RICOH
Image Communication

RICOH GROUP SUSTAINABILITY REPORT 2002

CONTENTS

Editorial Policy

This report is aimed to clearly explain the ideals, goals, activities, and performance of the Ricoh Group to all readers. In 2001, we established the Principle of the Environmental Report (see page 83), and to help Japanese readers to understand Ricoh Group activities from a broader perspective, we renamed our Japanese report "Environmental Management Report" (direct translation of Kankyou-Keiei-Houkokusho) from the "Social/Environmental Report" (direct translation of Shakai-Kankyou-Houkokusho) of last year. However, the English title is the same as last year i.e. "Ricoh Group Sustainability Report."

◎ **Target readers**
This report is prepared for all readers, including environmental specialists, users of Ricoh products, suppliers, local communities, employees, nonprofit organizations (NPO's), students, shareholders, investors, and people in charge of environmental issues for their companies.

◎ **Disclosing information worldwide**
Environmental activities should be covered globally; however, it is also very important to take action closely connected with each country and community in which the Ricoh Group operates for tackling the environmental issues. This year's report features activities in five regions where the Ricoh Group is operating its business. This report also focuses on green-marketing activities, which are rising spontaneously in Japan, Europe, and the Americas; and highlights green-procurement and Zero-Waste-to-Landfill activities in China and Taiwan, where the awareness of environmental conservation is increasing.

An English version has been published for global distribution since fiscal 1998.

◎ **Disclosing financial information**
To successfully carry out environmental management, the Ricoh Group endeavors to improve its management system by looking at all managerial aspects from an environment-conscious point of view. To identify the effects and economic benefits of environmental conservation, the Group explains its activities and discloses information in segment environmental accounting.

◎ **Disclosing information on social responsibilities**
The Ricoh Group, as a global citizen, runs its business based on the concept that the corporation is responsible for contributing to society. Sustainable Management comprises a number of activities for assuming social responsibilities including bringing-up capable persons. This report discloses information on our social responsibility activities for wining public confidence all over the world.

◎ **Interactive communication**
In order to promote environmental conservation activities throughout society, we willingly disclose information that can be useful to others engaged in environmental conservation because we recognize the importance of encouraging the whole society to strive to reduce negative environmental impact. To improve the quality of this report and the Group's activities, a questionnaire has been included in this report. We would appreciate it if you would give your honest opinion.

■ Scope of This Report

This report describes the sustainable management activities of the Ricoh Group in fiscal year 2001 (April 1, 2001 to March 31, 2002). The term "Ricoh" refers to production and nonproduction sites of Ricoh Co., Ltd.

The term "Ricoh Group" refers to Ricoh's operations all over the world.

Environmental impact and environmental accounting data: fiscal 2001 data
Descriptions in articles and chronological tables: fiscal 2001 data

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

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

The environmental impact and environmental accounting data is taken from the Ricoh Group's major business sites in five (5) regions—Japan, the Americas, Europe, China and Taiwan, and the Asia-Pacific region—and, as such, may differ from the Ricoh Group data presented elsewhere in this report, e.g., in the organization profile and global network.

● Scope of Collection of Environmental Impact and Environmental Accounting Data

Japan

Ricoh production sites:
Atsugi Plant, Hatano Plant, Numazu Plant, Gotemba Plant, Fukui Plant, Ikeda Plant, Yashiro Plant

Ricoh nonproduction sites:
Aoyama Office, Omori Office, Omori 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.; Part Component System Co., Ltd.;
51 sales companies, and NBS Ricoh Co., Ltd.

* For environmental accounting data only

The Americas

Manufacturing companies:
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. (France)

Nonmanufacturing companies:
Ricoh Europe B.V. (the Netherlands)
and five sales companies in the region

China and Taiwan

Manufacturing companies:
Ricoh Asia Industry (Shenzhen) Ltd. (China)
Taiwan Ricoh Co., Ltd. (Taiwan)

Nonmanufacturing companies:
Ricoh Hong Kong Ltd. (Hong Kong)

Asia-Pacific Region

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

● Expansion of Data Covered

This report covers the environmental impact and environmental accounting data from all Ricoh business sites and affiliates that have established their own environmental management systems. In fiscal 2001, Ricoh sales companies in Japan, the Americas, Europe, China and Taiwan, and the Asia-Pacific region partly established their own environmental management systems, so the coverage of data was expanded.

● Past and Future Reports

The Ricoh Group has continued publishing annual environmental reports since 1997, which covered for fiscal 1996. The *2003 Report* will be issued in the summer of 2003.

● Special Remarks Relating to Activities during the Reporting Period

The Ricoh Group has produced a medium-term management plan that covers fiscal 2002 through fiscal 2004 as well as a newly established an environmental action plan.

● How to Obtain Ricoh's Corporate Information:

Environmental conservation:
http://www.ricoh.co.jp/ecology/e-/
Social contribution (Japanese language only):
http://www.ricoh.co.jp/kouken/
IR (for shareholders and investors):
http://www.ricoh.co.jp/IR/e/

As a global citizen, the Ricoh Group aims at pursuing sustainable management and continues its environmental conservation practices.

The rich resources of our planet Earth have given birth to many forms of life and have supported the wide-ranging and ambitious activities of mankind. Nevertheless, recent activities have exceeded this life-sustaining ability of the Earth. This poses a threat not only to our coexistence with other forms of life on this planet but also to the future of the human race itself. The environment is the most crucial issue that the whole mankind must tackle. In order to bequeath a rich, fertile earth to future generations, each of us must reduce the environmental impact caused by our activities. For that to happen globally, governments, companies, citizen groups, and even individuals in all countries and regions must be aware of the environmental impact that is affecting the entire planet and actively seek to reduce it. Mutual consultation and cooperation are also critical to further advance this cause.

For the Ricoh Group, as a global citizen, safeguarding this precious planet is one of our corporate missions. Looking at all aspects of management from an environment-conscious point of view, we always endeavor to minimize the environmental impact produced by the Group's business activities by being closer to the limit that the natural environment permits us. Environmental conservation activities should be neither temporary, regulated by law, nor conducted for personal gain. With a firm resolution to incorporate environmental conservation into its corporate mission, the Ricoh Group is focusing on consistency in its activities. To continue corporate activities, it is necessary to profit from environmental conservation activities and not merely engage in them. The Ricoh Group's fundamental idea of sustainable management is to continuously engage in environmental conservation activities that are at the same time profitable.

To survive in the new century as a respected corporation in the global community, a company needs to excel in environment-conscious management and social responsibility and obtain the support of society. Recognizing the fact that companies should contribute to society as members of that society, the Ricoh Group promotes sustainable management from a global point of view, making efforts to revitalize the economy of local communities and nurturing its personnel. The Ricoh Group further promotes activities that restrict the environmental impact of its business activities so that the environment can recover. Moreover, the Group earnestly engages in social contribution activities, such as forest ecosystem conservation, to improve the self-recovery capability of the natural environment.

The Ricoh Group will disclose information about its activities globally to discuss environmental issues, which are now cross-border issues, with as many people from as many countries as possible. Our 2002 report details results of our global environmental conservation activities in fiscal 2001. We hope that this report will help as many of you readers as possible to discover the extent of the Ricoh Group's concepts for environmental conservation and environmental measures. We welcome your honest opinion to further improve our activities in terms of both quality and effectiveness.

Masamitsu Sakurai

President and Chief Operating Officer
Ricoh Co., Ltd.

桜井正光

Profile of Organization/Economic Achievements

Ricoh Co., Ltd., was established on February 6, 1936. The Ricoh Group consists of 376 subsidiaries, and 28 affiliates*. The Ricoh Group engages in such global-scale activities as the development, production, marketing, after-sales service, and recycling of office equipment, including copiers and printers, information equipment, optical devices, and other electronic equipment, in five regions around the world (Japan, the Americas, Europe, China and Taiwan, and the Asia-Pacific region). The Group has more than 74,000 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 is pursuant to U.S. Generally Accepted Accounting Principles (U.S. GAAP), which slightly differs from that found in Japan GAAP.

Ricoh Group Brands

The Ricoh Group markets products under the Ricoh, Savin, Nashuatec, Rex-Rotary, Gestetner, and Lanier brand names.

Brand logos

RICOH
savin
nashuatec
Rex-Rotary
Gestetner
LANIER

Major Product Lines of the Ricoh Group

◎**Copiers:**
Analog copiers, digital copiers, color copiers, multifunctional printers (copiers, facsimiles, and multifunctional copiers equipped with the printing function), digital duplicators, related supplies and maintenance services, others

◎**Information equipment:**
Facsimiles; laser printers; PCs, servers, network equipment, network software, application software, optical-disk products; related supplies; others

◎**Optical equipment:**
Digital cameras, analog cameras, lenses, others

◎**Others:**
Semiconductors, printed circuit (PC) boards, others

Aficio 1022/1027
(imagio* Neo 220/270)

Aficio AP 3800C
(IPSiO* Color 8150)

* 'imagio' and 'IPSiO' are the brand names used in Japan.

Business Perspective

The Ricoh Group delivers products and systems that are ahead of the needs of the times and focuses on customer satisfaction. One example is the development of the Ricoh Document Highway Platform, a user-friendly platform with an open architecture that enables customers to communicate with each other using a variety of application software and equipment in diverse network environments. Based on this platform, the Ricoh Group has developed the Aficio series digital multifunctional copier, the Aficio series laser printer, and documentation management software to promote its document highway scheme. Further efforts include an earnest proposal[1] to satisfy the globally increasing need for green procurement by promoting energy saving products and recycling activities. The Group is planning to start a business that supports environmental management[2] and draws the attention of customers by offering systems that have been established through environmental conservation activities, i.e., a recycling system. Thus, the Ricoh Group aims at being a company that has higher customer satisfaction and provides effective solutions for not only documentation but also environmental conservation.

1. See page 41.
2. See page 42.

Fiscal 2001 Performance and External Evaluation Results

In fiscal 2001, the Ricoh Group had the largest share of the digital office equipment market in the United States[1] for the second year in a row and the digital and analog office-use black-and-white copier market in Europe[2] for the fifth year in a row. In Japan, the Group was ranked among the top in an independent customer satisfaction survey for seven years in a row[3] in the copier division. In the survey, which was conducted by the U.K. business newspaper the *Financial Times*, Ricoh was voted the seventh best global company in terms of sustainable management. Thus, the Group received an outstanding evaluation[4] from around the world.

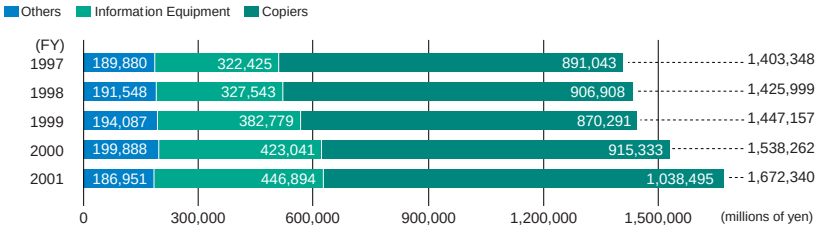
1. According to a survey conducted by Dataquest, which collected data for a number of products marketed under Ricoh, Savin, Gestetner, and Lanier brand names (Excluding the segment for up to 10 cpm copier) [Gartner Dataquest, February, 2002. GJ02276]
2. According to a survey conducted by Infosource S.A., which collected data for a number of products marketed by Ricoh under the Savin, Gestetner, Nashuatec, Rex-Rotary, and Lanier brand names as well as OEM products; looking at performance by country, the Ricoh Group had the largest share in 17 countries, including the U.K., France, and Italy.
3. According to a survey conducted by J.D. Power Asia Pacific Inc.
4. See page 60.

Economic Performance and Future Perspective

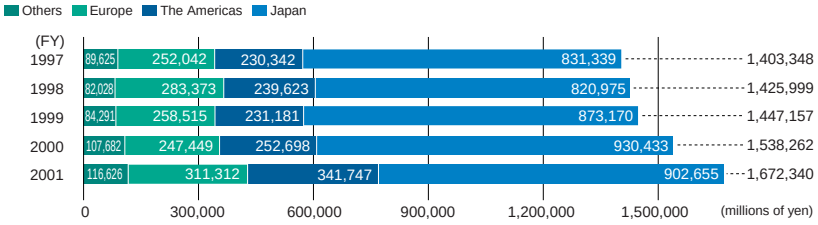
In fiscal 2001, the Ricoh Group recorded sales of ¥1,672.3 billion, an 8.7% increase from that in the previous year. This was the eighth fiscal year in a row that the Group increased its sales (the seventh largest increase in a row). Net income rose to ¥61.6 billion, up 15.8% from the previous year, the 10th fiscal year in a row that it showed an increase (eighth in a row with the largest net income growth). For the next fiscal year, despite such uncertainties as market and currency exchange fluctuations, the Group is aiming at another increase in revenue, for the ninth fiscal year in a row, and income, for the 11th in a row.

* See the IR section of Ricoh's Web site (http://www.ricoh.co.jp/IR/e) for details.

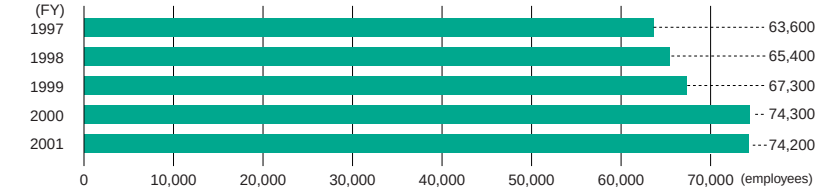
The Ricoh Group's Sales Classified by Business*



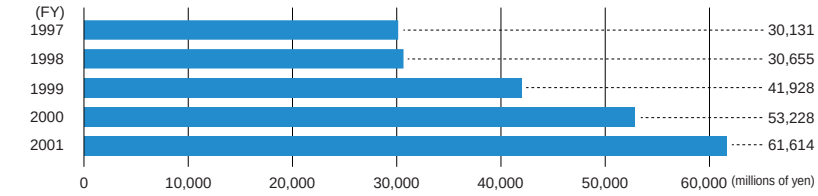
The Ricoh Group's Sales Classified by Region*



The Number of the Ricoh Group's Employees*

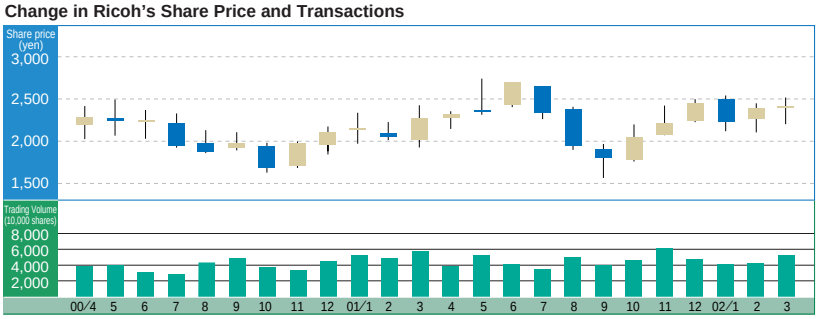


The Ricoh Group's Net Income*



* 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.

Change in Ricoh's Share Price and Transactions

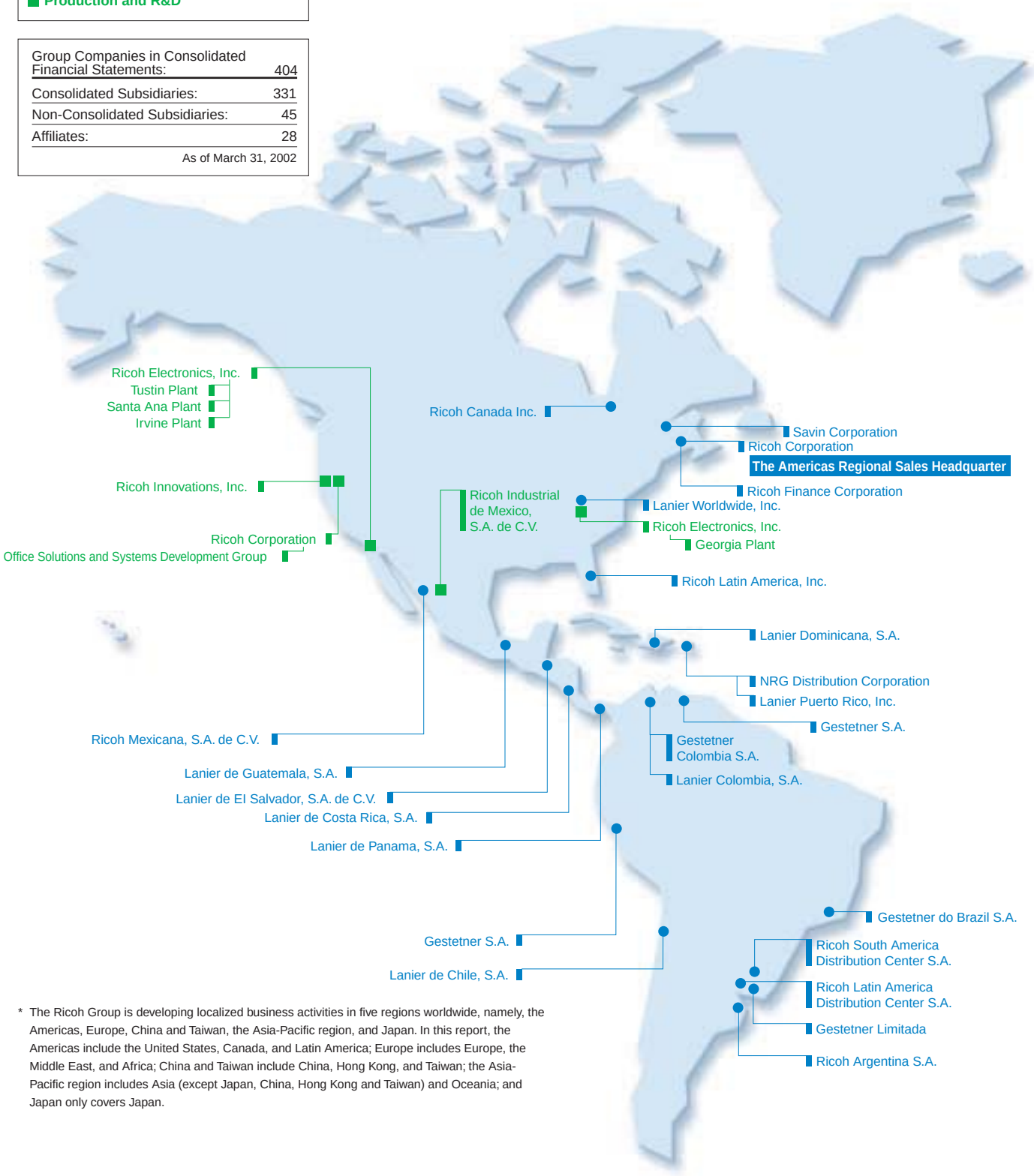


The Ricoh Group's Global Network

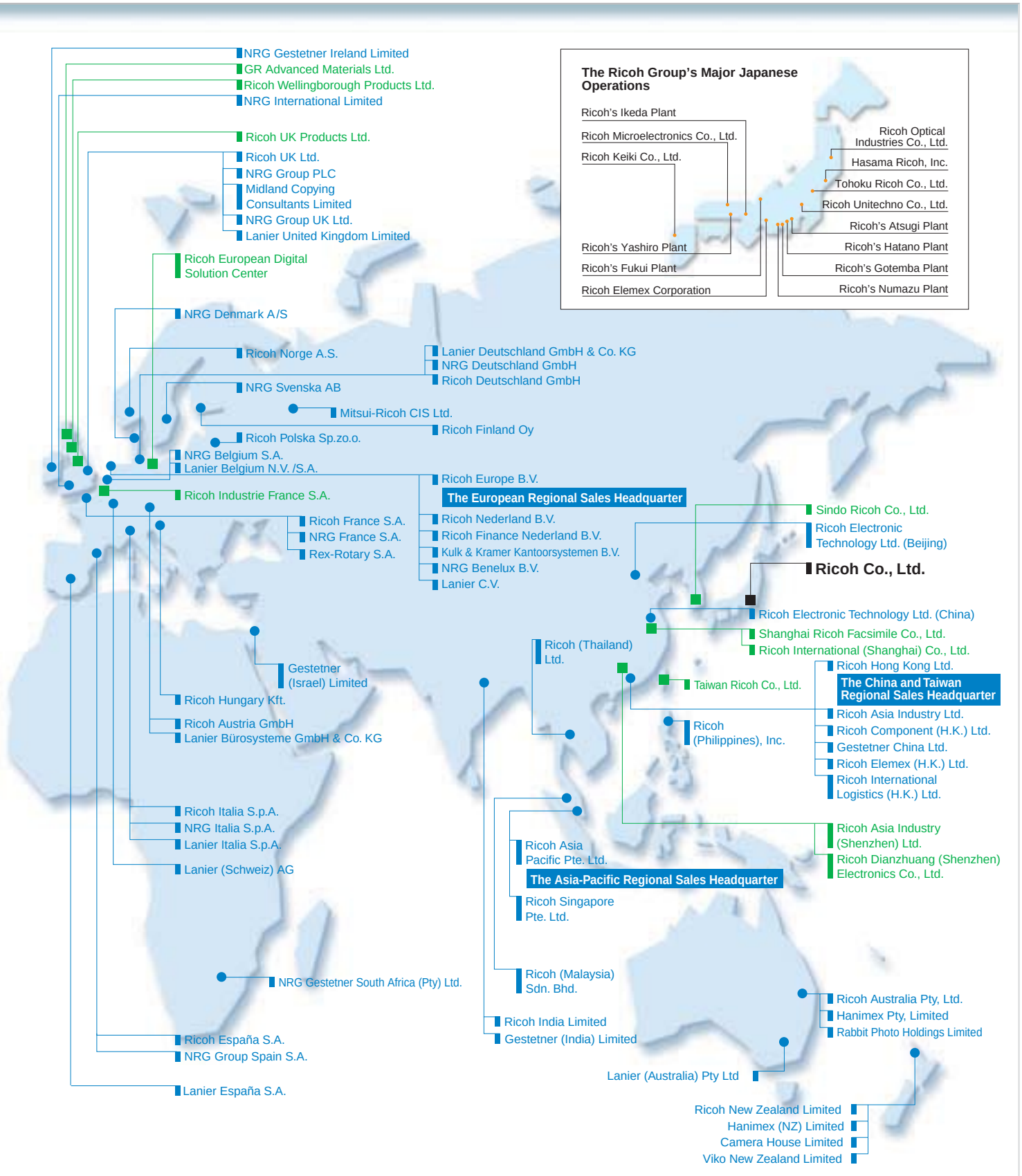
● Marketing and general operations
■ Production and R&D

