYBRID QSU energy conservation technology, is introduced. The copier achieves the world's first 10-second recovery time from energy-saving mode.
October	The Ricoh Group Environmental Principle is revised.
October	Ricoh Ohmori Plant receives accreditation for its VOC testing laboratory for the first time as a manufacturer by the Federal Institute for Materials Research and Testing (BAM) in Germany.
November	The Ricoh Group holds the 17th Nature Seminar. The number of Ricoh environmental volunteers totals 277.
November	Ricoh Asia Pacific reports on the Ricoh Group's social contribution of environmental conservation at the General Meeting of the International Union for the Conservation of Nature and Natural Resources (IUCN) held in Bangkok, Thailand.
December	The Ricoh Group Participates in Eco Products 2004.
December	The imagio Neo 350RC/450RC series of environmentally conscious digital copiers is introduced.
2005 January	The 16th Ricoh Company Meeting for Environmental Volunteer Leaders is held.
February	The 11th Ricoh Group's Sustainability Environmental Conference is held.
February	The 4th Ricoh Nature Seminar Intermediate Course is held.
February	The imagio Neo C355/285 series of digital color multifunctional copiers, which significantly reduce environmental impact based on the EU's RoHS directive, is introduced.

	Society's Recognition of the Ricoh Group's Activities
2004 April	*Ricoh Group Sustainability Report 2003* receives the Consistent Performance Prize at the Seventh Green Reporting Awards for the third year in a row.
April	Ricoh Fukui Plant's fiscal 2003 environmental report wins the Prize for Site Reports at the Seventh Green Reporting Awards for the fourth year in a row.
June	Ricoh ranks 19th in Businessweek's Global 500 list of the world's top companies (ranks second among Japanese companies).
July	Ricoh placed 11th in the Nikkei Business CSR Best 100 Company Ranking in total assessment.
October	Tohoku Ricoh receives the 2004 Director's Prize for the plant with outstanding greening activities from the Tohoku Bureau of Economy, Trade and Industry.
October	Ricoh receives the 2004 Director-General Prize for resource-recirculating technologies and systems from the Industrial Science and Technology and the Environment Bureau of the Ministry of Economy, Trade and Industry for its recycling business involving used copiers.
October	Iwate Ricoh wins the Chairman's Prize of the Reduce, Reuse & Recycle Promotion Council.
October	Ricoh Electronics (U.S.A.) receives the Year of the Award of the Waste Reduction Awards Program (WRAP) from the California Integrated Waste Management Board.
November	Ricoh Corporation (U.S.A.) receives the 2004 Green Contractor Award.
December	Ricoh ranks first in the manufacturing division in Nihon Keizai Shimbun's 8th Corporate Environmental Management Level Survey for the fourth time.
December	The Ricoh Group's 2004 sustainability report (*Environmental Report, Corporate Social Responsibility Report, Annual Report*) given the Sustainability Report Excellence Award, Environmental Report Excellent Award, and Environmental Reporting Meister Award at the 8th Environmental Communication Awards.
December	Ricoh Fukui Plant's fiscal 2004 environmental report awarded the Environmental Report Excellence Award at the 8th Environmental Communication Awards.
2005 January	Ricoh selected as one of the World's Top 100 Sustainable Companies by the World Economic Forum (Davos Forum).
February	Ricoh given world's highest rating for corporate social responsibility in Germany's oekom research's Environmental Ranking in the category of IT/computers, peripherals, and other electronics.
February	Ricoh Gotemba Plant receives the Minister of Economy, Trade and Industry's Award (grand prize) in the electricity division for its outstanding energy conservation performance.
March	Ricoh Fukui Plant receives the Excellent Sustainable Management Award of the Third Japan Sustainable Management Award sponsored by Mie Prefecture.
March	Ricoh given AAA, the highest environmental rating, from the Tohmatsu Evaluation and Certification Organization.
Subsequent Events	
April	Ricoh receives the CRS Reporting Consistent Excellency Prize from Toyo Keizai Inc.

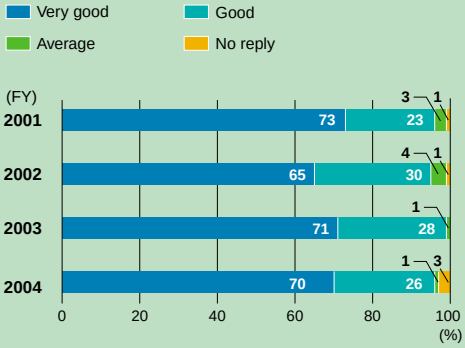
Responses to the Questionnaire for Ricoh Group Sustainability Report 2004

We appreciate customers responding to our questionnaire. We will use your valuable opinion to improve our activities and future reports.