Group Companies in Consolidated Financial Statements:	404
Consolidated Subsidiaries:	331
Non-Consolidated Subsidiaries:	45
Affiliates:	28

As of March 31, 2002



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


NRG Gestetner Ireland Limited
GR Advanced Materials Ltd.
Ricoh Wellingborough Products Ltd.
NRG International Limited
Ricoh UK Products Ltd.
Ricoh UK Ltd.
NRG Group PLC
Midland Copying Consultants Limited
NRG Group UK Ltd.
Lanier United Kingdom Limited
Ricoh European Digital Solution Center
NRG Denmark A/S
Ricoh Norge A.S.
Lanier Deutschland GmbH & Co. KG
NRG Deutschland GmbH
Ricoh Deutschland GmbH
NRG Svenska AB
Mitsui-Ricoh CIS Ltd.
Ricoh Finland Oy
Ricoh Polska Sp.zo.o.
NRG Belgium S.A.
Lanier Belgium N.V. /S.A.
Ricoh Industrie France S.A.
Ricoh Europe B.V.
The European Regional Sales Headquarter
Ricoh France S.A.
NRG France S.A.
Rex-Rotary S.A.
Ricoh Nederland B.V.
Ricoh Finance Nederland B.V.
Kulk & Kramer Kantoorsystemen B.V.
NRG Benelux B.V.
Lanier C.V.
Sindo Ricoh Co., Ltd.
Ricoh Electronic Technology Ltd. (Beijing)
Ricoh Co., Ltd.
Ricoh Electronic Technology Ltd. (China)
Shanghai Ricoh Facsimile Co., Ltd.
Ricoh International (Shanghai) Co., Ltd.
Ricoh Hong Kong Ltd.
The China and Taiwan Regional Sales Headquarter
Ricoh Asia Industry Ltd.
Ricoh Component (H.K.) Ltd.
Gestetner China Ltd.
Ricoh Elemex (H.K.) Ltd.
Ricoh International Logistics (H.K.) Ltd.
Ricoh (Thailand) Ltd.
Taiwan Ricoh Co., Ltd.
Ricoh (Philippines), Inc.
Gestetner (Israel) Limited
Ricoh Hungary Kft.
Ricoh Austria GmbH
Lanier Bürosysteme GmbH & Co. KG
Ricoh Italia S.p.A.
NRG Italia S.p.A.
Lanier Italia S.p.A.
Lanier (Schweiz) AG
Ricoh Asia Industry (Shenzhen) Ltd.
Ricoh Dianzhuang (Shenzhen) Electronics Co., Ltd.
Ricoh Asia Pacific Pte. Ltd.
The Asia-Pacific Regional Sales Headquarter
Ricoh Singapore Pte. Ltd.
NRG Gestetner South Africa (Pty) Ltd.
Ricoh (Malaysia) Sdn. Bhd.
Ricoh India Limited
Gestetner (India) Limited
Ricoh Australia Pty, Ltd.
Hanimex Pty, Limited
Rabbit Photo Holdings Limited
Lanier (Australia) Pty Ltd
Ricoh New Zealand Limited
Hanimex (NZ) Limited
Camera House Limited
Viko New Zealand Limited
Ricoh España S.A.
NRG Group Spain S.A.
Lanier España S.A.
The Ricoh Group's Major Japanese Operations
Ricoh's Ikeda Plant
Ricoh Microelectronics Co., Ltd.
Ricoh Keiki Co., Ltd.
Ricoh Optical Industries Co., Ltd.
Hasama Ricoh, Inc.
Tohoku Ricoh Co., Ltd.
Ricoh Unitechno Co., Ltd.
Ricoh's Atsugi Plant
Ricoh's Hatano Plant
Ricoh's Gotemba Plant
Ricoh's Numazu Plant
Ricoh's Yashiro Plant
Ricoh's Fukui Plant
Ricoh Elemex Corporation

Corporate Philosophy/Management Philosophy

The driving force behind Ricoh's business development is its corporate philosophy, called "The Spirit of Three Loves," and a management philosophy based on that corporate philosophy. Since its establishment in 1936, Ricoh has endeavored to establish new markets by constantly creating new value in its products and services that meet customer needs. Ricoh's achievements in the areas of copiers and facsimiles are good examples of this. In the early stages, copiers and facsimiles were expensive and oriented toward limited markets and/or usage. However, thanks to Ricoh's corporate mission, which includes considering the customer's requirement in technological innovation, copiers and facsimiles are now popular all over the world, effectively expanding this market's potential. Such a corporate attitude still prevails even in this digital information and network era, in which we are working hard for our sustainable management.

Corporate Philosophy

– The Spirit of Three Loves –

Love your neighbor
Love your country
Love your work

l Corporate Philosophy

Kiyoshi Ichimura, Ricoh's founder, explained the Company's corporate philosophy as follows:

My motto in life is "love your neighbor, love your country, and love your work." I believe that a person's worth depends on the depth and breadth of the love that he/she feels. We have an innate love of ourselves, as all animals do, in the name of selfpreservation. Everyone at least loves himself/herself. As time passes, however, this feeling of love grows and expands to include parents, siblings, spouses, and children and, later, goes on to encompass neighbors, one's country and ethnic group, and, finally, all the people of the world. At this point, such people return the same amount of love or more to all people, plants, and animals. Therefore, I am convinced that our true worth depends on how much love we give and how far that love extends.

"The Spirit of Three Loves" is the foundation of Ricoh's approach to environmental conservation. All global citizens should carry out their mission and responsibilities by dealing with environmental conservation issues. However, these issues cannot be resolved by simply thinking about environmental laws and regulations, consumer interests, and the achievement of competitors. Ricoh, in developing its business on a global scale, recognizes the importance of becoming a leader in environmental conservation.

Management Philosophy

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

l Management Philosophy

Ricoh's management philosophy was formally introduced in 1986 to establish and nurture the corporate culture and system so that survival in a time filled with increasing change, information-oriented societies, diverse values and more intense competition can be ensured.

Our management philosophy is based on our corpo-rate philosophy and explicitly states our purpose, goal, and principles.

Ricoh General Principles on the Environment

Basic Policy

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

Action Guideline

1. Not only do we comply with all domestic and overseas environmental regulations, but we also set our own targets to reduce the negative environmental impact of our business in consideration of social expectations. We also endeavor to attain our targets.

2. We strive to promote technological innovations that help reduce negative environment impact while maintaining and improving our environmental conservation systems.

3. In the development, design, and operation of factory facilities, we always consider their impact on the environment, and we strive to prevent pollution, to utilize energy and resources effectively, and to reduce and dispose of waste in a responsible manner.

4. At every stage, from planning, development, design, procurement and production to sales, logistics, use, recycling, and disposal, we offer products and services that have minimum environmental impact and give maximum consideration to safety.

5. Through environmental education, we strive to raise the awareness of all our employees in order to develop a social viewpoint that enables them to conduct environmental activities on their own.

6. In every country and region where we conduct business, we maintain close ties with the local community and contribute to society by publicizing our activities and assisting in environmental conservation activities.

Established February 1992
Revised April 1998

| Ricoh General Principles on the Environment

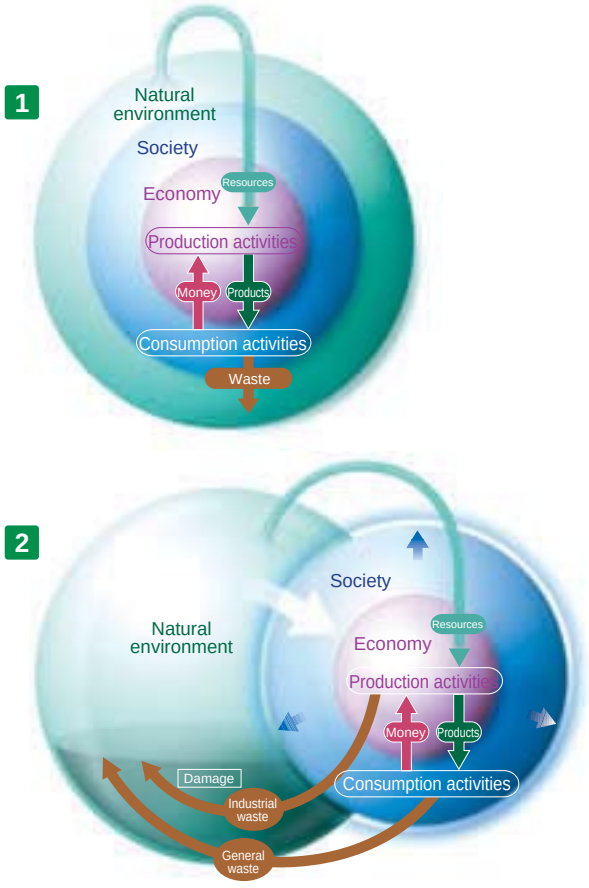
Ricoh introduced its Ricoh General Principles on the Environment, which are based on its management philosophy, in 1992 and revised them in 1998. These principles, which are mentioned in Ricoh's sustainability reports and on its Web sites, are regarded as a commitment to the Ricoh Group and to society as a whole.

Logical Necessity of Environmental Conservation (Three P's Balance™)

Companies are requested by society to reduce their environmental impact worldwide and to promote welfare of the global society.

The environmental impact of the economic activities in the past was small enough for the natural environment to recover unaided. However, environmental impact has grown rapidly and continuously since the Industrial Revolution, and there is an assumption that we will need an area the size of three earths by 2050. Companies hold the key to restoring the global environment. The reason why companies should address environmental conservation more seriously becomes clear if we consider how the three Ps (planet, people, and profit) of environmental, social, and economic activities have changed as time passed.

Three P's Balance™ Representing the Necessity of Environmental Conservation



1 Environmental impact was smaller before the Industrial Revolution.

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

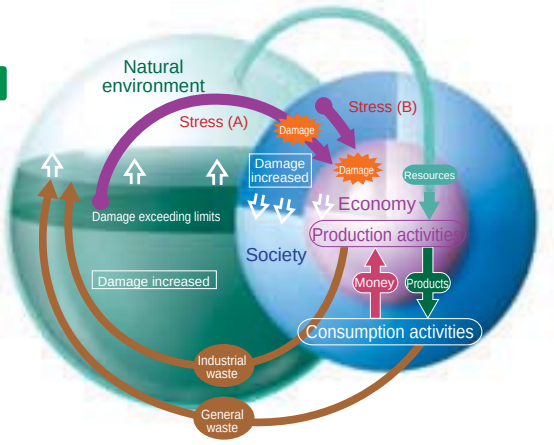
2 After the Industrial Revolution, damage to the natural environment increased.

The Industrial Revolution, which began in England, quickly spread throughout the rest of the world and drastically increased the damage caused by society to the natural environment. As shown in Figure 2, people began acting as if they were not a part of the natural environment. To those who forgot that they were a part of the natural environment, the natural environment was like a faraway farm or unlimited junkyard. People began using significant amounts of resources, engaging in mass production, and dumping huge amounts of waste. Back then, industrialization was the symbol of a rich society. Pollution ruined the natural environment of many places around the world, but the problem was handled locally not globally.

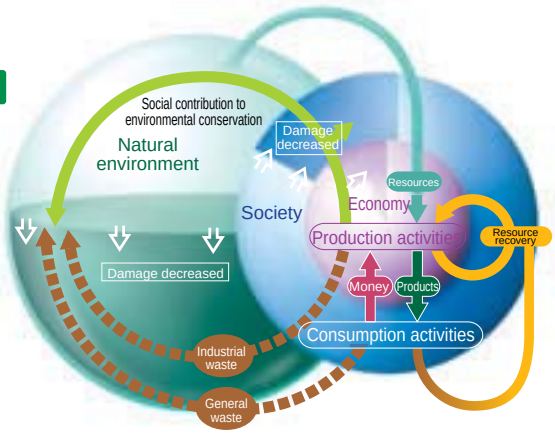
3 In recent years, damage to the natural environment has been recognized as a cause of community stress.

Figure 3, on the next page, shows the recent situation in the natural environment, society, and economy. The damages exceeding the self-recovery capacity of the natural environment start to affect society then cause stress (A) on the economy. Deadlock in society in turn causes stress (B) on the economy. People soon begin noticing unusual occurrences of natural disasters, such as floods caused by extreme weather and outbreaks of plague, that endanger the survival of the earth. As global warming and the ozone gap become widely known, people will start to realize that the environmental impact caused by society influences the earth as a whole. Business entities engaged in economic activities cannot gain public support if they do not deal with environmental issues seriously. Such trends may even influence the survival of those companies. An increasing demand for socially responsible investments and eco-funds shows the changes in society's awareness.

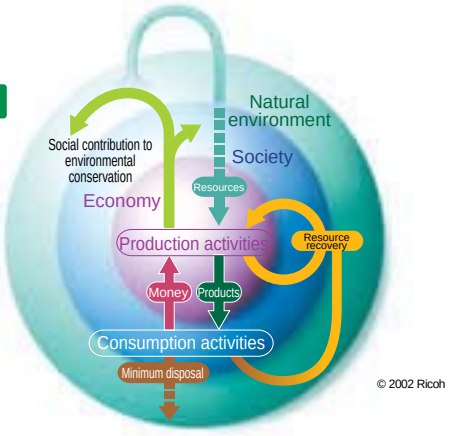
3



4



5



4 At present, the establishment of a resource-recirculating society is underway and being done in phases.

People are paying more attention to activities that reduce the amount of damage to the natural environment, including the sorting of waste and recycling, and saving energy. Reducing the amount of resources consumed and the amount of waste discharged is possible if we endeavor to recycle resources instead of disposing of them. There is a growing need for manufacturers to promote longer lifecycle of their products, smaller products, energy saving and the recycling of resources to create maximum benefit to society and companies with minimum resources. Not only are global companies asked to take into account the social responsibilities in the countries and regions where they engage in business activities, they are also asked to support and promote the awareness of environmental conservation activities of companies and regions that are expected to make significant economic development in the future and to achieve their goals with minimum environmental impact.
In addition, it is important to improve the self-recovery capability of the natural environment with such efforts as improving forest ecosystem conservation and the self-recovery capability of the natural environment. To pass on a better global environment to future generations and achieve sustainable development, companies and society as a whole are requested to be aware of the fact that they are global citizens, to change their business activities and lifestyles, and to establish the ideal resource-recirculating society.

5 We are aiming for an ideal resource-recirculating society to live harmoniously with the natural environment.

Ever since the Industrial Revolution, we have pretended to be independent of our natural surroundings. Nevertheless, we will once again take the natural environment into consideration and establish a society that coexists with it in the near future. This society will strictly limit its environmental impact so that the natural environment can recover by itself. We can learn from our ancestors, but we cannot go back to their time. To overcome the most serious threat to our existence in history, we need to face these new challenges from a global point of view, be totally aware of environmental conservation, and be innovative in our efforts to achieve our goals.

Using the Comet Circle Concept to Help the Ricoh Group Build a Society that Recirculates Resources.

The sustainable society of the future needs to produce maximum output with minimum resources and energy. It needs to restrict the environmental impact of all economic and social activities so that the natural environment can recover on its own. The Comet Circle represents a resource-recirculating society and points out activities and partnerships that the Ricoh Group must deal with.

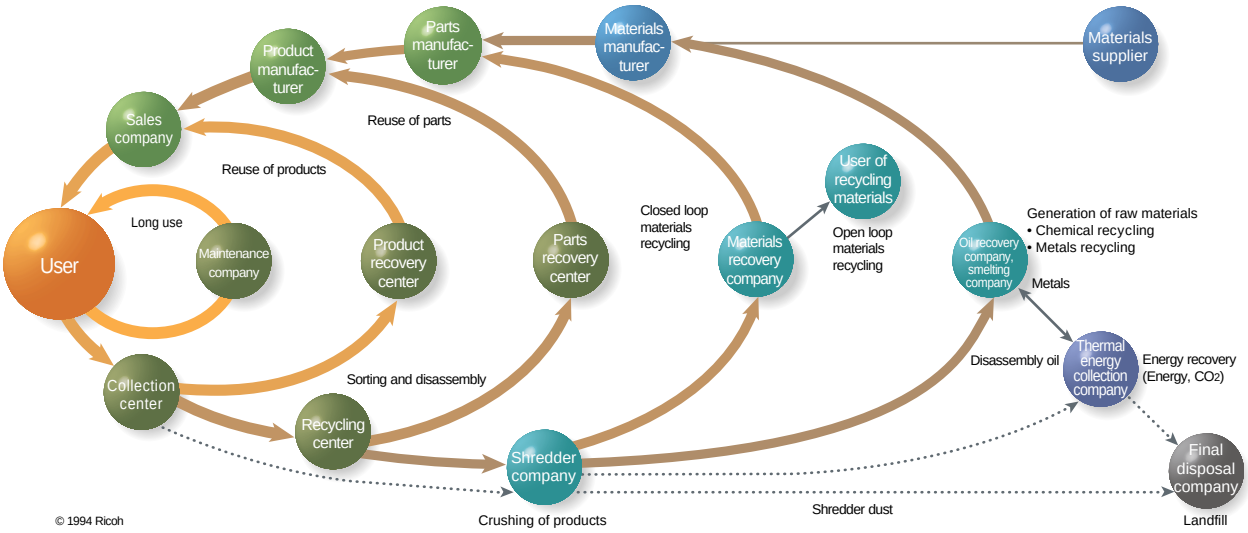
The Ricoh Group not only promotes its sustainable management, but also enthusiastically encourages suppliers, customers, and recycling companies to set up their own sustainable management. Moreover, the Group strives to make the resource recirculation of the Comet Circle smaller at all stages (entities represented by spheres) by improving economic efficiency and reducing environmental impact. This would reduce the total amount of environmental impact produced by economic and social activities.

The Comet Circle is a graphic representation of environmental conservation. In today's world, both the product and the manufacturing process of that product determine corporate value and what people purchase. Our philosophy goes beyond environmental conservation concepts and ensures the credibility of our products, none of which are produced under poor conditions or with child labor or by any other reprehensible means. Such profiteering is both unfair and incompatible with the philosophy of Ricoh Group.

There are Comet Circle members other than the Ricoh Group, suppliers, customers, and recycling companies. When individuals who direct their efforts toward building a society that recirculates resources more efficiently shop for things that have less environmental impact, separate their garbage for recycling, or take environment conservation and social responsibilities into consideration when making investments, they become a part of the Comet Circle, too. Everybody should be aware of the resources that went into the clothes that they buy and how those things were delivered. They should also think about how those clothes will be recycled after they are collected as trash. We recommend applying any situation to the Comet Circle.

Our mother earth is the most important and irreplaceable component of the Comet Circle. We, within the Comet Circle, cannot prosper alone if we cause continuous damage to the earth.

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



(1) Determine and Reduce Environmental Impact at All Stages

A society that recirculates resources must minimize the total environmental impact it causes by reducing it at all stages, including the transportation stage (the entity represented by a sphere in the Comet Circle diagram). For this reason, the Ricoh Group, suppliers, customers, and recycling companies must first determine the degree of environmental impact at all stages, including the transportation stage, by using an environmental management information system[1] and then reducing it by using the latest environmental conservation technologies[2] and promoting recycling and collection systems all over the world[3].

1. See page 23.
2. See page 31.
3. See page 50.

(2) Priority on Inner Loop Recycling

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

(3) Promoting a Multitiered Recycling System

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

(4) More Economically Rational Recycling

A society that recirculates resources must also establish a recycling system in which products and money flow in opposite directions in both post-product-use stages and original production and marketing stages. The Ricoh Group, making use of an upgraded design, is promoting a more economically rational recycling system in partnership with recycling companies. In Japan, the Green Procurement Law came into effect in April 2001, and Canada established an Environmental Choice Program (ECP) Mark system*. Therefore, 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.

*See page 41.

(5) Partnerships at Every Stage

The Ricoh Group, as a manufacturer, is limited in what it can do to reduce the environmental impact caused at each stage of production. The Group can effectively reduce environmental impact and recycling cost only by decreasing its usage of chemical substances with the cooperation of materials and parts manufacturers, urging customers to use products that have less environmental impact or use products in ways that produce less environmental impact, and improving efficiency in the transportation of products to be marketed as well as used products. Thus, environmental impact can be reduced effectively in an economically rational way by forming a partnership at every stage.

The Ricoh Group helps reduce the environmental impact caused by society as a whole by sharing the information and know-how it obtains through its activities in the community. We consider that partnerships are to share the information and we regard any stakeholders, who receive the information as our partners.

To continue its efforts in environmental conservation, the Ricoh Group shows the results of its environmental conservation activities while deriving a benefit from such activities. This is the Group's idea of sustainable management.

Importance of Sustainable Management

In its past environmental conservation approaches, the Ricoh Group first went through a Passive Stage, in which it dealt with regulations and responded to customer needs, then a Proactive Stage, in which it reduced its environmental impact by voluntarily setting higher goals in environmental conservation as a global citizen. Now, the Group is preparing to enter the Responsible Stage, in which it strives to place environmental and economic aspects side by side in its work and pay equal attention to environmental conservation and deriving benefit. The Ricoh Group regards environmental conservation activities as a lifelong approach. To this end, the Group focuses on continuing its activities while striving to limit the environmental impact of its economic activities as a whole so that the natural environment can recover by itself. To survive in the business world and continuously engage in environmental conservation activities, it is essential for companies to make a profit through their business activities. The Ricoh Group strives to be environment-conscious and improve all of its business activities*, while establishing an action plan for fiscal 2002 through fiscal 2004. The Ricoh Group is mainly aiming at establishing the world's finest environmental management system by showing the results of its environmental conservation activities while deriving benefit and by improving the quality of Ricoh products and business processes through innovative environmental conservation technologies.

*See page 20.

Understanding the Group's Environmental Impact

In limiting the environmental impact of all economic activities so that the natural environment can recover on its own, we need to recognize three significant conditions: 1) the use of resources within the scope that the natural environment can recover by itself, 2) reduction in waste disposal within the scope that the natural environment can recover by itself, and 3) reduction in the amount of greenhouse gases. The Ricoh Group first identifies the environmental impact in the Group's business activities as a whole using Eco Balance*. The Group then carries out the most effective method of improving the quality of its products and business sites in major environmental conservation areas, such as resource conservation and recycling, energy conservation, and pollution prevention.

*See page 25.

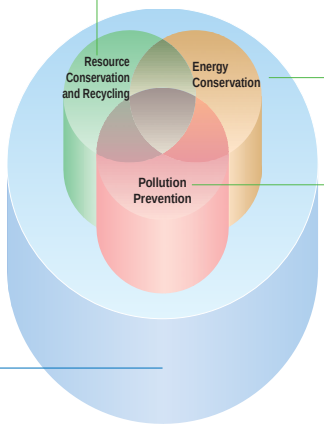
Mechanism of the Ricoh Group's Environmental Management

If a company wishes to continuously reduce its environmental impact, it needs to benefit from its environmental conservation activities as a whole. The Ricoh Group, based on the idea of understanding the environmental impact of its business activities as a whole, established its own unique mechanism, shown on the opposite page, to identify the environmental impact at each process. By doing so, the Group can both reduce environmental impact and make a profit. With this mechanism, the Ricoh Group strives to realize sustainable management and improve such relevant tools as the environmental management information system[1] and environmental accounting[2], which work as criteria when evaluating the progress and achievements in sustainable management. With the aim of improving its activities as a whole, the Ricoh Group is developing environmental conservation technologies[3], including energy-saving technologies, recyclable designs, and paperless approaches. In addition, the Group is making an earnest attempt to improve employee awareness[4] of environmental conservation by offering environmental education programs, nurturing environmental volunteer leaders, and promoting zero-waste-to-landfill activities.

1. See page 23.
2. See pages 17, 36, 40, 48, 50, and 73.
3. See pages 31 and 47.
4. See pages 39, 63, and 67.

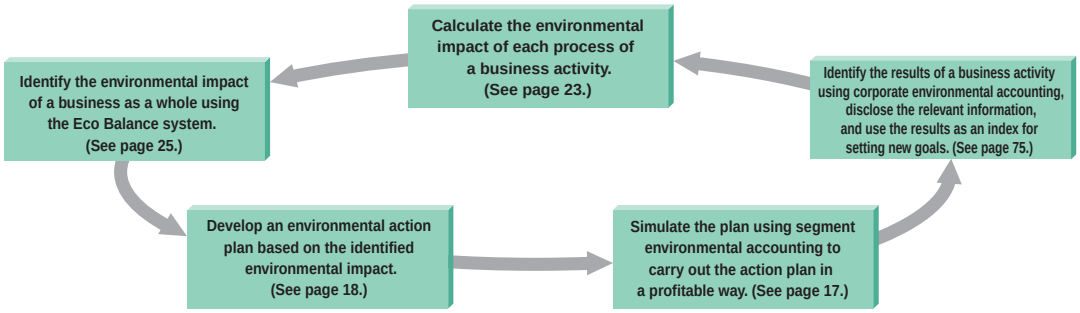
- Environmental Management System (EMS) ..... p. 20
- Environmental Management Information System ..... p. 23
- Environmental Communication ..... p. 59
- Social Contribution Activities ..... p. 61
- Environmental Education and Awareness Promotion ..... p. 67
- Personnel-Related Measures ..... p. 69
- Health and Safety ..... p. 71
- Environmental Accounting ..... p. 73

Identifying the Ricoh Group's Environmental Impact and Areas Covered



- Resource Conservation and Recycling (Business Sites) ..... p. 39
  At our plants, we are striving to achieve "complete production," i.e., getting maximum results using minimum resources with Zero-Waste-to-Landfill.
- Resource Conservation and Recycling (Products) ..... p. 50
  To conserve resources, we are developing products based on recyclable designs, constructing a recycling network, and manufacturing products using recycled parts and materials.
- Energy Conservation (Business Sites) ..... p. 35
  We are striving to slow down the rate of global warming through efficient power consumption and the introduction of new energy systems.
- Energy Conservation (Products) ..... p. 47
  To prevent global warming, we are developing and offering various energy-saving products.
- Pollution Prevention (Business Sites) ..... p. 37
  In the area of manufacturing, the Ricoh Group is striving to reduce emissions, waste, and the use of environmentally sensitive substances.
- Pollution Prevention (Business Sites) ..... pp. 32 & 49
  We are promoting the strict control of chemicals used in our products to reduce and eventually eliminate the use of environmentally sensitive substances.

The Ricoh Group's Environmental Management Methods



Summary of the Fiscal 2001 Performance

In fiscal 2000, Ricoh marketed the Aficio 1035/1045 (imagio Neo 350/450) series, the digital multifunctional copier line based on Ricoh's proprietary energy-saving technologies and recyclable designs. In fiscal 2001, Ricoh implemented those technologies in the Aficio 1022/1027[1] (imagio Neo 220/270) series, medium-to-low end markets. Driven by the growing awareness of environmental conservation in the Japanese, U.S., and European markets, many customers bought those machines, which contributed to reducing the environmental impact of society as a whole[2]. After achieving Zero-Waste-to-Landfill[3], i.e., reducing environmental impact and improving management quality, at plants in Japan, Europe, and the Americas, the Ricoh Group did the same at plants in China and Taiwan. In addition, the Ricoh Group extensively engages in a forest ecosystem conservation project[4] to improve the self-recovery capability of the natural environment and activities led by environmental volunteer leaders[5].

1. See pages 32 and 47.
2. See page 48.
3. See page 40.
4. See page 61.
5. See page 63.

Environmental Action Plan and Environmental Management Goals Starting in Fiscal 2002

Based on a new environmental action plan, the Ricoh Group strives to effectively reduce its environmental impact and benefit from environmental conservation activities.

The Ricoh Group has drawn up a medium-term environmental action plan for activities starting from fiscal 2002 through fiscal 2004. This action plan was prepared with priority given to dealing with processes that suffer from more serious environmental impact first by identifying the environmental impact of each process of the Group's business activities in fiscal 2000 and fiscal 2001. The Group is setting goals to achieve the Passive Stage[1], Proactive Stage[2], and Responsible Stage[3], corresponding to the items of the action plan. Based on this plan, the Ricoh Group aims at reducing the environmental impact of all processes, such as procurement, production, transportation, marketing, after-sales service, use, and recycling and plans to achieve this goal by using the method with the highest economic efficiency. As for global warming, an issue that attracts the world's attention, the Group set three major goals as follows.

1. Dealing with regulations
2. Voluntarily taking measures to reach higher goals in conserving the global environment
3. Realizing environmental conservation and creating economic benefits at the same time

(1) Prevent Global Warming

To reach the goal of the Kyoto Protocol, the Ricoh Group is making sincere efforts to reduce total CO_2 emissions at its business sites and CO_2 emitted by customers.

Reduce greenhouse gases generated at Ricoh business sites[1]

Total CO_2 emissions generated at production sites and nonproduction sites will be reduced 13% and those in terms of the CO_2 emissions per sales unit 62% by fiscal 2010 (Ricoh only[2], compared with fiscal 1990). Accordingly, the Ricoh Group is planning to reduce 20% CO_2 emissions per sales unit in fiscal 2004 from that in fiscal 2000. Specific measures include improving processes; introducing highly efficient facilities, including cogeneration systems; and using new types of energy. The costs to launch new businesses will be covered by the savings gained from the improved efficiency of existing businesses. Also, greenhouse gases other than CO_2 will be reduced 10% by fiscal 2010, compared with fiscal 1995. With this in mind, the Group will ensure that emissions increase by no more than 1% by fiscal 2004, compared with fiscal 2000.

Reduce CO_2 emissions by energy-saving products[3]

The Ricoh Group is making sincere efforts to reduce the amount of power products consume while in operation or on standby. If everyone all over the world uses the Ricoh Group's products, CO_2 emissions would drop approximately 45 thousand tons (reduced 56% of fiscal 2000 figures) in fiscal 2004.

1. See page 35.
2. See table on next page for goals of Ricoh Group companies other than Ricoh.
3. See page 47.

(2) Making the Recycling Business Profitable

The Ricoh Group sets goals for marketing recycled copiers in its Green Solution[1], which is the Group's marketing strategy scheme, and improves the efficiency of collection, recycling, and recovery. Thus, the Ricoh Group aims at making its recycling business profitable[2] by the end of fiscal 2004.

1. See page 42.
2. See page 50.

(3) Reducing the Use of Chemical Substances*

The Ricoh Group starts marketing new products abolishing the use of lead, hexavalent chromium, cadmium, and polyvinyl chloride, in fiscal 2004 and thereafter.

*See page 32.

Estimated Costs and Effects of Reduction in CO_2 Emissions at Business Sites (Segment Environmental Accounting)

(Unit: millions of yen)

Costs		Effects				EI value (t/100 million yen)
Item	Amount	Economic benefits		Effect on environmental conservation		
		Item	Amount	Item	Amount reduced (t)	
Energy-saving investments (105 cases)	1,608.8	Reduction in heat and light expenses	1,640.8	Reduction in CO_2 emissions	39,019.4	2,425.3

* Costs are calculated from the investment plan. Effects are calculated using the depreciation period for equipment.

Estimated Costs and Effects of Reduction in CO_2 Emissions from Energy-Saving Products (Segment Environmental Accounting)

(Unit: millions of yen)

Costs			Effects			EI value (t/100 million yen)
Item	Main costs	Amount	Economic benefits		Effect on environmental conservation	
			Corporate effect	Customer effect		
Research and development	Development of energy-saving units	600	Effect on gross margin 18,160	Reduced electricity expenses 8,908	Reduced CO_2 emissions 138,265 t	15,227
	Molds, jigs, and parts	308				

* Costs are estimated from past development costs. Effects are estimated from the number of products scheduled to be marketed between fiscal 2002 and fiscal 2004.
Figures for reduction in heat and light expenses and CO_2 emissions are estimated from the amount reduced over three years, from fiscal 2002 to fiscal 2004, on the assumption that the machine is used eight hours a day, twenty days a month.

Estimated Costs and Effects of Reduction in Chemical Substances at Business Sites (Segment Environmental Accounting)

(Unit: millions of yen)

Costs		Effects				EI value (t/100 million yen)
		Economic benefits		Effect on environmental conservation		
Item	Amount	Item	Amount	Item	Amout (t)	
Development expenses	294	Avoidance of risk in soil and groundwater contamination	900	Dichloromethane used	120.3 → 0	11.8
Investments	40					
Personnel expenses	684	Reduced production loss	5.19			
Other costs	1.5					
	1,019.5		905.19			

The Ricoh Group Environmental Action Plan (fiscal 2002—fiscal 2004)

	Goals	Environmental Management Goals* (Scheduled for fiscal 2004)
1. Improving environment-friendly functions and promoting technological development	1) Promote the use of energy-saving technologies in products (See page 47.) • Achieving energy-saving standards	Responsible stage
	2) Promote pollution prevention measures with regard to products (See pages 32 and 49.) • Completely eliminate the use of environmentally sensitive substances (i.e., lead, hexavalent chromium, polyvinyl chloride, and cadmium) in products • Reduce noise levels at least 2 dB (weighted average value for the number of units sold out of the number of units marketed in fiscal 2000) • Observe Ricoh standards that cover environmentally sensitive substances emitted by products, including styrene, formaldehyde, ozone, and dust	Responsible stage
	3) Develope technologies that contribute to reducing the environmental impact in paper production (See page 32.) • Develop practical application technologies for alternative paper or rewritable paper	Responsible stage
2. Reaching the resource conservation rate by improving the productivity of products and materials as well as profitability in the recycling business	1) Improve the amount of reusable parts used by at least 20 times (compared to fiscal 2000 in Japan). (See page 50.)	Responsible stage
	2) Improve collection of the number of used products and toner cartridges at least 10% (the Ricoh Group as a whole, compared to fiscal 2000 figures) (See page 50.)	Responsible stage
	3) Increase the number of resource-recirculating-type products marketed by a factor of 20 or more (Japan, compared to fiscal 2000 figures) (See page 50.)	Responsible stage
	4) Improve the resource recovery rate of used products and toner cartridges (See page 50.) • The resource recovery rate of both products and toner cartridges rises to 98%. (Japan) • The resource recovery rate of both products and toner cartridges increases to 85%. (Europe) • The resource recovery rate of products rises to 95% and that of toner cartridges rises to 100%. (The Americas) • The resource recovery rate of products increases to 85% and that of toner cartridges rises to 90%. (China and Taiwan) • The resource recovery rate of products increases to more than 85% and that of toner cartridges rises to 85%. (The Asia-Pacific region)	Responsible stage
3. Environmental conservation activities at plants and offices	1) Reduce the amount of energy used (See page 35.) • Reduce CO_2 emissions at plants and offices 62% by fiscal 2010 in terms of CO_2 emissions per sales unit and 13% in terms of total amount emitted (Ricoh in Japan, compared to fiscal 1990 figures) • Reduce CO_2 emissions 20% per sales unit (all Ricoh business sites in Japan, compared to fiscal 2000 figures) • Reduce CO_2 emissions 2% (the Ricoh Group in Japan, compared to fiscal 2000 figures) • Reduce the amount of energy used 20% per sales unit (Ricoh Group manufacturing subsidiaries outside Japan, compared to fiscal 2000 figures)	Responsible stage
	2) Promote pollution prevention (See page 37.) • Reduce environmentally sensitive substances (Ricoh Group's target substances for reduction) 8% of those used and 50% of those emitted. (Ricoh and Ricoh Group manufacturing subsidiaries in Japan and Ricoh Group manufacturing subsidiaries other than those in 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 other than those in Japan) • Restrict the increase of greenhouse gas (other than CO_2) emissions to a maximum of 1% (Ricoh and Ricoh Group manufacturing subsidiaries in Japan and Ricoh Group manufacturing subsidiaries outside Japan, compared to fiscal 2000 figures) • Reduce the emissions of ozone-depleting substances 60% (Ricoh and Ricoh Group manufacturing subsidiaries in Japan and Ricoh Group manufacturing subsidiaries outside Japan, compared to fiscal 2000 figures)	Proactive stage
	3) Promote resource conservation and recycling (See page 39.) • Reduce generated waste at least 13% (Ricoh and Ricoh Group manufacturing subsidiaries in Japan and Ricoh Group manufacturing subsidiaries outside Japan, compared to fiscal 2000 figures) • Improve the waste recycling rate to 90% (Ricoh Group nonmanufacturing subsidiaries in Japan) • Reduce water consumption at least 10% (Ricoh and Ricoh Group manufacturing subsidiaries in Japan, and Ricoh Group manufacturing subsidiaries other than those in Japan, compared to fiscal 2000 figures) • Reduce paper purchase at least 10% (Ricoh manufacturing subsidiaries and Ricoh Group manufacturing and nonmanufacturing subsidiaries in Japan and Ricoh Group manufacturing subsidiaries outside Japan, compared to fiscal 2000 figures)	Responsible stage
4. Promoting green partnerships	1) Promote green marketing (See page 41.) • Improve the recycled pulp use rate for paper products to 60% (Japan)	Proactive stage
	2) Promote green procurement (See page 33.) • Identify environmental impact at suppliers to set goals for reducing impact (Ricoh Group purchasing divisions) • Completely eliminate designated environmentally sensitive substances used in the supplier's manufacturing process (Ricoh Group purchasing divisions)	Responsible stage
	3) Promote green purchasing (See page 34.) • Improve the green purchasing rate (for office supplies, etc.) to 100% (the Ricoh Group in Japan)	Proactive stage
5. Improving the environmental management system	1) Establish a new environmental accounting system (See page 73.)	Responsible stage
	2) Expand areas and locations to collect environmental impact information (See page 23.)	Responsible stage
6. Promoting environment-conscious social contribution activities	1) Promote forest conservation activities to preserve the ecosystem (the Ricoh Group) (See page 61.)	Proactive stage

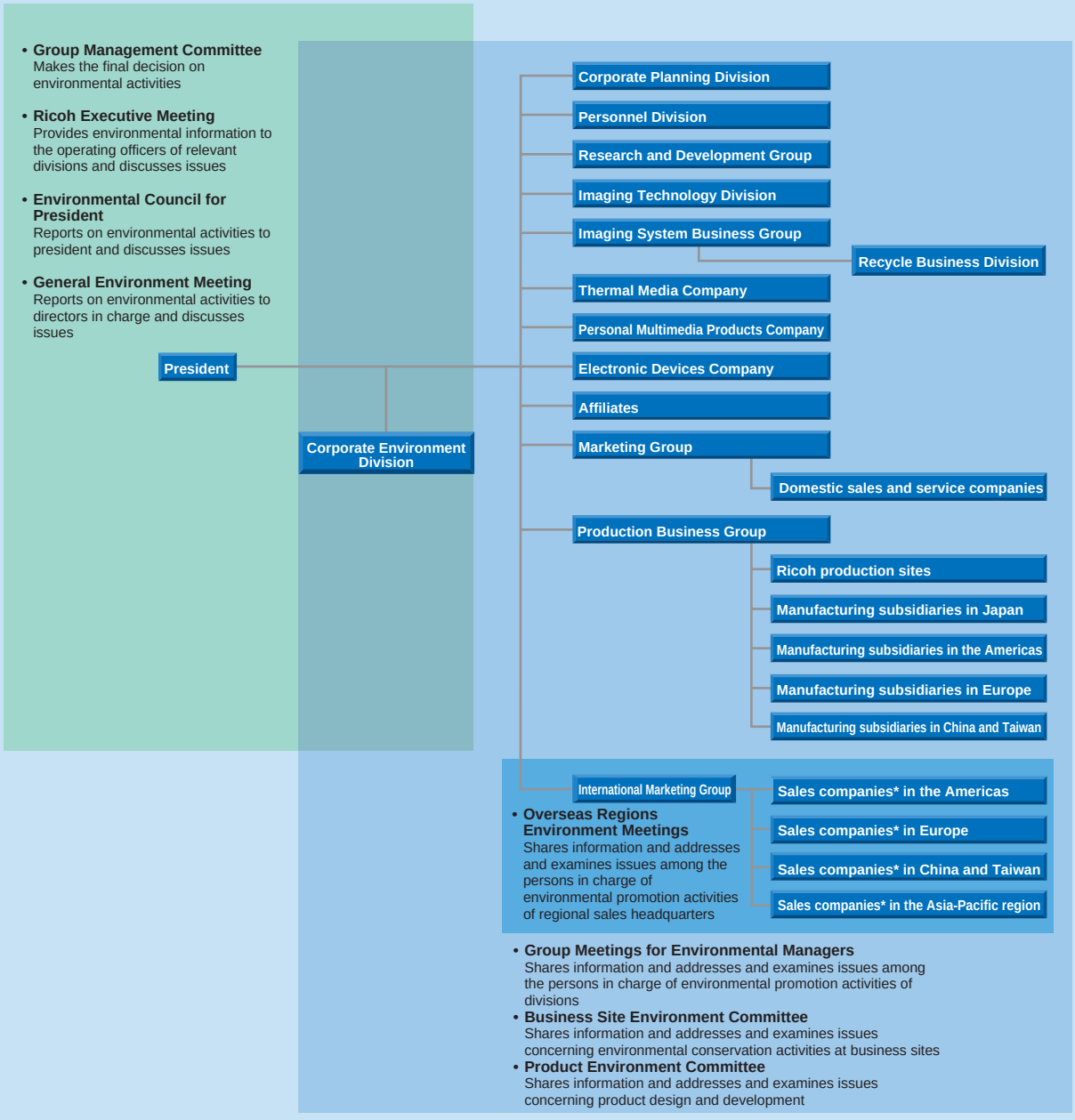
*See page 17 for the definitions of responsible stage and proactive stage.

Ricoh Group Environmental Management Promotion System

Enhanced the environmental activity promotion system for global sustainable management

The Ricoh Group, as a global business entity, started an environmental management promotion system in April 2002. Aiming at promoting the environmental efforts of Group companies and more efficient environmental management, the Group integrated the management systems of business activities and environmental activities. To realize sustainable management worldwide, the Group conducts management reviews of achievements in their environmental action plans. The Group lets all Group employees share know-how through occasional regional and committee meetings and corporate benchmarking.