Responses to Our Questionnaire

A total of 18,245 copies of the Japanese version report were distributed and 238 readers answered the questionnaire as of the end of April 2004. The main responses are as follows.

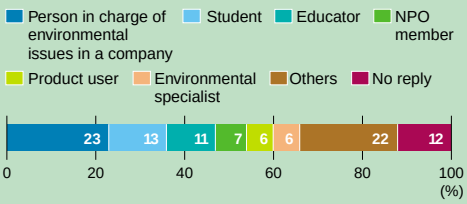
❶ How would you rank the Ricoh Group's environmental conservation activities that are described in the report?



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

1st	Environmental Accounting
2nd	Social Contribution of Environmental Conservation
3rd	Business Sites (Energy Conservation and Prevention of Global Warming)
4th	FOCUS (Maintenance and Quality Improvement of Zero-Waste-to-Landfill/Fukui Plant)
5th	Identifying Environmental Impact and Target Setting (Eco Balance)
6th	Products (Resource Conservation and Recycling)
7th	Pursuing the Ideal Society (Three P's Balance™)

❸ In what capacity did you read this report?



Some of the opinions from the Ricoh Group Sustainability Report 2004 and Improvements in the 2005 Report

○ Companies tend to be uncertain about the extent to which they may disclose information on environmental accounting. In your report, there are detailed reviews and explanations of items, which is quite unique. We feel that you really want us to read the environmental accounting section, and I think that is great.

○ I would like to know how you will use environmental accounting in evaluating sustainable environmental management and decision making.

▶ An example is given to illustrate how we used environmental accounting in promoting modal shifts. See page 53.

○ Your report is very readable and gives us a clear picture of your specific commitments to the environment.

○ I would like to read comments by customers who purchased your products because I would like to know what advantages they gained by using them.

▶ The report had a story about a customer who successfully reduced paper consumption by introducing Ricoh integrated print management system and another one about the customer who purchased recycled Ricoh products.

See pages 22 and 24.

○ Your report, which introduces a variety of concrete examples, is easy to understand, but readers will find stories of staff who were actually engaged in projects much more interesting.

▶ In the FOCUS section, examples of unique activities are introduced in articles using a Q&A format. Also, interviews with key people and employees who take initiatives in sustainable environmental management in each division of the Ricoh Group are introduced.

See pages 25, 35, 70 and 72.

○ Because of the size of the report, although it provides extensive and detailed information, readers tend to look at only what they are interested in. If there is a page that outlines the whole content, they can easily find that there are many other interesting reports.

▶ In the beginning of the report, apart from the table of contents, there is a section that introduces the structure of the report and the overall picture of sustainable environmental management.

See pages 5 through 6.

Index by Term

Third Party Review

The Ricoh Group receives a third-party review of its environmental performance data and collection/aggregation system (Sustainable Environmental Management Information System). The related information is provided to stakeholders in the sustainability report (Environment). Furthermore, the results of this review are used to improve and advance sustainable environmental management. In fiscal 2004, the concept of system verification was introduced. System verification checks for consistency between data and whether the system effectively functions to collect/aggregate highly reliable data. The Ricoh Group continues to promote sustainable environmental management by using third-party reviews more effectively.

Ricoh Group
Sustainability Report
Verification Report
To: Ricoh Co., Ltd.
President and Chief Operating Officer
Masamitsu Sakurai

20th May 2005

BVQI Japan Co., Ltd.
Managing Director
Shoichiro Noborl

Objective of Verification

BVQI Japan Co., Ltd. (BVQI) has verified the credibility of data effected by Ricoh Co., Ltd. (Ricoh) to the degree appropriate to be included in the Ricoh Group Sustainability Report (Report) 2005 issued under the responsibility of Ricoh's management.

6 Sites Audited

Head Office, Corporate Environment Division	Administration
Ricoh Hatano Plant	Manufacture of printed circuit boards and electronic components
Ricoh Yashiro Plant	Manufacture of electronic devices
Ricoh Omori Office	Research and development
Ricoh Microelectronics Co., Ltd.	Manufacture of printed circuit boards
Ricoh Logistics System Co., Ltd.	Transportation, storage management, packaging, customs clearance, import and export

Verification Methodology

BVQI has verified:

Head Office

1. The credibility of data collection and aggregation system and the adequacy of its operation
2. The accuracy of data collected for the 1st half of fiscal year 2004 and the consistency of data between the head office and sites

Sites

1. The adequacy of data collection and aggregation method and the method of reporting to the head office
2. The quality of data collected and the effectiveness of internal verification
3. The effectiveness of data monitoring with the environment management system

Opinions

BVQI reports as follows:

1. The data collection and aggregation system is credible and operated adequately. All the data verified is credible to the degree appropriate to be included in the report.
2. The environmental management information system, which is a system to collect and aggregate data within the group comprehensively, has expanded in scope of operation as compared to last year. Moreover, overall credibility of data has been improved through wide usage of IT and improved capability of designated person inputting data.