Organization Chart for the Ricoh Group's Environmental Management System



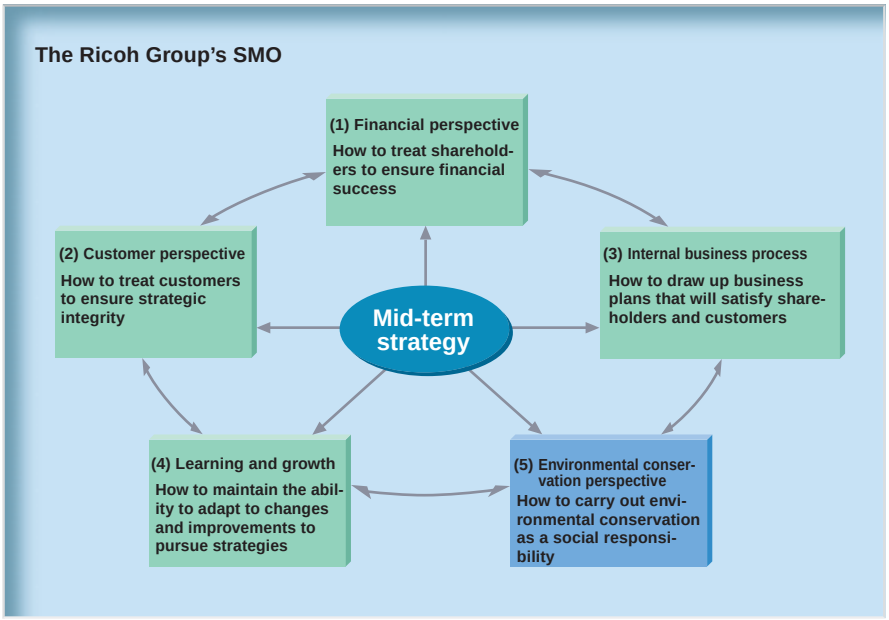
*The United States, Canada, and Latin America are covered by sales companies in the Americas; Europe, the Middle East, and Africa covered by sales companies in Europe; China and Taiwan and Hong Kong covered by sales companies in China and Taiwan; and Asia (excluding Japan, China covered, and Taiwan)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

Environmental Management System (EMS)

Enhance the Plan-Do-Check-Action (PDCA) cycle by integrating the item "environment" into the Strategic Management by Objectives (SMO)

The Ricoh Group's EMS is an important tool in realizing sustainable management. By integrating the item "environment" into SMO for the Group as a whole, the Ricoh Group can evaluate the activities of all Group business sites and divisions. Furthermore, the Group uses the PDCA cycle for the Group as a whole as well as each business site and division to continuously improve its sustainable management.

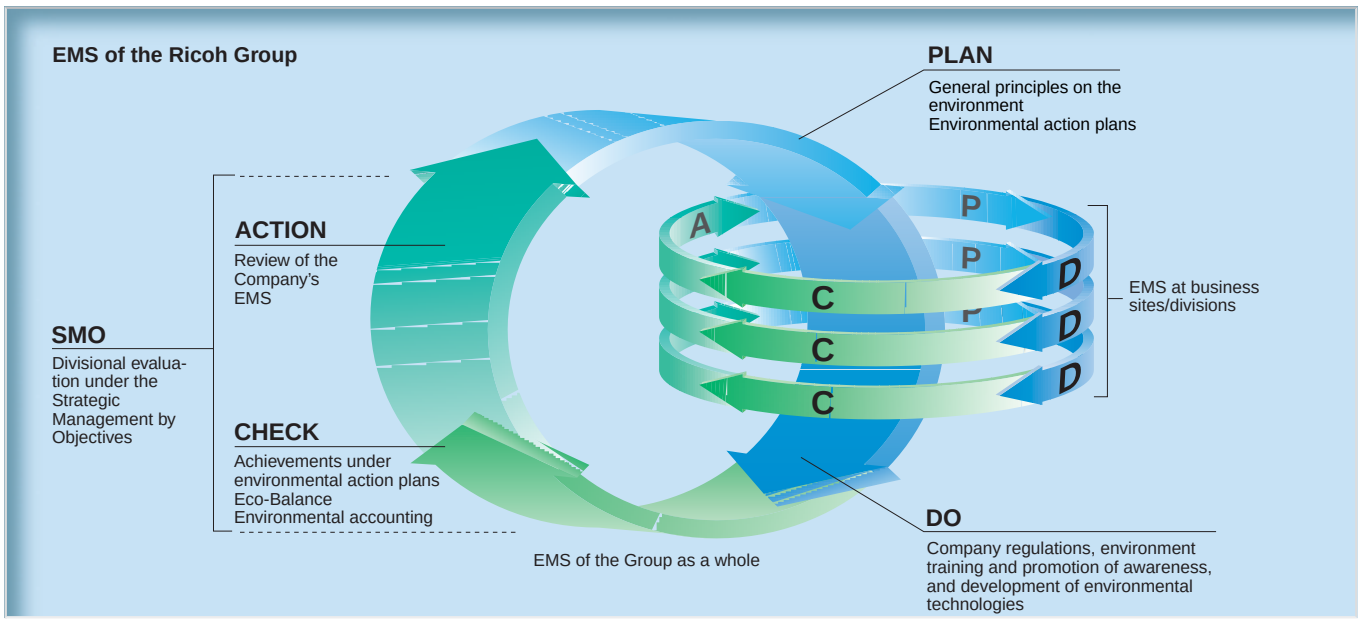
* The SMO system with the additional environmental item is applied to areas that are not shown in the figure, the Environmental Management System (see page 19).



Groupwide EMS

Ricoh regards environmental conservation activities as its duty as a global and corporate citizen. However, such activities must be beneficial for the Company to continue them. Ricoh therefore uses an environmental accounting system[1] to identify environmental cost-effectiveness. Furthermore, 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 developing it to make the PDCA cycle work more efficiently throughout the entire Ricoh Group. For this purpose, Ricoh developed SMO throughout the entire Group in several phases and made sure through management reviews[2] that the environmental action plans are achieved throughout the Group.

1. See pages 17, 36, 40, 48, 50, and 73.
2. The review conducted by the management to ensure appropriateness and efficiency of the environmental management system



ISO 14001 Certified Divisions and Business Sites of the Ricoh Group (April 2001—March 2002)

See *The Ricoh Group Sustainability Report 2001* for status as of March 2001 and earlier. (http://www.ricoh.co.jp/ecology/e-/report/index2001.html)

Name of Business Site	Location	Assessing/ Registering Organization	Date of Certification
RICOH CORPORATION (SAN JOSE)	U.S.A.	BSI	April 18, 2001
NRG Italia S.p.A.	Italy	DNV	May 23, 2001
Ricoh Electronic Technology (China) Co., Ltd.	China	SCEMS	May 23, 2001
Gestetner Denmark a/s	Denmark	DS CERTIFICATION	June 11, 2001
N.R.G. COMUNICACIONES, S.A.	Spain	AENOR	June 11, 2001
Ricoh New Zealand Limited	New Zealand	TeLaRC	June 14, 2001
NRG Deutschland GmbH	Germany	TUV	July 20, 2001
Gestetner Svenska AB	Sweden	DNV	Aug. 23, 2001
Ricoh Hong Kong Limited	Hong Kong	SGS	Sept. 11, 2001
RICOH BELGIUM	Belgium	BVQI	Sept. 20, 2001
Ricoh Nederland B.V.	The Netherlands	BVQI	Sept. 25, 2001
NRG Group UK Limited	U.K.	BSI	Nov. 15, 2001
Ricoh Europe B.V.	The Netherlands	BVQI	Nov. 20, 2001
Ricoh Leasing Company	Japan	JQA	Nov. 30, 2001
RICOH Austria Ges.m.b.H.	Austria	BVQI	Dec. 7, 2001
RICOH DEUTSCHLAND GMBH	Germany	TUV	Dec. 7, 2001
Ricoh Co., Ltd. (Japanese Sales Division and its sales companies)	Japan	JQA	Dec. 14, 2001
RICOH HUNGARY KFT	Hungary	BVQI	Dec. 14, 2001
NRG FRANCE SA	France	AFAQ	Dec. 18, 2001
GESTETNER (ISRAEL) LTD.	Israel	IQC	Dec. 31, 2001
RICOH ITALIA SPA	Italy	RINA	Jan. 25, 2002
Ricoh Australia Pty Ltd	Australia	QAS	Feb. 8, 2002
Ricoh Canada Inc.	Canada	SGS	Feb. 12, 2002
Ricoh (UK) Limited	U.K.	BSI	Mar. 4, 2002
RICOH FRANCE SA	France	BVQI	Mar. 7, 2002
NRG Ireland Limited	Ireland	BSI	Mar. 15, 2002
Ricoh Norge AS	Norway	Nemko	Mar. 25, 2002
RICOH ESPANA, S.A.	Spain	BVQI	Mar. 27, 2002
Ricoh Europe BV, Sucursal em Portugal	Portugal	PJR	Mar. 28, 2002
Ricoh POLSKA Sp. zo. o.	Poland	BVQI	Mar. 29, 2002
RICOH (SINGAPORE) PTE LTD	Singapore	BSI	April 18, 2002*

* Assessment was completed by the end of March 2002 and an informal certification was received, but the certification issuance date was April 2002.

EMS's for Business Sites and Divisions

The Ricoh Group, as a global company successively adopted SMO and set up EMS at its business sites and divisions pursuant to ISO 14001, the internationally recognized certification. Furthermore, the Group began having its business sites ISO 14001 certified in order to establish a Groupwide environmental management system with lower costs. Starting with Ricoh's Gotemba Plant*, which was certified on December 25, 1995, 35 of the Ricoh Group's 40 bases have been certified to date, and 789 out of 794 business sites in regions covered by the Group were certified by the end of fiscal 2001. The Group is planning the same for the remaining five bases and five sites by November 2002.

* The first business site to receive certification from a Japanese organization.

● Development of EMS-Oriented Activities

The Ricoh Group is developing EMS-oriented activities, taking division-specific environmental aspects into account, as illustrated on the next page. For example, nonproduction sites engage in activities that result in establishing EMS, such as designing products with less environmental impact[1] and recommending them to customers[2], as well as practicing energy conservation and conducting zero waste campaigns at offices.

1. See page 31.
2. See pages 32, 41, and 47.

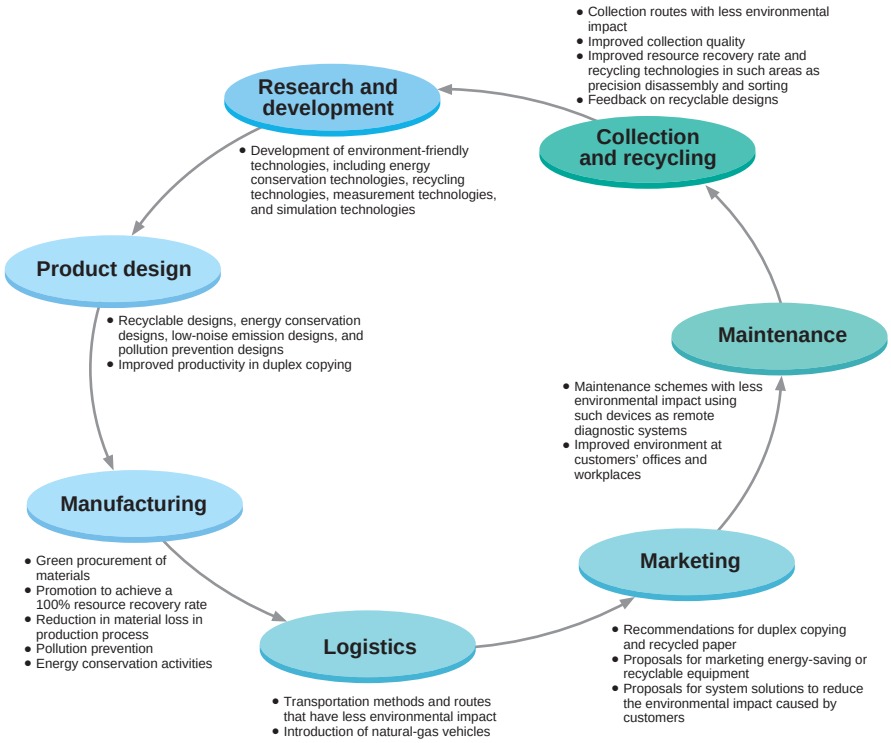
● Environmental Audits

The Ricoh Group's internal environmental audits are carried out by internal auditors at each business site, and the results are given to the top management of the sites audited to make the PDCA cycle work more efficiently.

Risk Management

The Ricoh Group acquired ISO 14001 certification at its major production sites around the world and has established a risk management system based on this. All accidents are handled in a socially responsible manner and reported to the top management, following decisions made at environmental meetings around the world. Furthermore, appropriate countermeasures are taken, such as prompt information disclosure to affected communities.

Divisional Activities for Environmental Management



● Examples of Risk Management from around the World

Ricoh Group business sites are addressing the problems of environmentally sensitive substances by reducing their usage, installing contamination- and disaster-preventing equipment, and training personnel.

Safety Monitoring System

The safety control system established at the Yashiro Plant uses sensors and other devices throughout the facility to confirm its safety. In an emergency, appropriate instructions are immediately given from the control room, accompanied by alarms and warnings on monitors.

The safety control room at Ricoh's Yashiro Plant

Control of Environmentally Sensitive Substances

Plants that use environmentally sensitive substances store them in containers over a basin to prevent them from leaking into the soil.

The chemical storehouse of Ricoh Industrie France

Abolishment of Solvent-Based Paint

Ricoh Industrie France S.A. has developed an organic water-based paint to replace its solvent-based paint. The use of the water-based paint lowered the emissions of volatile organic compounds into the air by 83%. As a result, annual cost dropped approximately €27,000, or ¥2.8 million.

Preventing Pollution during a Fire

Ricoh Industrie France constructed a basin to collect water used in extinguishing fires and chemical substances, including toner, that may have mixed with the water to prevent them from leaking out of the plant and into the environment if the plant catches fire. The collected water is then pumped to a water treatment plant.

Water pool for fire fighting at Ricoh Industrie France

Training to Prevent Pollution and Deal with Emergencies

Ricoh Group plants pay careful attention to safety, especially when handling hazardous material, by engaging in 5S activities. 5S stands for five Japanese words that begin with the letter *s*: *seiri* (organizing or arranging things), *seiton* (putting things in order), *seiketsu* (cleanliness), *seiso* (cleaning), and *shitsuke* (discipline). Each plant prepares for emergencies by conducting annual training programs for pollution and disaster prevention.

Disaster drill at Ricoh Asia Industry Ltd. (RAI) in China

Environmental Management Information System

The environmental management information system calculates and analyzes environmental impact and relevant costs and supports the decision-making process to promote environmental management.

To make appropriate decisions in environmental management, it is necessary to have relevant data. To this end, the Ricoh Group established the environmental management system, which comprises the Group's environmental impact information system and environmental accounting system. Under the environmental management information system, the Group identifies the impact, costs, and effects of environmental improvement activities. The Ricoh Group will develop the system in fiscal 2002 and operate it worldwide.

Environmental Impact Information System

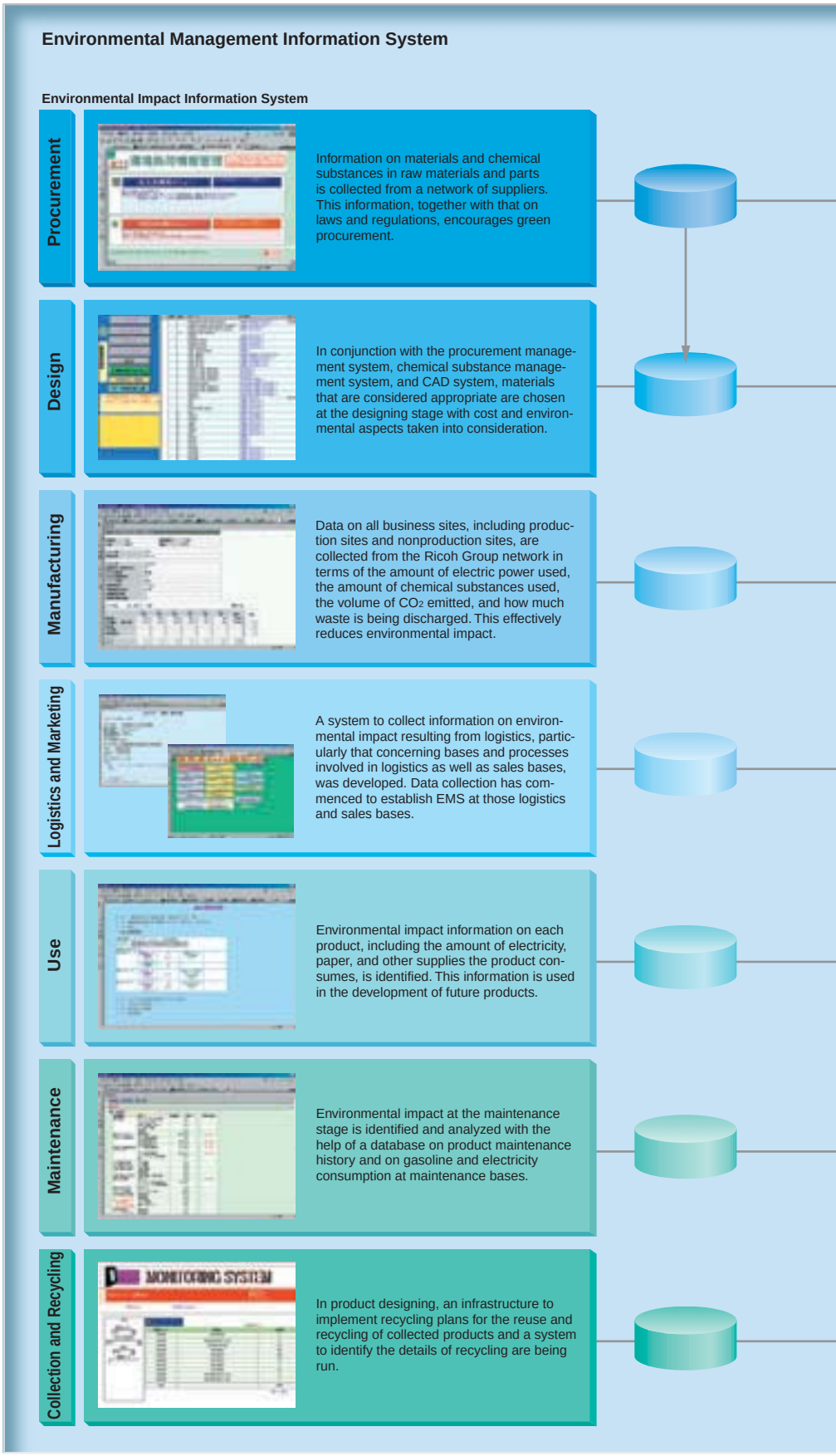
The environmental impact information system identifies the total impact each process of a business activity has on the environment as well as the activity, allowing the process that causes the largest environmental impact to be dealt with first. The system is based on the concept of the Comet Circle[1] to identify and reduce the environmental impact at all stages. It enables the identification of the appropriate data using life cycle assessment (LCA) when disclosing information to society. The Ricoh Group uses the environmental impact information obtained through this system to identify the Eco Balance[2] of its business activities as a whole, draw up an environmental action plan[3] based on the information, and carry out progress management.

1. See page 13. 2. See page 25. 3. See page 18.

Environmental Accounting System

The environmental accounting system collects and processes data on environmental conservation effects obtained from the environmental impact information system and environmental cost data obtained from the accounting system to identify corporate environmental accounting* in a timely fashion. The Ricoh Group uses this in its sustainable management and discloses it to society.

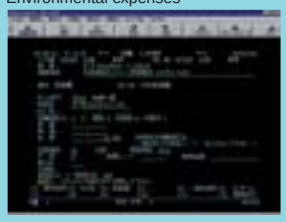
*See page 75.



Environmental Accounting System

Accounting system

Environmental expenses



Environmental capital investment

Information collected

Integrated database

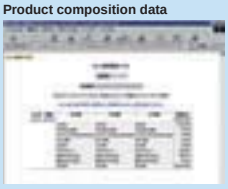
Information collected

A data collection system for proportional division of the figures is established.

- Number of units produced (classified by process)
- Product weight
- Monetary value
- Divisions and facilities involved in production

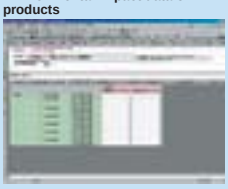
Data of chemical substances and wastes discharged and energy consumed by major business activities

Product composition data

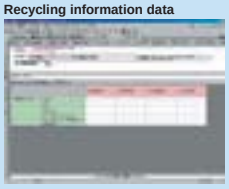


Divisional environmental impact data

Environmental impact data of products



Recycling information data



Environmental accounting guidance database

Environmental accounting compilation database

Information analysis
Information processed

Identifying Eco Balance

Drawing up and managing the Environmental Action Plan

Corporate environmental accounting

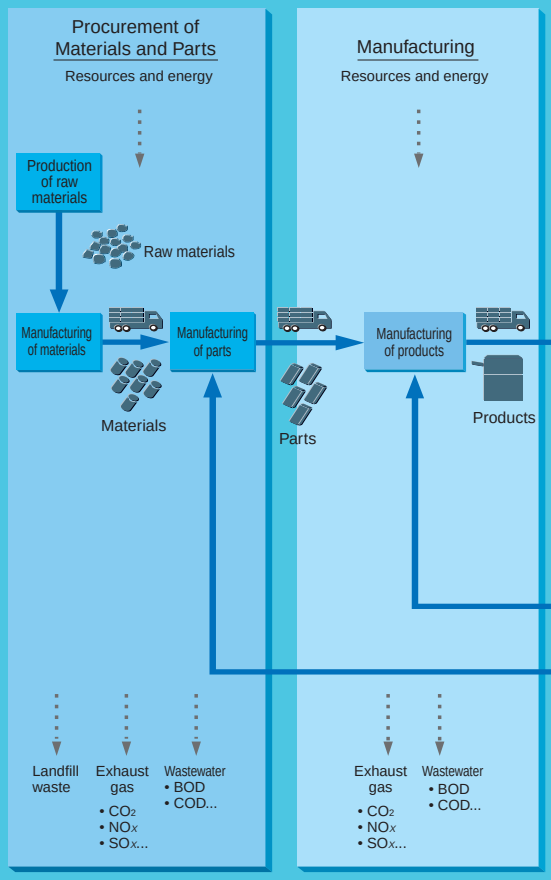
Identifying Environmental Impact (Eco Balance)

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

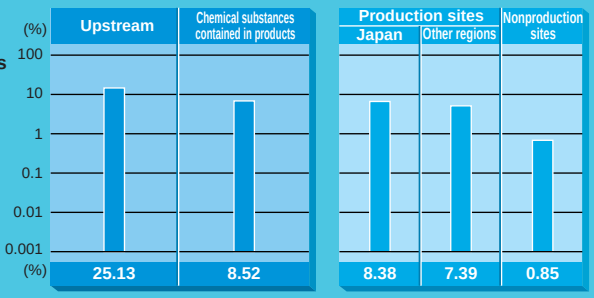
The figure on the right shows the Eco Balance[1] of the Ricoh Group's business activities as a whole by calculating the environmental impact and monetary value of each process based on data collected from the environmental management information system described on the previous page. All kinds of business activity-related environmental impact, including global warming, ozone layer destruction, and ecosystem damages, are identified and translated into numerical figures using the integrated analysis method. Ricoh began identifying the environmental impact of its business activities in fiscal 1999 under this method. It was discovered that upstream activities (manufacturing of materials and parts), chemical substances contained in products, and paper consumed by customers had significantly high environmental impact. To develop more-effective environmental conservation activities, the Ricoh Group will reduce its environmental impact, especially in the three processes listed above, and is planning to carry out drastic measures in processes other than the three listed above. A new environmental action plan[2] to be put into effect from fiscal 2002 is to be drawn up based on data obtained from the integrated analysis method.

1. Eco Balance is a system that involves the listing of environmental impact input/output data to identify, quantitatively measure, and report the environmental impact of companies.
2. See page 18.

(1) Eco Balance of Overall Business Activities



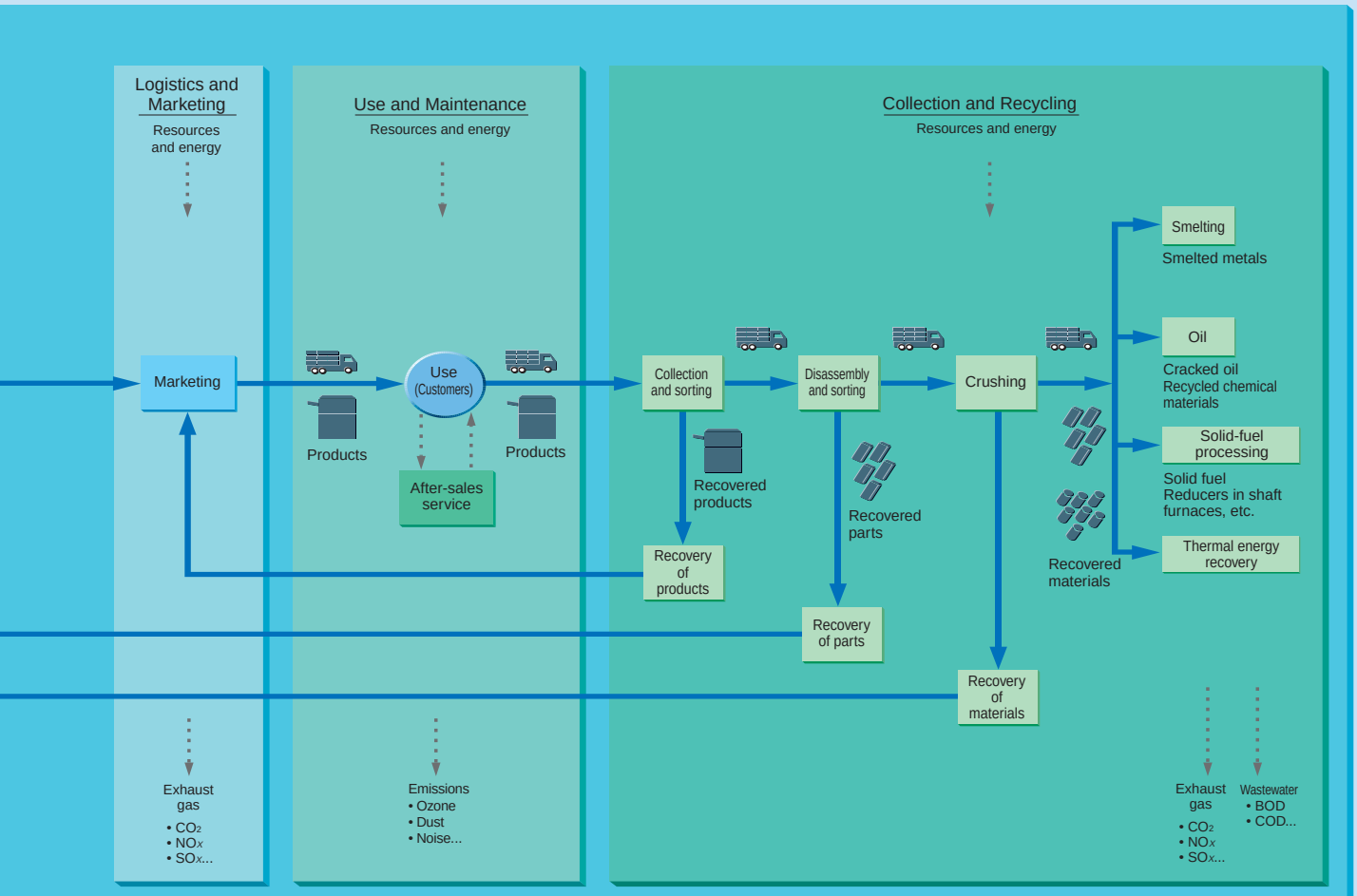
(2) Figures from an Integrated Analysis of Business Activities (Rate/Amount)
(Reviewed by BVQI [1])



(millions of yen)					
	50,520	17,119	16,841	14,851	1,715

(3) Major Activities (Environmental Action Plan from Fiscal 2002)
(See page 18.)

- Promotion of green procurement and green purchasing
- Promotion of the prevention of products from being polluted
- Increased quantity of reused parts in products
- Reduction in the amount of energy used at business sites
- Reduction of pollution at business sites
- Promotion of resource conservation and recycling at business sites



- Promotion of green marketing
- Increased number of resource-recirculating products

- Promotion of the development of energy-saving products
- Development of technologies useful in reducing the environmental impact of paper

- Improvement in the collection rate for used products and toner cartridges
- Improvement in the resource recovery rate for used products and toner cartridges

Identifying Environmental Impact (LCA)

Conducting LCA[1] research to identify a product's environmental impact and disclosing the relevant information to customers

To manufacture products with less environmental impact, it is important to identify the environmental impact that products cause throughout their life cycles. It is also important to disclose LCA information[2] to help more customers use products with less environmental impact. Ricoh uses the LCA method to identify the environmental impact of its products and verifies environmental improvement measures by modifying the design and manufacturing processes. LCA is therefore useful in promoting sustainable management.

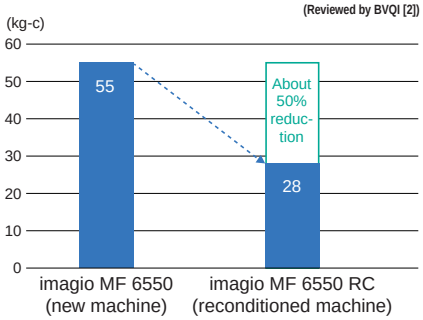
1. LCA is a means of quantitatively determining the level of environmental impact generated throughout a product's life cycle, from resource procurement through manufacturing, transportation, use, maintenance, recovery, recycling, to disposal. Even a partial level of impact can be used.
2. See page 59.

LCA Research

Ricoh established an LCA research team in 1994 to conduct practical research on LCA and has released a variety of case study reports. With more case studies being conducted, such issues as the importance of explaining the usage of LCA and difficulties of collecting data and setting research conditions are being clarified. Making use of the knowledge obtained by the LCA research team, manufacturing subsidiaries are conducting their own LCA. Ricoh participates in government committees and other gatherings to help improve the LCA method and conduct research with scholars and company representatives. Ricoh disclosed LCA information about printers and copiers in fiscal 2000 and about facsimiles in fiscal 2001. Furthermore, for the purpose of endorsing the environment-friendly functions of recovered machines, Ricoh made an LCA comparison* between a new machine, the imagio MF 6550, and a reconditioned machine, the imagio MF 6550 RC.

* See the figure on the right.

LCA Comparison between a New Machine and Reconditioned Machine (CO_2 Emissions)



* A comparison of annual environmental impact was made.
* Figures for CO_2 emissions while being in operation at customer's site was not included in the calculation of the data.
* The imagio MF 6550 RC is only available in Japan for rent.

LCA Information on the imagio MF7070 (Aficio 700) (Type III Environmental Impact Disclosure)*

Input

Environmental Impact Item		Preliminary Process	Manufacturing	Transportation	Use and Maintenance	Recycling and Disposal
Electric power (kWh)		7,730 (MJ)	37.9	0	3,494	13.7
Fossil fuel (MJ)			167	381	2,569	—
Water usage	Tap water (ℓ)	—	3.65	0	0	0
	Industrial water (ℓ)	—	0	0	0	0
	Underground water (ℓ)	—	0	0	2,219	0
Resource input	Principal resource (kg)	—	Metal 116 Plastic and rubber 38.8 Glass 2.2 Others 45.1	0	Copy paper 12,200 Toner 86.7 Photosensitive materials 3.63 Developer 10.0 Maintenance parts 27.9 Others 27.4	0
	PRTR substances (g)	—	58.4	0	1,374	0
	Volatile organic substances (g)	—	0	0	73.6	0

Output

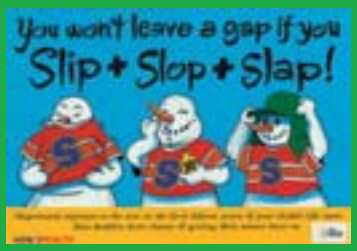
Environmental Impact Item		Preliminary Process	Manufacturing	Transportation	Use and Maintenance	Recycling and Disposal
Emission into air	CO_2 (kg-C) Power consumption/others	250	6.03/3.20	0/7.0	291/45.4	1.11/0
	SO_x (g) Power consumption/others	3,460	10.2/13.3	0/31.5	412/3.63	1.23/0
	NO_x (g) Power consumption/others	711	12.9/8.35	0/79.2	568/20.6	1.78/0
	PRTR substances (g)	—	0	0	1,374	0
	Volatile organic substances (g)	—	0	0	73.6	0
Emission into water	Amount emitted (ℓ)	—	3.65	0	2,219	0
	BOD (g)	6,560	0.255 or less	0	0.31	0
	COD (g)	7,570	0.236 or less	0	—	0
	PRTR substances (g)	—	0.00439	0	0	0
Recycled (kg)		—	0.697	14.9	11.2	177.4
Waste	Incineration (kg)	—	0.0294	0.845	0.864	8.60
	Landfill (kg)	—	0.0008	0	37.9	

* Obtained JEMAI program Ver. 2 certification from the Japan Environmental Management Association for Industry.

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

Environmental Conservation

The natural environment was created over a long span of time as a result of plants, animals, and other living things coexisting. For instance, we are able to live on the earth because submerged aquatic vegetation carries out photosynthesis and discharges oxygen (O_2), which becomes ozone (O_3) in the upper atmosphere, creating a layer covering the whole earth. Before that, living things could not go on dry land because the UV rays from the sun were. It is said that it takes 100 years for the earth's surface to gain one centimeter of soil. Soil covers mountains, stores rainwater, and releases the stored water gradually. Mountains need forests to keep the soil in place, especially after it rains, for instance. The earth, the only planet where living things exist, is constantly developing and maintaining its natural ecosystem. Mankind has long pretended that it had forgotten it was a part of nature. To preserve a better natural environment for future generations, we must develop and recover the natural environment, change our lifestyles and social mechanisms, and restrict environmental impact to a point where the natural environment can recover by itself.



The mascot for a skin cancer prevention campaign. The slogan is "Slip (slip on a shirt), Slop (slop on some sunscreen), and Slap (slap on a hat)." Skin cancer is caused by sunlight directly shining on the earth through a depleted area in the ozone layer above the South Pole.
(The right to use this picture is permitted by The Cancer Council Charity in New South Wales, Australia.)

Results of Environmental Action Plans as of Fiscal 2001

The Ricoh Group established environmental action plans for the fiscal years 1999–2001 and took various approaches to achieve its goals of promoting innovative environmental conservation activities and successfully carrying out sustainable management on a global scale. The results of these efforts are shown below. The environmental action plans that were prepared for fiscal 2002 through fiscal 2004 are described on page 18.

	Goals (FY 1999–2001)
Environmental Management System (EMS) See pages 20–22.	● It is essential for all Ricoh Japanese business sites as well as production sites to acquire ISO14001 certification by September 2000 and for the Ricoh Group as a whole to do so by the end of fiscal 2001 pursuant to standards that take environmental impact and a company's business scope into consideration.
Environmental Management Information System See pages 23, 24.	● Complete an environmental impact information system for copiers, facsimiles, and laser printers by the end of fiscal 2000 (by the end of fiscal 2001 for other product lines)
	● Complete an environmental management information system by the end of fiscal 2000
Resource Conservation and Recycling (Products) See pages 50–55.	● Establish a collection and recycling system for products and supplies (especially toner cartridges), in Japan, Europe, the Americas, China and Taiwan, and the Asia-Pacific region by the end of fiscal 2001
	● Increase the resource recovery rate for copiers, facsimiles, and laser printers, including toner cartridges, to 90% or more by the end of fiscal 2001
Resource Conservation and Recycling (Business Sites) See pages 39, 40.	● Ricoh is to reduce final waste 90%, compared with that in fiscal 1992, by the end of fiscal 2001.
	● Achieve a 100% resource recovery rate (Zero-Waste-to-Landfill) at all production sites in Japan by the end of fiscal 2000
	● Achieve a 70% resource recovery rate at all nonproduction sites in Japan by the end of fiscal 2001
	● Achieve a 100% resource recovery rate (Zero-Waste-to-Landfill) at all production sites outside Japan by the end of fiscal 2001
	● Reduce generated waste at least 4% at all production sites in Japan in fiscal 2001, compared with that in fiscal 2000 (this item added in fiscal 2001)
Energy Conservation (Products) See pages 47–49.	● Reduce energy consumption per product marketed in Japan 30%, compared with that in fiscal 1996, by the end of fiscal 2001
	● Increase the speed of duplex copying and the number of types of recyclable paper that can be used in copiers to promote the efficient use of paper and thus reduce CO_2 emissions during paper manufacturing Achieve 95% duplex copying productivity (duplex copying speed/simplex copying speed) in products that have a duplex copying function and were marketed in fiscal 2001 Enable all imaging technology products marketed in fiscal 2001 to use 100% recycled paper and paper weighing 64 g/m^2
Energy Conservation (Business Sites) See pages 35, 36.	● Ricoh is to reduce CO_2 emissions at least 15% by the end of fiscal 2001 on a per sale basis, compared with those in fiscal 1990. (Production sites other than Ricoh's are to set numeric goals of 15% or more each compared with that of fiscal 1990.)
Pollution Prevention (Products) See pages 32 and 49.	● Reduce the volume of specified chemical substances, such as lead and polyvinyl chloride (PVC), hexavalent chromium at least 50% on a per product basis in all products introduced in fiscal 2001, compared with products introduced in 1997
	● Reduce the level of noise at least 2 dB and emissions of ozone and other by-products at least 20% for all copiers, facsimiles, and laser printers introduced in fiscal 2001, compared with products introduced in 1997
Pollution Prevention (Business Sites) See pages 37, 38.	● All production sites, research centers, and manufacturing subsidiaries of the Ricoh Group are to reduce the use of 'Ricoh Group's target substances for reduction' at least 20% and emissions at least 50% and completely eliminate landfill waste by the end of fiscal 2001, compared with those in fiscal 1997.
	● The Ricoh Group is to completely eliminate the use of trichloroethylene, tetrachloroethylene, chloroform, and dichloromethane (except in the manufacturing of existing photosensitive materials) by the end of fiscal 2001 and to completely eliminate the use of dichloromethane in the manufacturing of existing photosensitive materials by the end of fiscal 2007.

Results (FY 2001 Performance)

(Reviewed by BVQI [3])

- 35 out of 40 bases and 789 out of 794 sites, both in Japan and outside Japan, acquired ISO 14001 certification. The remaining five bases and five sites will be certified by November 2002.

- A system was established to identify and analyze the environmental impact of all production sites in Japan and the impact of major business activities concerning copiers, facsimiles, and printers in Japan. The system was implemented in fiscal 2001 and included Ricoh Asia Industry Ltd. (RAI) and Taiwan Ricoh Co., Ltd. In fiscal 2002, the Ricoh Group will merge its environmental impact information system and environmental accounting information system into an environmental management information system.

- The establishment of a cost accumulation system was completed in fiscal 1999. The cost accumulation system has been in operation at Ricoh from the second half of fiscal 1999.
- All systems designated for completion (i.e., databases on environmental laws and their revisions, product recycling/energy conservation measures, external queries, World Wide Web inquiries, and the kinds of waste generated at business sites as well as information from environmental label forums, environmental forums for sales companies and divisions, and the CO_2 Forum) were established by fiscal 2000.

- **Product Collection and Resource Recovery System**
  Nationwide networks of collection and recycling centers for used products are completed in Japan.
  In Europe, the Americas, China and Taiwan, and the Asia-Pacific region, collection and resource recovery systems are almost completed.
  Toner Cartridge Collection and Resource Recovery System
  In Japan, collection networks are almost completed. In Europe, the Americas, China and Taiwan, and the Asia-Pacific region, collection systems are almost completed, and resource recovery systems have, with the exception of some countries, already started.

- All of Japan, Europe, the Americas, China and Taiwan, and the Asia-Pacific region achieved the goal of at least 90% resourse recovery rate.

- Final waste was reduced by 99.6%, surpassing the goal in fiscal 2001.

- Surpassed the Zero-Waste-to-Landfill goal by the end of fiscal 2000 and maintained that level in fiscal 2001

- Achieved a 98.1% resource recovery rate at nonproduction sites in fiscal 2001, surpassing the goal in fiscal 2001; five business sites (Ricoh Aoyama Office, Ginza Office, Shinagawa System Center, Toda Technical Center, and Shin-Yokohama Office) achieved Zero-Waste-to-Landfill.

- All production sites outside Japan (Ricoh Industrie France S.A., Ricoh Electronics Inc., Ricoh UK Products Ltd., Ricoh Asia Industry (Shenzhen) Ltd., and Taiwan Ricoh Co., Ltd.) achieved Zero-Waste-to-Landfill by the end of fiscal 2001.

- Reduced generated waste by 9%, surpassing the goal in fiscal 2001

- Energy consumption of black-and-white copiers and multifunctional copiers was reduced by 53.2%, surpassing the goal in fiscal 2001.
- Energy consumption of color copiers and multifunctional copiers was reduced by 48.34%, surpassing the goal in fiscal 2001.
- Energy consumption of facsimiles was reduced by 89.55%, surpassing the goal in fiscal 2001.
- Energy consumption of black-and-white and color printers was reduced by 47.37%, surpassing the goal in fiscal 2001.

- Achieved a duplex copying productivity of 97%–100% in black-and-white copiers and multifunctional copiers as well as black-and-white laser printers marketed in fiscal 2001
- Enabled the use of paper with a thickness of up to 64 g/m^2 in products marketed in fiscal 2001
- Enabled the use of 100% recycled paper in products marketed in fiscal 2001

- Ricoh reduced CO_2 emissions by 24.1%, surpassing the goal in fiscal 2001. Seven manufacturing subsidiaries in Japan reduced CO_2 emissions by 20.9%–57.4%, surpassing the goal in fiscal 2001. Among five manufacturing subsidiaries outside Japan, four achieved a 23.1%–32.2% reduction in CO_2 emissions, reaching the goal. One had an 8.5% increase and, therefore, did not achieve the goal. (The average total reduction in CO_2 emissions by all manufacturing subsidiaries outside Japan was 31.6%.)

- For products marketed in fiscal 2001, the volume of lead, polyvinyl chloride (PVC), and hexavalent chromium was reduced by 47%, 47%, and 58%, respectively. The Ricoh Group continues its efforts in reduction and strives to completely eliminate specified chemical substances for products to be marketed from fiscal 2004 onward.

- The level of noise emitted during operation and while on standby was reduced by 3.3 dB and 2.7dB, respectively, surpassing the goal for products marketed in fiscal 2001. Also, the goal of reducing ozone by 70% and dust by 29%, respectively, was surpassed.*

  * Calculations are based on the weighted number of copiers, facsimiles, and printers sold and use a copying productivity of 50 sheets per minute for all machines.

- Reduced the use of 'Ricoh Group's target substances for reduction' 46.6% and emissions 58.2%, surpassing the goal in fiscal 2001

- Completely eliminated the use of trichloroethylene, tetrachloroethylene, and chloroform worldwide. Also, completely eliminated the use of dichloromethane (except in the manufacturing of existing photosensitive materials). Continuous efforts are made to completely eliminate the use of dichloromethane in the manufacturing of existing photosensitive materials by the end of fiscal 2004, which is earlier than the original deadline.

Research and Development

To facilitate sustainable management, Ricoh strives to promote environmental technology. As a part of these efforts, the Company established a new laboratory—the Environmental Technology R&D Center.

In order to have effective sustainable management and reduce society's impact on the environment as a whole, we must develop outstanding environmental conservation technologies, apply them to our products, and supply them to our customers. With this in mind, Ricoh has developed its own unique energy saving technology, applied it to the Aficio 1035/1045 (imagio Neo 350/450) series*, and marketed in fiscal 2000. In fiscal 2001, Ricoh promoted its product platform and module design and refined its recyclable designs in an effort to improve profitability in the recycling business. Also, the Company engaged in developing products that encourage customers to reduce paper consumption. In April 2002, Ricoh established the Environmental Technology R&D Center to enhance its environmental technology skills. At the center, relevant data and information from past activities, including those concerning energy saving and resource conservation, are compiled for use in developing more profitable environmental technologies.

*See pages 47–48.

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

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

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

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

■ Product Development, Manufacturing, and Recycling

A decrease in the number of parts will help reduce costs, mechanical failure, and environmental impact and improve customer satisfaction. It will also help in the more-efficient reuse and recycling of used products. The Ricoh Group manufactures products based on the 3R concept of reduce, reuse, and recycle, taking the following into consideration: environmental technology, capital investment, marketing, after-sales service, and recycling.