Reference View (whole statement)

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

1. Good Points

- The environmental management information system is credible, as the conversion factor used in the system is managed collectively by the head office, not on a site basis.
- The product recycling rate is accurate, because it is calculated component by component.
- The environmental report system of Ricoh Logistics System is a highly credible system that is capable of collecting and aggregating data accurately across the country.

2. Issues

- The environmental management information system is expected to be deployed further even in some non-manufacturing group companies. The data input system is expected to be improved further. With this system, data input mistakes are avoided and/or detected if any.

■ List of Figures Verified by BVQI

Page	Number	Title	Verification No.
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	❷	<Japan> Changes in Energy Consumption—Color Copiers and Multifunctional Copiers	(3)
	❸	<Japan> Changes in Energy Consumption—Black-and-White and Color Printers	(4)
	❹	<Japan> Changes in Energy Consumption—Facsimiles (Including Multifunctional Copiers)	(5)
	❺	<Global> Reduction in CO_2 Emissions through the Use of QSU Technology	(6)
23	❶	<Global> Resource Recovery Rate—Copiers	(7)
	❷	<Global> Resource Recovery Rate—Toner Cartridges	(8)
	❸	<Global> Collection Results—Number of Copiers Collected	(9)
	❹	<Global> Collection Results—Amount of Toner Cartridges Collected	(10)
24	❺	LCA Comparison Between a New Machine and Recycled Copier (CO_2 Emissions)	(11)
27	❶	<Global> Changes in the Amount of Chemical Substances Used in One Product (Compared with those in the figures for fiscal 2000)	(12)
	❷	<Global> Changes in the Level of Noise Emitted by Color Copiers	(13)
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33	❶	Scenario for Reductions in Total CO_2 Emissions for Ricoh Group (production) in Japan up to Fiscal 2010	(15)
34	❷	<Japan> Energy Consumption (CO_2 conversion and calories)—The Ricoh Group (production)	(16)
	❸	<Japan> Energy Consumption (CO_2 conversion and calories)—The Ricoh Group (nonproduction)	(17)
	❹	<Japan> Breakdown of Major Energy Consumption —The Ricoh Group (production)	(18)
	❺	<Outside Japan> Energy Consumption (CO_2 conversion and Calories)—The Ricoh Group (production)	(19)
	❻	<The Entire Ricoh Group> Greenhouse Gas Emissions other than CO_2 (CO_2 conversion)—The Ricoh Group (Production)	(20)
38	❶	NOx and SOx Emissions in Transportation by Ricoh Logistics System	(21)
39	❶	<The Entire Ricoh Group> Total Amount of Waste Generated—The Ricoh Group (production)	(22)
	❷	<The Entire Ricoh Group> Volume of Industrial Water Used—The Ricoh Group (production)	(23)
40	❸	<Japan> Resource Recovery Rate of Waste/Total Amount of Waste Generated/Total Amount of Waste Discharged/Amount of Waste Finally Disposed of—The Ricoh Group (production)	(24)
	❹	<Japan> Resource Recovery Rate of Waste/Total Amount of Waste Generated/Total Amount of Waste Discharged/Amount of Waste Finally Disposed of—The Ricoh Group (nonproduction)	(25)
	❺	<Outside Japan> Resource Recovery Rate of Waste/Total Amount of Waste Generated/Total Amount of Waste Discharged/Amount of Waste Finally Disposed of—The Ricoh Group (production)	(26)
43	❶	<The Entire Ricoh Group> Amount of Environmentally Sensitive Substances Used and Emitted in Fiscal 2004 —The Ricoh Group (production)	(27)
	❷	<The Entire Ricoh Group> Changes in the Amount Used and Discharged of Ricoh Target Substances for Reduction—The Ricoh Group (production)	(28)
	❸	<The Entire Ricoh Group> Changes in the Amount of NOx, SOx and BOD—The Ricoh Group (production)	(29)
46	❶	Survey Results of Underground Water Pollution and Purification Efforts at Ricoh Production Sites and the Ricoh Group's Manufacturing Subsidiaries in Japan (As of March 2005)	(30)
	❷	Survey Results of Underground Water Pollution and Purification Efforts at the Ricoh Group's Manufacturing Subsidiaries Outside Japan (As of March 2005)	(31)
51	—	Eco Balance of Overall Business Activities (Fiscal 2004)	(32)
55	—	Ricoh Group's Corporate Environmental Accounting in fiscal 2004	(33)
77	—	Business Site Data	(34)

- The total BOD emission is aggregated from the data monitored at each site, but what to be measured was not clearly defined by the Ricoh group as a whole.
- As to environmental accounting, the rule on taxation was not consistent among the sites; some included tax and some excluded tax.
- There was large discrepancy on the amount of waste collected between the amount measured by Ricoh and waste collectors, because waste collection was in some cases measured per department as a part of a reduction activity. Further effort should be taken to minimize the discrepancy.

3. Greenhouse Gas (GHG) Emissions

- With enforcement of the Kyoto Protocol, it is preferable to publicize GHG emissions based on the international common standard for calculating GHG emissions to ensure credibility and transparency.
- Verifier has observed that some conversion factor was inconsistent or not up-to-date

We Seek Your Opinion

The Ricoh Group, as a global citizen, engages in environmental conservation activities in which the Ricoh Group pursues closer communication with society. Although we have made our best efforts to summarize the Ricoh Group's sustainable environmental management activities for readers' easy understanding, we know there are still many points that need further improvement. We would like to reflect your opinions in our future approaches to sustainable management and in preparing next year's report. We hope you will spare us a few more minutes to fill in the attached questionnaire and send it to the Corporate Environment Division, Ricoh Company, Ltd. by facsimile.

Corporate Environment Division, Ricoh Company, Ltd.

Fax No.: +81-3-5411-4410

1-15-5 Minami Aoyama, Minato-ku, Tokyo 107-8544, Japan

RICOH GROUP SUSTAINABILITY REPORT (ENVIRONMENT) **2005** ***Questionnaire***

Please send questionnaire to the Environmental Communication Office, Corporate Environment Division, Ricoh Company, Ltd.
Fax No.: +81-3-5411-4410

We properly manage your private information, and will not disclose/provide it to third parties, or use it except for sending our next report.
We may use your valuable opinions and comments for our next report.

Q1. Did you have prior knowledge about Ricoh's environmental conservation activities?

☐ No, I knew nothing about Ricoh's environmental conservation activities.
☐ Sort of. I knew nothing of Ricoh's positive environmental conservation activities.
☐ Yes, I knew of Ricoh's positive environmental conservation activities.

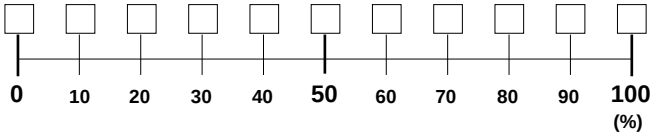
Q2. For what purpose did you read this report?

(Example: To get information to promote our environmental conservation activities)

Purpose

Q3. How would you rate this report?

A. How much of this report did you read (in percent)?



B. Which section(s) of this report interested you most?

Page(s) ( )

Name of article(s) ( )

Comments

C. Did you find that the report does not provide enough information or misses any information?

Comments

D. How would you evaluate our environmental conservation activities?

☐ Excellent ☐ Good ☐ Average
☐ Not very good ☐ Poor

Comments

E. If you have any comments regarding this report or our environmental conservation activities, please feel free to write them down.

Comments

Q4. Which of the following best describes you?

☐ Ricoh product user
☐ Corporate procurement staff
☐ Corporate environmental department employee
☐ Corporate public relations/advertising staff
☐ Ricoh shareholder/investor
☐ Resident of a community where a Ricoh facility is located
☐ Supplier
☐ Environmental NGO/NPO
☐ Financial institution
☐ Student
☐ Educator
☐ Environmental specialist
☐ Media representative
☐ Design/production/printing industry
☐ Government/public administration
☐ Other ( )

Q5. Did you read the Ricoh Group Sustainability Report (Environment) 2004?

☐ Yes ☐ No

→ Did you complete the questionnaire that was included?

☐ Yes ☐ No

■ Would you like to receive our next report? ☐ Yes ☐ No

◎ If you would like to receive our next report, please fill in the following information.

Name: Address (Work/Home):

Occupation:

Name of organization to which you belong:

Department/job title:

Our earth, Our tomorrow

Please send all comments and inquires regarding this report to:

● The Americas

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http://www.ricoh.com/environment/index.html

● Ricoh Group Sustainability Report (Environment) 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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