Product Platform and Module Design

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

Recyclable Design

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

Provisions for Recyclable Designs

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

Recyclable Design Policy

● Level 1 (1993)
- The use of insert molding prohibited
- The number of parts and screws to be removed when changing main components set
- The use of E-rings prohibited
- The adhesion of resin materials to different materials prohibited
- The amount of packaging reduced
- The use of heat calking prohibited
- The use of toxic chemical substances prohibited
- Grading for outer packaging set (New)
- Indicating material grades on labels made mandatory (New)

● Level 2 (1994)
- Grades reorganized pursuant to the completion of the Comet Circle concept
- Provisions for reusable designs extended
- The use of resin that contains chlorine prohibited (dioxin prevention)
- The reduction in the number of parts and screws to be removed when changing main components

● Level 3 (1996)
- New provisions for recycling supplies added
- New provisions for harness layouts added
- New provisions for the restricted use of nitrous resin added
- The use of nylon clamps restricted
- Articles revised, taking economic benefits into consideration

● Level 4 (1999)
- Appropriate design items for process cartridges added
- New provisions for recyclable printed circuit board designs added
- The number of screw types reduced
- The use of nonhalogenous, fire-retardant resin introduced
- Overall set values for acceptable change in speed when machine is jarred revised

● Level 5 (2001)
- New provisions for the reuse of general parts added
- The use of electronic counters prohibited, and the mounting of nonelectronic counters made mandatory
- Regulation on environmentally sensitive substances (e.g., batteries, hexavalent chromium, and lead) tightened
- Polyethylene terephthalate added to materials used in making toner bottles
- New provisions for logos added to the Container Packaging Recycle Law

Recycling of Plastic Parts

In 1994, Ricoh began indicating the exact type and grade of materials used in each part according to the Company's recyclable design policy in order to improve recycling quality. Plastic parts removed from collected products are sorted, graded, and crushed. They are then mixed with virgin plastic to be reused in Ricoh product parts. Ricoh's recovered plastic parts contain a relatively high rate of collected plastic—up to 30%. The average amount of recovered plastic in any given part is 20%–25%.
In fiscal 2001, an Eco Mark for printers was established. Eighteen types of IPSiO laser printers, including those already on the market, were awarded the Eco Mark mainly because of the recovered plastic parts used in them*.

* See pages 41–42.

■ Efficient Paper Use

The Eco Balance evaluation[1] revealed that the largest environmental impact during the entire product life cycle assessment (LCA) was caused by the copy paper while the machine is running at customers sites. In addition to developing new products and technologies, Ricoh provides products[2] that encourage efficient paper use.

1. See page 25.
2. See page 49.

Rewritable Printers and Paper

According to a survey, 70% of the paper used in offices will never be used again, which means only 30% is stored after being printed on. Ricoh, making the most of its exceptional thermal paper technology, developed a rewritable printer and paper that can be reused more than 200 times. The rewritable paper is very similar in texture to ordinary paper and can be written on using an exclusively developed red-colored pen.

A rewritable printer and paper

■ Reducing Environmentally Sensitive Substances

To reduce the amount of environmentally sensitive substances in products, the Ricoh Group worked together with suppliers in adopting lead-free solder, reducing the use of PVC-coated wires, and reducing the use of hexavalent chromium in steel plates. Environmentally sensitive substances do not affect the environment when customers use them properly, but they may harm when they are mined or improperly disposed of. This is an important issue in recyclable designs as well because such substances may limit the recovery and recycling of used products. Reducing the use of these substances will ultimately lessen recycling costs as well as the environmental impact a product has during its life cycle. Ricoh has taken on these challenges as part of its environmental management activities. The Aficio 1027 (imagio Neo 220/270), marketed in June 2001, reduced the use of lead in printed circuit boards, PVC-coated wires, and chromium-contained galvanized steel plates. Those products are highly evaluated in the Green Purchasing Network (GPN)* database in Japan.

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

Lead-Free Solder

More than 400 types of copiers[1] are listed in the copier division of the GPN database. Fourteen products, 13 of which are from Ricoh, are rated A[2] under the "lead contained in solder" item.

1. As of March 29, 2002
2. There are four rating categories for solder used in joining printed circuit boards to other parts of the copiers, namely, AA (100% lead-free solder), A (lead content reduced at least 50%), B (lead content reduced at least 10%), and C (lead content reduced less than 10%). There are no products marketed in Japan that are rated AA.

Reducing the Use of PVC-Coated Wires

There are five copiers listed[1] in the GPN database that are rated II[2] for the PVC used to cover their wires; all five are manufactured by Ricoh. Of the five copiers, the imagio Neo 600 and 750 were the first to be given a II rating for using nonhalogenous wiring cords. There are 21 products that are rated III, 8 of which are from Ricoh.

1. There are four rating categories for PVC-coated wires used in copiers, namely, I (100% PVC-free coating), II (coating that uses at least 50% substitute materials), III (coating that uses at least 10% substitute materials), IV (coating that uses less than 10% substitute materials). There are no products marketed in Japan that are rated I.
2. As of March 29, 2002

Reducing the Use of Hexavalent Chromium in Steel Plates

The Ricoh Group is making further efforts to reduce the use of hexavalent chromium in steel plates. The Aficio 1013/RICOH FAX 3310L series, which are marketed in Europe and the United States, use only hexavalent-chromium-free steel plates*.

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

Reducing Environmentally Harmful Substances Contained in Office Equipment (As of March 29, 2002)

	GPN database rating		Hexavalent-chromium-free steel plates
	Lead contained in solder	PVC used to cover wires	
imagio Neo 220/270 (Aficio 1027)	A	III	90% min.
imagio Neo 600/750	A	II	85% min.
IPSiO NX730N/630N/630 (Aficio AP2610/2610N)	C	IV	90% min.
Aficio 1013/RICOH FAX 3310L series*	–	–	100%

*The Aficio 1013 and RICOH FAX 3310L series are not listed in the GPN database because they are not marketed in Japan.

Reducing Environmentally Harmful Substances Contained in Personal Equipment

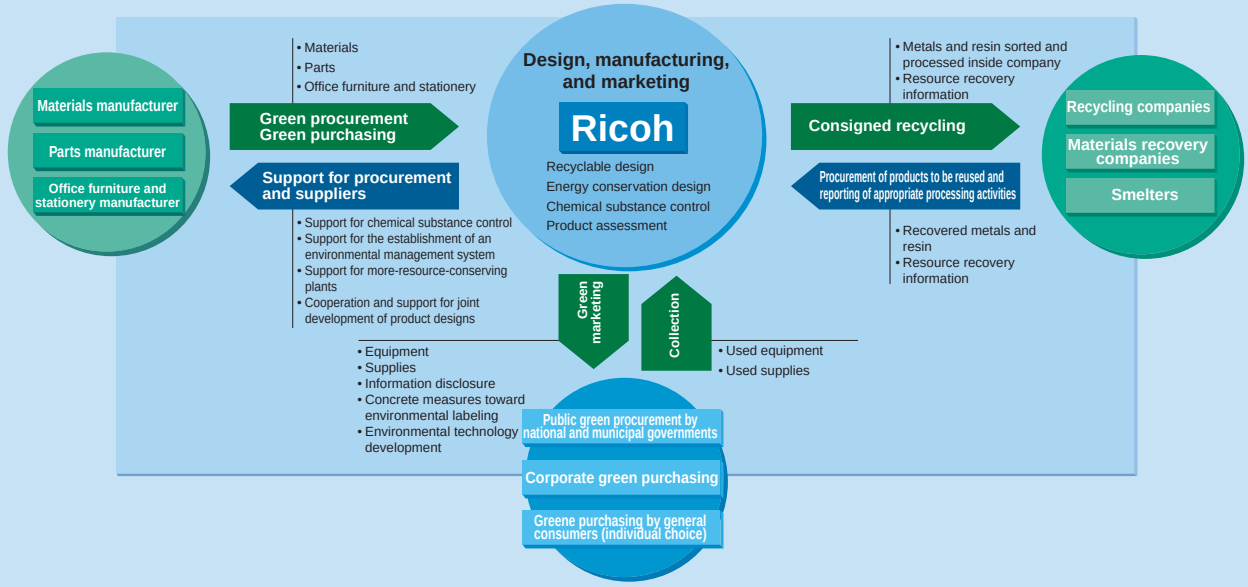
RDC-i500 (digital camera)	• Reduces PVC 80% against that of fiscal 1998 as well as partially lead-free contained in solder
MP-9200A (disk drive)	• Reduces hexavalent chromium approximately 70% and PVC almost 50% compared to fiscal 1999 values. • The first Ricoh disk drive to use hexavalent-chromium-free steel plates

Procurement

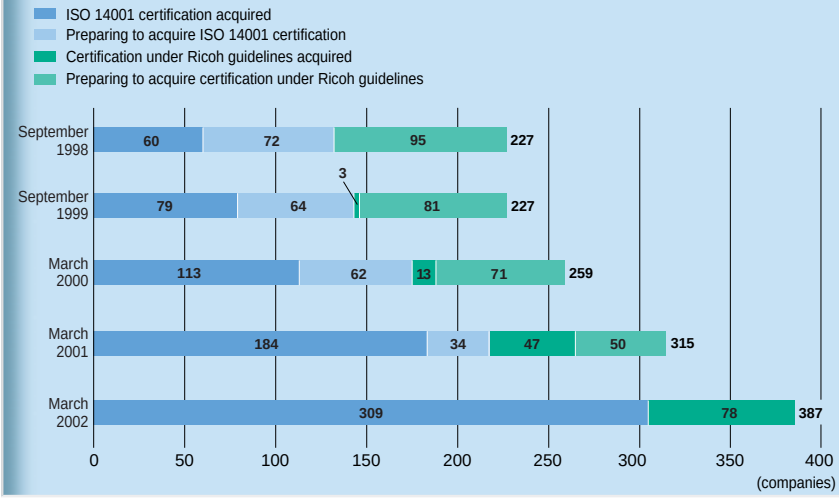
Support by Ricoh to strengthen management quality of the supplier is essential for the promotion of green procurement activities.

Establishing a partnership with suppliers, who are upstream in the manufacturing process of copiers and printers, is indispensable in realizing sustainable management. The Ricoh Group understands that supporting suppliers is a due responsibility that corporations should carry out. The Ricoh Group manufacturing in Japan, the Americas, Europe, and China and Taiwan supports its suppliers in improving their business operations and product quality. To develop its green procurement activities globally, the Ricoh Group encourages its suppliers to establish an environmental management system (EMS) and review their businesses so that they may become more environment conscious. Such a review will be effective in reducing environmental impact and costs, improve the workplace, and encourage suppliers to better themselves and their sustainable management.

Green Partnership—The Ricoh Group Regards All Suppliers, Customers, and Recycling Companies as Green Partners in Reducing Environmental Impact and Costs.



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

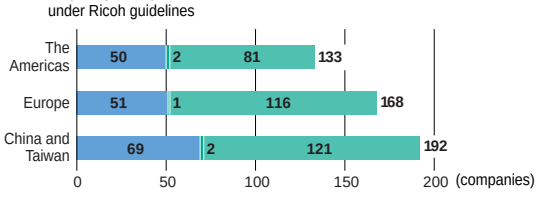


Definition of Ricoh Group Green Purchasing

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

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

As of March 2002



Japan

Green Procurement Meeting

In 2001, all Ricoh Group suppliers in Japan established an EMS based on ISO 14001 and Ricoh Group's guidelines. In January 2002, the 1st Ricoh Green Procurement Meeting was held. At the meeting, further cooperation was requested for reducing environmental impact throughout all the processes, from development and design to recycling. Approximately 300 top management and business representatives from 260 leading suppliers participated in the meeting, three of whom reported on the environmental technologies with which they reduced environmental impact.

The 1st Green Procurement Meeting in a hall at the Omori Office, Tokyo

Green Procurement of Office Consumables and Supplies

Ricoh drafted a "green procurement list" for office automation (OA) equipment, office supplies, stationery, sales promotion giveaways, and gifts. The Company promotes efficient green procurement activities with the use of a computerized ordering system. This system is utilized at eight of Ricoh's nonproduction sites and seven of its production sites. About 80% of the office consumables purchased are procured in this fashion. Ricoh Unitechno Co., Ltd., established a Green Supplies section that is connected online to suppliers. Ricoh Unitechno's inventory is automatically checked and restocked when needed, thereby eliminating the need to fill out order forms that waste paper.

China and Taiwan

Starting Green Procurement

In August 2001, the Ricoh Group gave a briefing session on green procurement in China. The Group asked the suppliers of Ricoh Asia Industry (Shenzhen) Ltd. (RAI) and Shanghai Ricoh Facsimile Co., Ltd., (SRF) to establish their own EMS by the end of fiscal 2003 and said that they would support them. Proite Yanzhou Industry Co., Ltd. and Rubbertek Industrial (Wujiang) Co., Ltd., who were in charge of procurement for SRF suppliers, said that they consider environmental conservation as inevitable and that it was an extremely valuable opportunity for them to receive support from the Ricoh Group in establishing an EMS.

A briefing session on green procurement at RAI

A briefing session on green procurement at SRF

RAI and Wah Yip

Wah Yip Pallet Mfg. Ltd., located in Dong Guan, Guangdong Province, has about 250 employees who manufacture wooden pallets, which are indispensable in transporting and storing Ricoh products. The partnership between RAI and Wah Yip had begun before the start of the green procurement scheme. In April 2000, responding to RAI's request to reduce environmental impact and costs Wah Yip proposed the development of pallets made of recycled plywood. Subsequently, Wah Yip received orders for recycled plywood pallets from other companies, and at present, the total amount of pallets being produced that are made of recycled plywood or other materials has reached 10,000 units per month, accounting for 60% of total production. The biggest factor that improved Wah Yip's quality was its quick and positive participation in environmental conservation activities.

Also in Shenzhen, demands for ISO 14001 certification are growing among the industries. In March 2002, Wah Yip was in strict adherence to the Ricoh Group's guidelines for green procurement and was awarded ISO 14001 certification.

The green procurement staff from Wah Yip and RAI

Taiwan Ricoh

Taiwan Ricoh Co., Ltd., announced that it will take part in green procurement activities and support suppliers upon request. Also in Taiwan, a higher awareness of environmental conservation is growing among the industries. In March 2002, 21 out of 76 leading suppliers were awarded ISO 14001 certification.

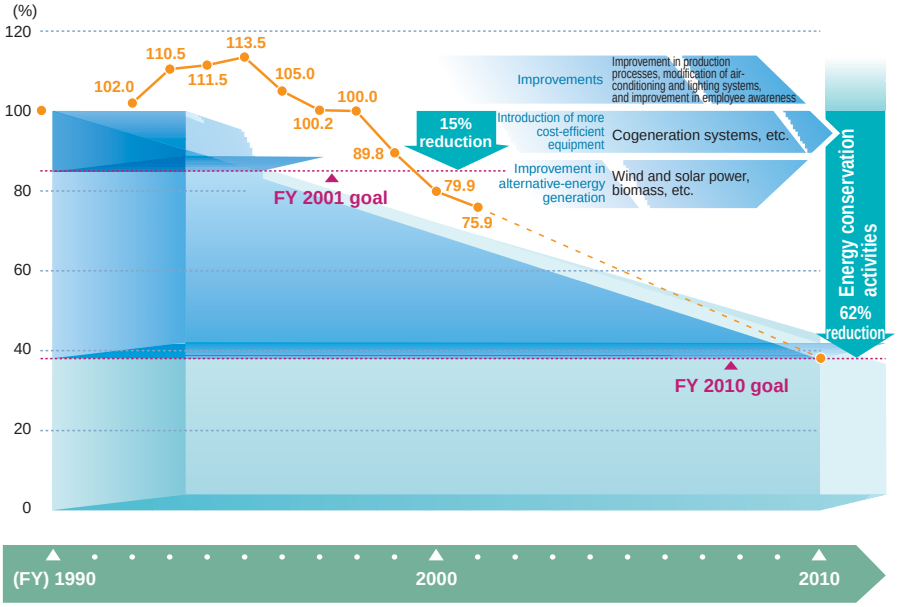
Production (Preventing Global Warming)

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

In July 2001, Ricoh joined e-mission 55, a signature-collecting campaign that was conducted by companies supporting the Kyoto Protocol. Ricoh was the first leading manufacturer in Japan to sign and make a commitment for the environment. Ricoh is committed to reduce CO_2 emissions 13% from the 1990 level by 2010. In fiscal 2001, Ricoh achieved a 13.8% reduction in total CO_2 emissions from the 1990 level, while Japan itself reduced 12.6%. For the purpose of restricting total CO_2 emissions despite increased production, Ricoh makes further, continuous efforts to tackle the prevention of global warming by reducing total CO_2 emissions per sales unit as a target in fiscal 2010 62% from the 1990 level. Other efforts to be made include a 10% reduction of greenhouse gases other than CO_2 by fiscal 2010 from the 1995 level.

* The Ricoh Group uses greenhouse gases other than CO_2 (i.e., methane, carbon monoxide, HFC, PFC, and SF_6) at its production sites. By fiscal 2004, more products that use these gases are expected to be manufactured, but total emissions will be limited to within a 1% increase from fiscal year 2000 level.

Scenario of Ricoh's Reduction in CO_2 Emissions up to FY 2010 (Reviewed by BVQI [4])



Ricoh is aiming at a 13% reduction in total CO_2 emissions from its production and nonproduction sites from the 1990 level by 2010. Converted into CO_2 emissions per sales unit and taking business expansion into consideration, this reduction is calculated to be 62%. (This is a revision of the target value set in fiscal 1998, i.e., 56%.) The fiscal 2001 goal was a 15% reduction, but Ricoh achieved a 24.1% reduction in that term. In calculating CO_2 emissions per sales unit, a CO_2 emission coefficient set in the environmental assessment program issued in 1996 by the Environment Agency is used.

Changes in Ricoh's Energy Consumption

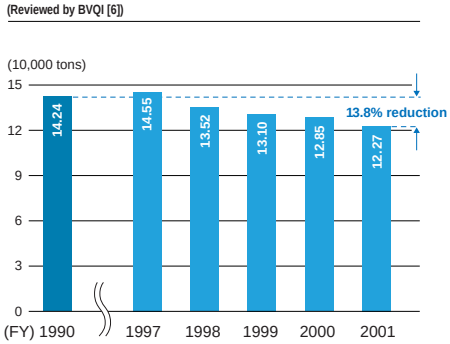
(Reviewed by BVQI [5])

	Fiscal 1997	Fiscal 1998	Fiscal 1999	Fiscal 2000	Fiscal 2001
Kerosene (kℓ)	11,224	11,056	10,054	7,811	6,624
Heavy oil A (kℓ)	4,948	3,763	205	171	183
Town gas (1,000 m^3)	4,027	4,318	8,474	11,958	11,809
Electric power purchased (1,000 kWh)	257,821	247,224	240,883	228,935	222,169

Energy Consumption in Japan

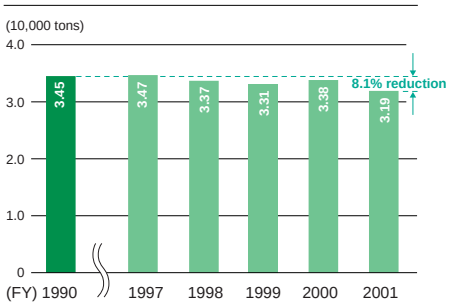
Ricoh's Energy Consumption (CO_2 conversion[1])

(Reviewed by BVQI [6])



Energy Consumption at Production Sites[2] in Japan Other than Ricoh's (CO_2 conversion[1])

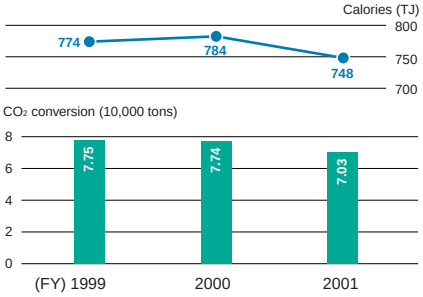
(Reviewed by BVQI [7])



Energy Consumption in the Americas, Europe, and China and Taiwan

Energy Consumption at Production Sites (CO_2 conversion* and calories)

(Reviewed by BVQI [8])



1. Calculated using a CO_2 emissions coefficient taken from an examination on greenhouse gas emission calculations issued by the Ministry of the Environment
2. From fiscal 2000 and thereafter, more data have been collected from Ricoh Unitechno Co., Ltd., and Ricoh Elemex Co., Ltd. The figures are different from those listed in the *Ricoh Group Sustainability Report 2001*.

* Calculations were made based on the CO_2 conversion coefficients of the countries in each region. There is no production site in the Asia-Pacific region.

Japan

Installation of Energy-Saving Equipment

To update the air-conditioning systems at its manufacturing plants, Ricoh Microelectronics Co., Ltd., conducted segment environmental accounting to compare an ice thermal storage/chilled water system with an absorption-type chilled/hot water generation system and determine which is better for environmental conservation and cost reduction. From its results, Ricoh Microelectronics decided to introduce the ice thermal storage/chilled water system because, although the initial cost of the system was ¥34.45 million more than that of the absorption-type system, it would reduce running cost by 30% and CO_2 emissions by 60%.

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

Costs			Effects				EI value (t/100 million yen)
			Economic benefits		Effect on environmental conservation		
Item	Main costs	Amount	Item	Amount reduced	Item	Amount reduced	
Business area costs	Investment	34.45 (millions of yen) (Difference from the conventional method)	Heat and light expenses	146 (millions of yen)	CO_2 emission	15,015 (t)	8,884.6*

Effects are calculated using the statutory depreciation period for equipment.
* Calculated from total investment (¥169 million)

The Americas

Reducing Electricity Consumption by Half

When the cost of electricity rose from 7 cents/kWh to 12 cents/kWh in California, Ricoh Electronics, Inc., (REI) in the United States began to systematically promote energy conservation activities by identifying which locations used the most electricity. It accomplished this by examining the electricity bills of all relevant facilities.

REI identified 78 problems that were associated with electricity consumption. Sixty of them were solved by installing smaller air compressors and relocating air conditioner switches so that the air conditioners can be turned on or off as frequently as needed. As a result, REI successfully reduced its electricity consumption by half, cutting its electricity bills by $26,195 in three months.

China and Taiwan

Zero-Electric-Power-Consumption Production Line

Ricoh Asia Industry Ltd. (RAI) in China accepts ideas from employees from time to time on how to reduce energy consumption. Some of the improvements that resulted from this include the introduction of a manually-moving production line, which improves work efficiency and aims at eliminating electricity consumption.

Manually operated production line for printers (RAI)

Cell Production

Smaller production lots are more suitable for cell production, which is assembled by a single person from start to finish.

One idea from an employee led to “a revolving table production system” at Ricoh Component (H.K.) Ltd., in China. Each product is fully assembled with one complete turn of the table. The number of products manufactured is automatically calculated by a counter set under the table. This is also a Zero-Electric-Power-Consumption system.

Revolving table production system
(Ricoh Component (H.K.) Ltd.)

Hybrid Production Line

Taiwan Ricoh Co., Ltd., integrated its automated main production line and manual subline into a hybrid production line. This improved the line’s production efficiency, ease of operation, and energy consumption and reduced the amount of workspace needed.

Hybrid production line (Taiwan Ricoh)

Production (Pollution Prevention)

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

The Ricoh Group established the Ricoh Environmental and Chemical Safety Information System (RECSIS), which categorizes substances that fall under Japan's Pollutant Release and Transfer Register (PRTR*) Law as well as substances that are regulated in other parts of the world according to whether they are to be prohibited, reduced, or controlled. In line with its self-regulation policies, which are more severe than those set by most countries, the Ricoh Group endeavors to control as well as reduce the amount of chemicals used and emitted. By fiscal 2004, the entire Ricoh Group is to reduce such ozone depleting substances 60% compared to fiscal 2000 levels. The Group succeeded in eliminating the use of chloric organic solvents except dichloromethane, which is used in manufacturing photosensitive materials, by the end of fiscal 2001. The Group is to eliminate the use of dichloromethane by fiscal 2004. The Group is striving to establish a system that will provide answers to inquiries from customers, original equipment manufacturers (OEMs), and civil organizations regarding their usage of chemical substances.

* Under the PRTR system, the release of potentially harmful environmental pollutants into the air, water, and soil; product contents; and the transfer of waste are assessed by business, among other criteria. The results are totaled and released by an independent organization. Member countries of the Organization for Economic Cooperation and Development (OECD), such as the United States, Canada, the U.K., the Netherlands, and Japan, have adopted this system. The PRTR Law in Japan was based on this system.

In fiscal 1997, Ricoh participated in the PRTR system that Keidanren (the Federation of Economic Organizations) independently started prior to its legislation by giving a summary of the PRTR data of all Ricoh business sites. We started to supply the PRTR data of all Ricoh Group companies in fiscal 1998 and began reducing the consumption and emission of PRTR substances in 1999.

Survey Results of PRTR Substances in the Ricoh Group in Fiscal 2001[1] (Reviewed by BVQI [9])

(tons/year)

Substance No.	Substance*	Environmental impact coefficient[3]	Amount	Amount emitted into air	Amount discharged into public water supply	Amount transported into sewers	Amount transported out of plants	Amount consumed	Amount treated[4]	Amount recycled
1	Zinc chloride[2]	10	36.9	—	—	—	—	35.0	—	1.9
25	Antimony trioxide[2]	100	11.1	—	—	—	0.2	10.4	—	0.5
29	4, 4-isopropylidenediphenol	1	9.6	—	—	—	—	9.0	—	0.6
43	Ethylene glycol	1	322.4	2.4	0.0	—	—	289.5	1.9	28.6
45	Ethylene glycol monomethyl ether	1	3.9	0.0	—	—	—	1.3	—	2.2
63	Xylene	10	13.2	11.8	—	—	0.1	0.0	0.1	1.2
65	Glyoxal	10	13.6	0.0	0.0	—	—	10.3	—	3.3
101	2-ethoxyethyl acetate	100	1.6	0.3	—	—	0.8	0.0	—	0.5
134	1,3-dichloro-2-propanol	100	8.7	8.6	0.1	—	—	—	—	—
145	Dichloromethane	100	104.3	76.5	—	—	—	6.8	—	21.1
172	N, N-dimethylformamide	100	28.9	2.2	—	—	—	—	—	26.7
181	Thiourea	1	32.1	—	—	—	—	31.1	—	1.0
200	Tetrachloroethylene	100	4.5	0.1	—	—	—	—	—	4.4
227	Toluene	10	1,225.4	272.1	—	—	1.8	93.1	344.4	514.0
230	Lead	100	11.6	—	—	—	0.0	7.2	—	4.5
232	Nickel sulfate[2]	100	5.0	—	—	—	—	2.9	—	2.1
243	Barium sulfate[2]	1	2.7	—	—	—	0.1	2.5	—	0.1

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

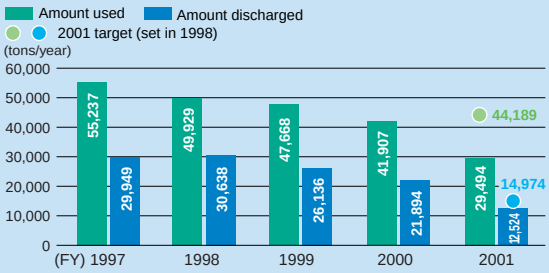
1. Pursuant to the PRTR Law
2. The amount of metallic compounds is converted into metal.
3. The environmental impact coefficient is set by Ricoh, taking toxicity, carcinogenicity, and the possibility of ozone depletion into consideration.
4. Amount treated into non-PRTR substances, i.e. thermal decomposition, catalic decomposition, etc.

The amount of Ricoh Group's target substances for reduction used and discharged is calculated using the following formula.

Amount used = Σ {(amount - amount consumed) × environmental impact coefficient}

Amount discharged = Σ {(amount emitted into air + amount discharged into public water supply + amount discharged into soil) × environmental impact coefficient}

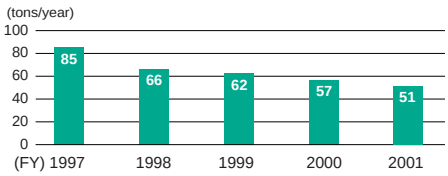
Changes in the Amount of Ricoh Group's Target Substances for Reduction* Used and Discharged (Reviewed by BVQI [10])



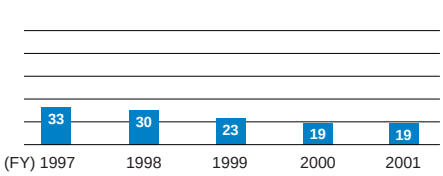
* Ricoh Group's target substances for reduction are defined as the PRTR substances designated by four Electric/Electronic Industrial Associations in Japan between fiscal 1998 and fiscal 2000. Coverage chemical substances by Ricoh may differ slightly from those provided by the PRTR Law.

Changes in the Amount of Substances Discharged Following the Ricoh Group's Implementation of Pollution Prevention Measures (Reviewed by BVQI [11])

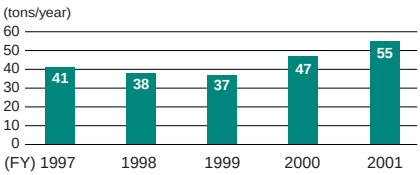
Air (NO*x*)



Air (SO*x*)

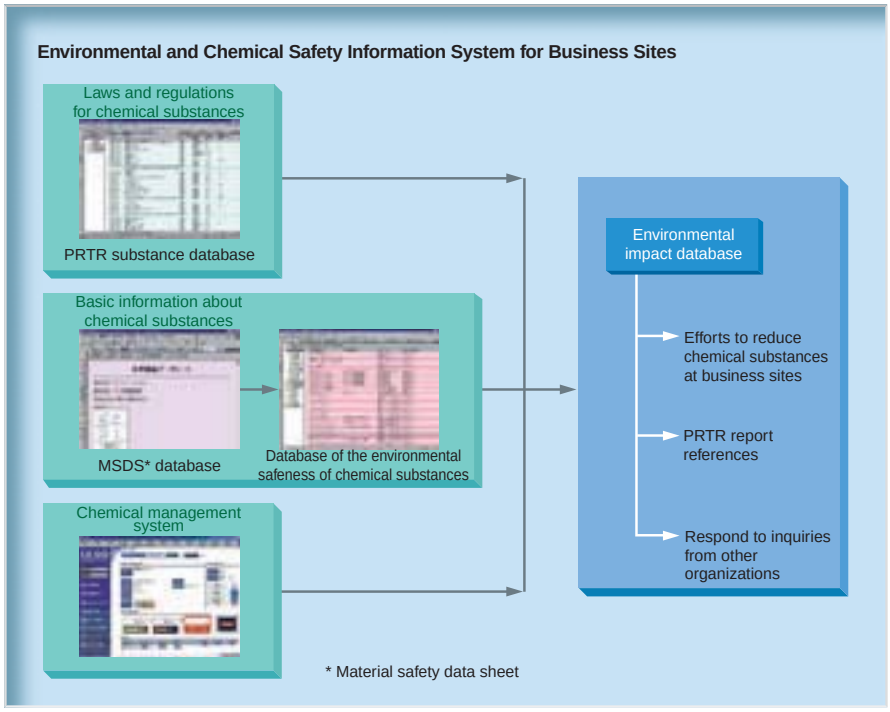


Water (BOD)



Ricoh Environmental and Chemical Safety Information System (RECSIS)

There are many substances that, while useful in a product's manufacturing process, have undesirable effects on the environment. The use of these substances needs to be controlled so that they can be properly disposed of, collected, or phased out. The Ricoh Group established RECSIS as a part of its environmental impact information system to manage manufacturing processes and monitor data on chemical substances used, discharged, and disposed of at business sites. RECISIS contains data on more than 2,000 types of listed chemical substances, environmental hazards, and emergency procedures. RECSIS facilitates the preparation of documents required for application pursuant to the PRTR Law, which started in 2001.



Soil Contamination Surveys and Improvements

All Japanese production and research and development sites of the Ricoh Group conducted surveys to detect the presence of chloric organic solvents in soil and underground water and reported their findings to relevant local governments. The sites that needed improvement conducted more detailed surveys and cleanup activities. As a result, there were no problems in the surrounding areas of any site. Heavy metal pollution surveys started in fiscal 2001.

Response to Chloric Organic Solvent Pollution in Soil and Underground Water* (Reviewed by BVQI [12])
* No pollution was discovered near the vicinity of the business sites listed below.

	History of the use of relevant substances	Current status
Gotemba Plant	—	—
Fukui Plant	—	—
Yashiro Plant	—	—
Ikeda Plant	◯	No pollution
Atsugi Plant	◯	No pollution
Research and Development Center	◯	No pollution
General Electronics R&D Center	◯	No pollution
Hatano Plant	◯	Cleaning completed
Numazu Plant, South Plant	◯	Cleaning completed
Numazu Plant, North Plant	◯	Cleaning completed
Omori Office	◯	Cleaning underway
Ricoh Unitechno	—	—
Ricoh Microelectronics	◯	No pollution
Ricoh Optical Industries	◯	Cleaning completed
Hasama Ricoh	◯	Cleaning completed
Tohoku Ricoh	◯	Cleaning underway
Ricoh Elemex, Okazaki Plant	◯	Cleaning underway
Ricoh Elemex, Ena Plant	◯	Cleaning underway
Ricoh Keiki	◯	Cleaning underway

◯ = Used — = Not used

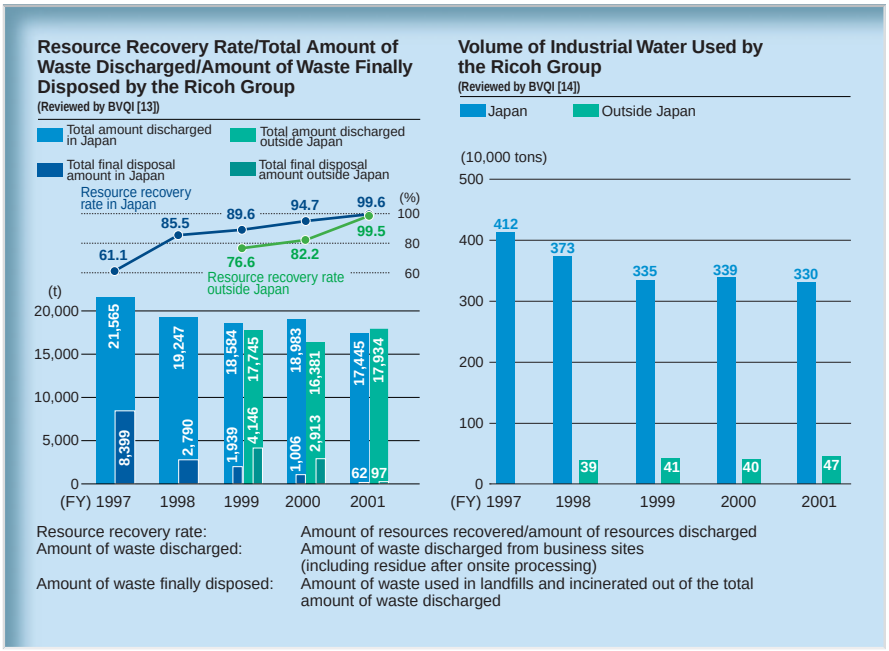
No pollution: No pollution exceeding environmental standards was detected inside or outside the business site.
Cleaning completed: Pollution exceeding environmental standards was detected, and the site was cleaned.
Cleaning underway: Pollution exceeding environmental standards was detected, and the site is being cleaned. However, the areas surrounding the business site were not affected.

Production (Zero-Waste-to-Landfill)

The Ricoh Group achieved the goal of Zero-Waste-to-Landfill at all production sites all around the world.

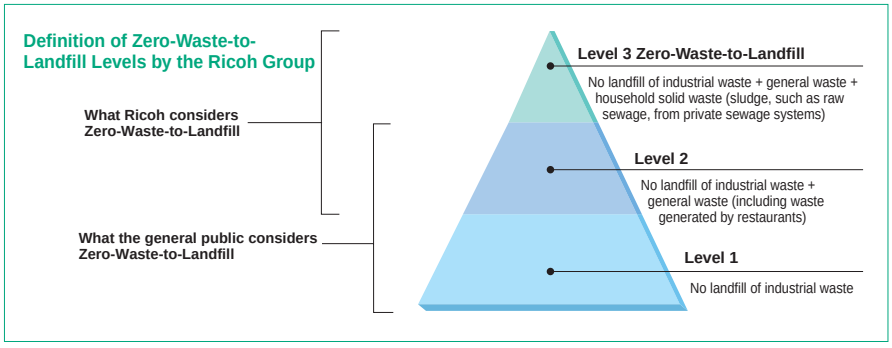
The Ricoh Group promotes Zero-Waste-to-Landfill activities as a part of its environmental management system by efficiently using resources, improving the efficiency of production lines, reducing waste disposal costs, and improving corporate quality by promoting employee awareness of environmental conservation. Ricoh UK Products Ltd. in the U.K. achieved Zero-Waste-to-Landfill in September 2001, and Ricoh Asia Industry Ltd. (RAI) in China and Taiwan Ricoh Co., Ltd.[1], achieved it in March 2002. With this, the Ricoh Group has achieved Zero-Waste-to-Landfill at all production sites[2] in Japan, the Americas, Europe, and China and Taiwan. In Ricoh in Japan, after the Aoyama Office in Tokyo achieved Zero-Waste-to-Landfill in fiscal 2000, Ricoh Shinagawa System Center, Ginza Office, Toda Technical Center, and the Shin-Yokohama Office did the same in fiscal 2001, as did 46 sites of Ricoh Group service companies[3] and two sites of sales companies[4]. In fiscal 2002, the Ricoh Group will continue its efforts to reduce the environmental impact of society as a whole and will further promote sustainable management by applying its Zero-Waste-to-Landfill know-how.

1. There is no infrastructure in Taiwan for the recovery of coating sludge, which is excluded from the Zero-Waste- to-Landfill efforts. (Coating sludge is subject to isolated landfill by disposal companies officially designated.)
2. Ricoh's production sites in Japan and manufacturing subsidiaries in Japan, the Americas, Europe, and China and Taiwan in which Ricoh owns more than 50% voting rights are included. There are no manufacturing subsidiaries in the Asia-Pacific region.



Zero-Waste-to-Landfill by the Ricoh Group

The Ricoh Group classifies zero waste (100% resource recovery rate and no waste used as landfill) into three levels. Although zero waste is roughly defined as no industrial waste being generated (level 1), the Ricoh Group aims at also eliminating general waste (level 2) and household solid waste, such as sludge (e.g., raw sewage), from private sewage systems (level 3). We regard cases in which waste is not utilized as an energy resource and simply incinerated as just a disposal of waste. The Ricoh Group aims at achieving perfect resource recycling by reducing, reusing, and recycling resources as well as the thermal recovery of waste.



Staff assigned to the Zero-Waste-to-Landfill campaign at REI, Georgia Plant, in the United States and the campaign mascot, Zero Hero; REI achieved Zero-Waste-to-Landfill in March 2001.

Staff assigned to the Zero-Waste-to-Landfill campaign at Ricoh Industrial de Mexico (RIM) in Mexico; RIM achieved Zero-Waste-to-Landfill in March 2001.

Japan

100% Resource Recovery of Used Products

Ricoh Elemex Corporation, which manufactures office equipment, clocks, watches, and water and gas meters manufacturer, worked detailed disassembly and sorting of used water meters and achieved a 100% resource recovery rate. Ricoh Elemex is making continuous efforts to achieve more-advanced resource recovery while working on recyclable designs for gas meters.

Environmental Accounting of the Semiconductor-Manufacturing Yashiro Plant

In fiscal 2001, the Yashiro Plant introduced an inverter control system and a system that recycles the hydrofluoric acid used in the etching process of semiconductors. The segment environmental accounting shown below reveals that these systems significantly contributed to environmental conservation and cost reduction.

Estimated Costs and Effects of Semiconductor Manufacturing at the Yashiro Plant in Environmental Conservation (Segment Environmental Accounting) (Unit: millions of yen)

Method of conserving energy or resources	Costs		Effects*				EI value (t/100 million yen)
			Economic benefit		Effect on environmental conservation		
	Investment	Maintenance	Reduced heat and light expenses	Subsidies	Reduced CO_2 emissions(t)	Reduced discharged waste(t)	
Inverter control system	131.5	1.5	177.5	100.0	5,762	—	3,807.8 (CO_2)
Hydrofluoric acid recycling	120.0	33.5	97.8		6,324	1,500	
Filtration device	26.5	5.6	4.6		148	—	
Free-cooling system	25.8	0.6	27.1		904	—	
Total	303.8	41.2	307.0	100.0	13,137	1,500	

* Effects are calculated using the statutory depreciation period for equipment.

Europe

Ricoh UK Products

To promote employee awareness of environmental conservation, Ricoh UK Products, Ltd., added "environmental conservation" to the list of items in the individual and divisional performance evaluation and opened an on-site recycling center, through which the company strives to eliminate the production of waste by disassembling products in order to reuse their parts. Other efforts include leading in community activities by teaching companies and schools in the neighborhood about waste management and how to establish a recycling system.

Staff assigned to the zero-waste-to-landfill campaign at Ricoh UK Products

Staff assigned to community environmental conservation activities

Environmental Accounting of the Cleaning Process

In fiscal 2000, Ricoh Industrie France S.A. switched from water to air pressure to clean its thermal paper production line. Along with water recycling by steam collection, change in process reduced the company's annual water consumption 43.4%, down from 25,353 m^3 per year. Ricoh Industrie France saved on the cost of wastewater disposal using this system.

Environmental Conservation Costs and Effects of the Cleaning Process in Ricoh Industrie France (Segment Environmental Accounting) (Unit: millions of yen)

Costs			Effects*				EI value (m^3/100 million yen t/100 million yen)
			Economic benefit		Effect on environmental conservation		
Item	Main cost	Amount	Reduction	Amount	Reduction	Amount	
Business area cost	Investment	34.8	Industrial water	1.6	Industrial water	21,601 (m^3)	62,072 (Industrial water)
	Maintenance	0.0	Waste disposal expense	98.2	Waste disposal amount	6,085 (t)	17,486 (Waste)

* Effects are calculated for three years, starting from fiscal 1999.

China and Taiwan

Zero-Waste-to-Landfill at RAI

Ricoh Asia Industry Ltd. (RAI) strives to achieve Zero-Waste-to-Landfill as one means of promoting employee awareness of environmental conservation and improving labor productivity. It contributed to boosting the spirit of the employees and created a better atmosphere at the workplace. RAI opened an in-house recycling shop for copier and printer toner bottles and installed wastewater purification equipment to reduce biochemical oxygen demand (BOD)*. When RAI discovered that water pollution was being caused largely in part by leftovers from the cafeteria, it reviewed its menu.

* BOD is the quantity of oxygen used by microorganisms in the biodegradation of organic matter and is used to measure the amount of pollution in rivers and lakes.

Staff assigned to the zero-waste-to-landfill campaign at RAI

Zero-Waste-to-Landfill at Taiwan Ricoh

In January 2001, Taiwan Ricoh Co., Ltd., started a waste reduction campaign and began detailed sorting simultaneously. Employees determined the recycling routes by themselves to increase the number of types of sorting from 17 to 35. Thus, Taiwan Ricoh achieved advanced recycling.

Staff assigned to the zero-waste-to-landfill campaign at Taiwan Ricoh

Marketing

Enhancing green marketing and contributing to reducing environmental impact that affects the whole world

The movement toward green procurement is rising in Scandinavia and EU countries as well as in Japan and North America. The idea that gives a priority to purchase products with less environmental impact from companies practicing environmental conservation activities has emerged and led to the creation of laws in each country. In Japan, the Law Concerning the Promotion of the Procurement of Eco-Friendly Goods and Services by the State and Other Entities (Law on Promoting Green Purchasing) came into effect in April 2001. Canada established a tender system called the Environmental Choice Program, in which winners are given up to a 10% premium if they enthusiastically take an environmental approach in procurement for government organizations. This system is also used by private sectors.

The Ricoh Group actively engages in developing and manufacturing products with less environmental impact. It works continuously to reduce the environmental impact imposed on the customer and the world in general. Furthermore, the Group takes the lead in disclosing the environmental information of products by participating in establishing standards for environmental labels in many countries.

Type I Environmental Labels

Type I environmental labels have been established in countries and regions pursuant to ISO 14024 standards. They make it easy for the customer to see that the product has less environmental impact. Such labels include the Eco Mark (Japan), Blue Angel Mark (Germany), Nordic Swan Mark (Scandinavia), and the Environmental Choice Program (ECP)(Canada). Ricoh obtained these international Type I environmental labels to efficiently promote global green marketing. Further efforts are being made to establish standards that enable a significant reduction in environmental impact by extending Eco Mark applications to include printers.

International Environmental Labels for Which the Ricoh Group Qualifies

● Eco Mark*/Japan

The Eco Mark is a labeling system that the Japan Environment Association uses. Its applications were extended to include printers in 2001. Ricoh was awarded this mark for its copiers and printers. Eighteen models in the IPSiO series of printers were awarded this mark pursuant to the extended applications.

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

● Blue Angel Mark* (BAM)/Germany

BAM certification standards are specified in detail by the German Federal Environment Agency throughout the production process, from manufacturing to the disposal of applicable products. As of fiscal 2002, Ricoh's facsimiles, copiers, and printers are all BAM certified.

● Environmental Choice Program (ECP) Mark*/Canada

ECP is a national program established in Canada in 1995 and operated by a private company called Terra Choice Environmental Services Inc. The program gives a 3% premium to the Canadian government on its purchases.

● Nordic Swan Mark*/Scandinavia

The Nordic Swan Mark is an eco-label system that has been used by five Scandinavian countries—Norway, Sweden, Finland, Iceland, and Denmark—since 1989. In 1997, seven different models of Ricoh copiers were awarded this mark.

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

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

* Type I Environmental Labels

Type II Environmental Labels

Type II environmental labels are given to products that satisfy standards independently set by each company. The Ricoh Group set its own standards for recyclable designs, the reuse rate of parts, and environmental safety. The Group established the Recycle Label and has given it to the Spirio 5000RM, Spirio 7210RM series, Spirio 8210RM, and Spirio 105BB, which it currently markets, as well as the imagio MF 6550RC*, which has been on the market since June 2002.

* Only available for rent.

● Criteria for the Ricoh Recycle Label (Summary)

New Machines

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

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

Recycled Machines

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

Type III Environmental Impact Disclosure

Type III Environmental Impact Disclosure aims at disclosing quantitative information on the environmental impact of products so that customers are able to choose products with less environmental impact. The Ricoh Group was the first to disclose product LCA* information pursuant to Type III Environmental Impact Disclosure. For a more timely disclosure, the Group makes efforts to obtain certification for the information collection and disclosure system itself.

* See page 27.

Japan

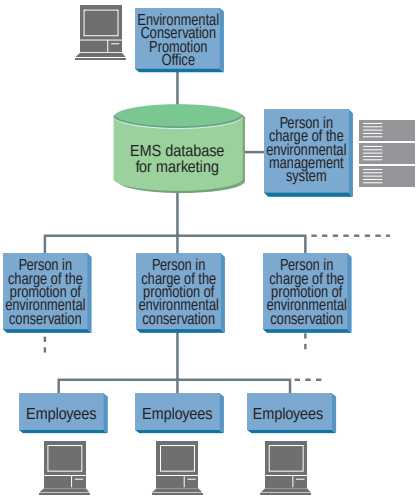
ISO 14001 Certification Awarded to Sites of Japanese Sales Companies

In December 2001, 410 sites of 49 Ricoh Group companies were awarded ISO 14001 certification at the same time.

A highly environment-conscious sales representative group comprising approximately 18,000 employees was established. The Ricoh group strives to reduce the environmental impact of society as a whole by providing customers with products and services that have less environmental impact and knowledge of environmental conservation activities.

To prepare for certification, the Ricoh Group centralized all relevant information throughout the country by establishing a database that included approximately 300,000 pages of screening documents. Computerized screening for registration, which took only four days to complete, was first conducted in Japan.

Internal Information System Management and Operation Chart



Zero-Waste-to-Landfill Campaign at Sales Companies

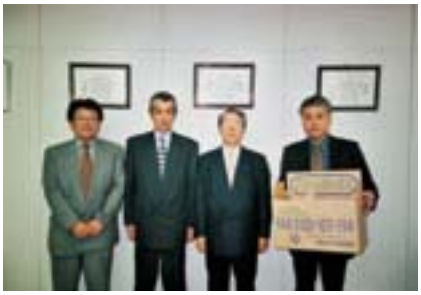
Fukui Ricoh Co., Ltd., achieved Zero-Waste-to-Landfill in fiscal 2000, and Iwate Ricoh Co., Ltd., followed suit in March 2002. Under the slogan "Waste when mixed but resource when sorted," Iwate Ricoh conducted a campaign that focused on detailed waste sorting as well as office computerization with a less-paper system. The company thus achieved level 2 Zero-Waste-to-Landfill*.

* See page 39.

Using Offices as Showrooms

Ricoh's sales companies, including Mie Ricoh Co., Ltd.; Aichi Ricoh Co., Ltd.; and Kanagawa Ricoh Co., Ltd., established a new "live office" system to enhance Ricoh's green marketing scheme. The system promotes the computerization of offices, where customers are invited to see an example of a paperless office in actual operation as well as experience simulated cost reductions that result from computerization. Aichi Ricoh launched a new service that places "green boxes" in the customer's office for the collection of used paper to be recycled.

A "live office" in Mie Ricoh



Aichi Ricoh environmental conservation staff and a "green box"

Eco Mark on Printers

In October 2001, new Eco Mark standards were set for printers. The new standards are more suitable for environmental impact reduction than previous ones, which aimed only at reducing waste, because they take into consideration the product's entire life cycle, from resource procurement to recycling. Ricoh was awarded the Eco Mark for 18 models in the IPSiO series, including those already on market.

The IPSiO Color 8150 was one of 18 models awarded the Eco Mark.

Green Solution

Sustainable management is a current issue that is attracting the attention of most companies and organizations. In January 2002, Ricoh started developing a green solution system consisting of products and services that are useful in reducing the environmental impact of customers. Ricoh helps customers solve various management issues by providing know-how and systems that the company acquired through its environmental conservation activities. Such help includes knowledge on marketing products that promote energy and resource conservation, obtaining ISO 14001 certification, promoting zero waste to landfill at plants, and a recycling system for used products.

The Americas

Awareness Promotion and Green Marketing

To make environmental conservation activities more effective, not only must employee awareness be encouraged but customer participation in the activities must be allowed. Ricoh Corporation, the regional sales headquarter for the Americas, is developing green marketing activities to promote employee and customer awareness of environmental conservation programs and eco-friendly products in order to conduct the activities more effectively. The company developed the Environmental Edge Kit, an environmental awareness promotion tool to promote green marketing that can be used in showrooms and presentations to customers.

Screen shot of the Environment Edge Kit

An environmental booth in the showroom at Ricoh Corporation

The United States

NASA and Lanier Worldwide

Lanier Worldwide, Inc., is a sales company that joined the Ricoh Group in 2001. When Lanier submitted a tender to the National Aeronautics and Space Administration (NASA), it was asked to explain its corporate responsibility, to which Lanier described the Ricoh Group's innovative technological developments; positive support of international energy organizations, including the International Energy Agency (IEA) and Environmental Protection Agency (EPA); and eminent social reputation in promoting awareness. Lanier Worldwide eventually got a superior position for their tender, and the whole story appeared in the green purchasing guidebook for copiers as a good example of green purchasing in the United States. NASA cooperated with the EPA in promoting green purchasing and became a model government organization.

Canada

The Toronto District School Board and Ricoh Canada

Ricoh Canada Inc. concluded a big sales contract for 1,400 machines with the Toronto District School Board (TDSB), which is the third largest board of education in North America. The company successfully convinced the board of the environmental performance of the new Aficio series of printers (sold as the imagio Neo series in Japan), which are user-friendly and have significant energy-saving capabilities. Ricoh Canada went on to convince the Toronto District School Board of the Ricoh Group's achievements in environmental conservation activities. The most important achievement that Ricoh Canada accomplished was in preparing the board to present a good model of green purchasing to board staff, students and their parents, and to the community in general and to show the board of education's sense of social responsibility.

Members of the Toronto District School Board and Ricoh Canada staff

Europe

ISO 14001 Certification Awarded to All 13 Ricoh Sales Companies

In March 2002, Ricoh France S.A., Ricoh Norge A.S., Ricoh Europe B.V. (Portugal Branch), Ricoh Espana S.A., and Ricoh Polska Sp.zo.o. qualified for the final screening for ISO 14001 certification. Accordingly, all 13 of Ricoh's sales companies (Ricoh Europe B.V., Ricoh Austria GmbH, Ricoh Europe B.V. (Belgium Branch), Ricoh Deutschland GmbH, Ricoh Hungary Kft., Ricoh Italia S.p.A., Ricoh Nederland B.V., Ricoh UK Ltd., and five companies mentioned above) were awarded ISO 14001 certification. There are only a few sales companies qualified for ISO 14001 in Europe, even though it is known as a highly environment-conscious society. Therefore, this effort will result in the development of more-effective green marketing.

Establishment of an Environmental Database

Ricoh Europe B.V., the regional sales headquarter for Europe, the Middle East, and Africa, established an environmental database for the entire Ricoh Group to answer customers' inquiries. During the period from June through August 2001, the database was accessed more than 1,500 times. The increased number of customer inquiries about environmental issues proved growing interest in environmental conservation in Europe. At present, the establishment of a database is a basic requisite for government authorities and larger companies in some European countries to demonstrate their environmental conservation efforts in their tenders and marketing tools.

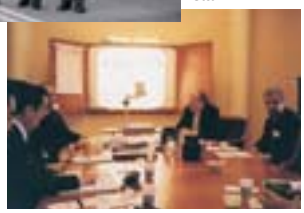
Sweden

Volvo, Statskontoret (STAKO), and Carl Lamm

In Sweden, the world leader in environmental conservation activities, sales companies, customers, and government organizations work together to set challenging goals for environmental conservation. As an example, sales companies and manufacturers are required to be ISO 14001 certified before submitting tenders. Carl Lamm AB is a Ricoh distributor operating in 43 cities in Sweden. The company markets environment-conscious products and promotes customer awareness of environmental conservation by marketing products with less environmental impact and encouraging customers to

send back used toner cartridges for recycling. Volvo, a manufacturer of trucks and construction equipment and one of Carl Lamm's customers, and STAKO, a government procurement organization, both prepare their own independent guidelines for green purchasing that require them to comply with their guidelines in submitting tenders. Carl Lamm and the Ricoh Group successfully market a variety of products by satisfying their guidelines, which brought remarkable sales performances.

Members of Volvo, Carl Lamm, and Ricoh Europe staff



An environmental conservation meeting held by STAKO

Germany

Continental and NRG Deutschland

NRG Deutschland GmbH is a sales company in Germany. When NRG Deutschland successfully concluded an agreement with the Ministry of Justice of Germany for the sale of more than 200 copiers, it became big news because there were only a few sales companies that were ISO 14001 certified in Germany. When Continental AG, the fourth worldwide-largest tire manufacturer decided to install our products, ISO 14001 certification was again one of key factors for their decision.

Members of Continental, NRG Deutschland, and Ricoh Europe staff

The Netherlands

Marketing of Reconditioned Machines by NRG Benelux

NRG Benelux B.V., a sales company, collects machines and toner cartridges and markets the reconditioned machines*. The divisions in charge of after-sales service, production, and marketing efficiently work together to market reconditioned machines in response to market needs. Sales of both new and reconditioned machines are expanding.

* See page 53.

A reconditioned machine for a copy service area of a supermarket

Hungary

Sales Promotion Activities by Ricoh Hungary

In Hungary, in Eastern Europe, people are becoming increasingly aware of environmental conservation. In June 2001, Ricoh Hungary Kft. decided to develop its business activities under the slogan "A Friend of the Environment." Ricoh Hungary invited reporters to a greenhouse in a zoo in Budapest for a press conference. In its environmental conservation campaign in autumn, the company publicized Ricoh's commitment to the environment by posting 400 signboards and placing advertisements in newspapers and economic or business magazines as well as on Web sites. Ricoh Hungary supports approximately 15 dealers and 30 sales companies and encourages them to give the same level of customer service that Ricoh Hungary does. Ricoh Hungary underlined the Group's commitment to environmental conservation by preparing collection boxes for used copy paper, giving customers zoo admission tickets, and handing out stationery made from eco-friendly materials as Christmas gifts. More customers now answer "yes" when asked if they consider environment-friendliness when purchasing OA equipment.

Press conference held at a greenhouse in a zoo in Budapest

China and Taiwan

Hong Kong

Energy Label Scheme

In Hong Kong, an energy label scheme for analog and digital copiers was established. Ricoh Hong Kong Ltd. helped establish the scheme, which provides information on energy consumption so that customers can choose more energy efficient products. Other schemes for printers are to be established in the future.

Asia-Pacific Region

New Zealand

Ricoh New Zealand

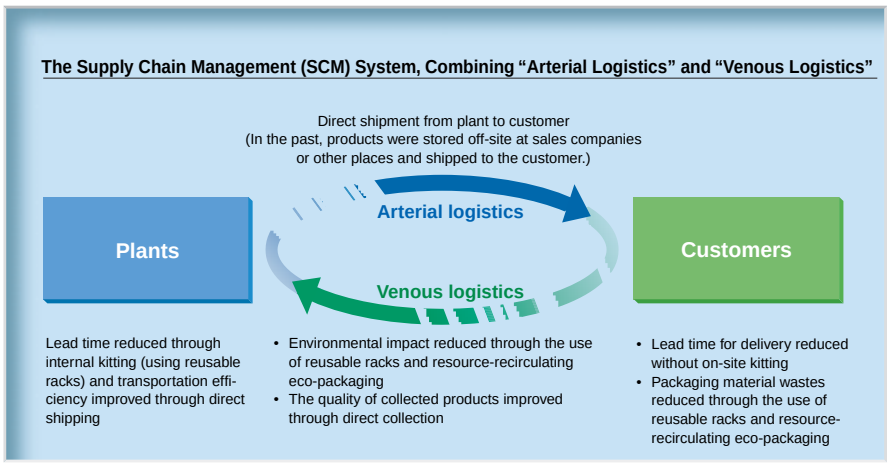
By promoting environmental conservation activities, Ricoh New Zealand Ltd. won a bid to sell 23 units to governmental divisions in charge of environmental issues. This attracted inquiries from other divisions. In New Zealand, environmental issues are becoming important social issues, and Ricoh New Zealand is continuing its efforts to closely unite business activities with environmental conservation.

Logistics

Improvements in the supply chain management (SCM) system, including "venous logistics," are being carried out all over the world.

To reduce the environmental impact in transportation, the Ricoh Group, led by Ricoh Logistics System Co., Ltd., is striving to improve its worldwide transportation system. In Japan, with delivery seen as the core of "arterial logistics," a direct shipment system, from plant to customer, was established. Looking at "venous logistics" as a part of the SCM system, the recycling information system[1] was merged with the marketing order entry system to improve the profitability of the recycling business by integrating the arterial and "venous logistics" into one unified system. If used products are left outside and get wet, they will not be able to be recovered. Used products are therefore collected directly from the customer to improve their chances of being reused. One of the activities that were carried out in 2001 was turning collection centers into Green Centers[2].

1. See page 51.
2. See page 52.



Japan

Resource-Recirculating Eco-Packaging

In 2000, Ricoh developed a reusable eco-packaging made of recycled plastic. Reusing eco-packaging was found to be profitable in terms of environmental impact and cost.

Eco-packaging (left) developed in 1994 and resource-recirculating eco-packaging developed in 2000

Reusable Racks

For the bulk delivery of printers and other equipment that comes with optional attachments, Ricoh developed adjustable pipe-framed reusable racks. Ricoh had its plants arrange for optional equipment and prepare an easier production plan based on the order receipt information of sales companies. This resulted in a significant reduction in lead-time and environmental impact during delivery. In the first half of fiscal 2001, 2,943 machines were shipped in reusable racks, reducing packaging costs by at least ¥8 million.

Reusable pipe-framed racks

Europe

France

Improvements in Transportation Routes to Production Sites

Ricoh Industrie France S.A. did a modal shift in the logistics from one based on land transportation to one based on shipping on the river. In the past, assembly parts were transported from Japan to Rotterdam in the Netherlands by sea and then to Ricoh Industrie France by truck. The use of trucks was replaced by vessels going up the Rhine River. As a result, the company successfully reduced CO_2 emissions to 40% of past levels.

China and Taiwan

China

Improvements in Loadage and Transportation Routes

Ricoh Express (S.Z) Warehouse Ltd., a logistics company in China, reduced the number of trucks by approximately 50% by improving transportation routes and establishing a more efficient loading plan. Some improvements, such as reducing truck transportation, were made to reduce costs and environmental impact.

After-Sales Service

Promoting Zero-Waste-to-Landfill and looking at the customer's office as a responsibility

Ricoh Technosystems Co., Ltd., a Japanese service company in the Ricoh Group, promotes Zero-Waste-to-Landfill as a key activity in improving environmental conservation and customer satisfaction. Zero waste was achieved by 46 of the company's sites by the end of fiscal 2001, and all 233 sites are to achieve the same by December 2002. One of the most important areas of service companies is equipment maintenance. For this reason, Ricoh Technosystems considers the customer's office as a part of its responsibility and brings back all replaced parts to be recycled. The company also instructs their service engineers to leave the customer's office cleaner than when they found it. The employees are developing a variety of activities in regions other than Japan.

The staff of the Chiba Branch, Ricoh Technosystems

Japan

Zero-Waste-to-Landfill Activities

In the past, service engineers would bring used and replaced parts back with them to their sites for disposal. Ricoh, however, established a recycling scheme to collect used parts and achieved zero waste for those parts. Ricoh promoted employee awareness of the need to reduce the amount of waste being discharged and to thoroughly sort waste while looking for new recycling routes. Ricoh bought recycling equipment to dispose of household solid waste, including used tea leaves.

Waste-sorting area

Energy Conservation Activities

Ricoh Technosystems focused on saving fuel used in company vehicles and electricity at offices. To reduce fuel consumption, the company made its employees aware of the need to turn the vehicle's engine off while at a complete stop and is planning to replace gasoline vehicles with electric vehicles. The company designated places where the lights can remain on for the morning, afternoon, and/or evening. The layout of the office was also changed, placing the clerical staff's desks together because service engineers seldom sit at their desks during the day.

Reducing Paper Consumption

To reduce paper consumption, personal computers and projectors are being used to replace paper used internally or for presentations, and duplex copying is being strongly urged. The Chiba Branch reduced its paper consumption 10% in fiscal 2001 from the previous year.

Promoting Employee Awareness of Environmental Conservation and Spreading Know-How

Standards were set for sorting waste materials and keeping the workplace and company vehicles clean and orderly. Photos of how offices and vehicles should look were taken by digital camera and compiled into an exclusive database that all employees can use for reference. The company established other databases on recycling and ISO to encourage employees to share success stories or opinions.

Environmental conservation activities help keep company vehicles clean and orderly.

Europe

Ricoh France

Ricoh France S.A., a sales and after-sales service company in France, promotes duplex copying and detailed wastepaper sorting to reduce paper consumption. The company created "Duplex Copying Saves the Earth" posters to promote employee awareness of environment-consciousness. A PDA system determines the most efficient route for service and sales vehicles to take in order to reduce environmental impact.

Asia-Pacific Region

Ricoh New Zealand

Ricoh New Zealand Limited, a sales and after-sales service company in New Zealand, uses a PDA system to operate service vehicles more efficiently and reduce environmental impact.

PDA system for service vehicle operation

Use

Activities reducing environmental impact with electric power and paper efficient machines

Office automation (OA) equipment, including copiers, printers, and facsimiles, require electric power, emitting CO_2 in the process of generation, which causes a major environmental impact. In order to prevent global warming, Ricoh strives to improve not only the energy conservation capabilities of its products, but also their usability so that more people will use them, thereby effectively reducing the total environmental impact of the CO_2 emission caused by electric power generation. Ricoh uses advanced energy-saving technologies in its core products to achieve this. Another important issue is the efficient use of paper. Ricoh is proposing a variety of systems that would reduce paper consumption by improving the quality of duplex copying and using computer technology applications.

■ Energy Conservation

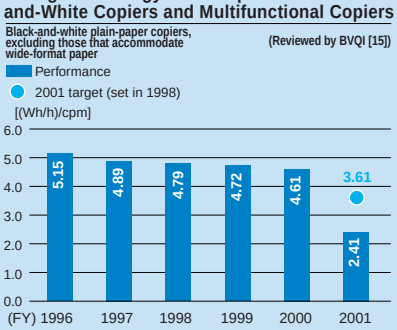
It is important for office equipment, including copiers, to use less energy while in standby mode. Copiers and printers are generally left on during office hours while facsimiles are left on 24 hours a day. Ricoh succeeded in significantly reducing the amount of electricity consumed by its digital multifunctional copiers, namely, the Aficio 1035/1045 and 1022/1027 series (imagio Neo 350/450 and 220/270 series, respectively). The series is even more user-friendly with its quick recovery from energy-saving mode.

Aficio1022/1027 series
(imagio Neo 220/270 series)

Changes in Energy Consumption of Black-and-White Copiers and Multifunctional Copiers

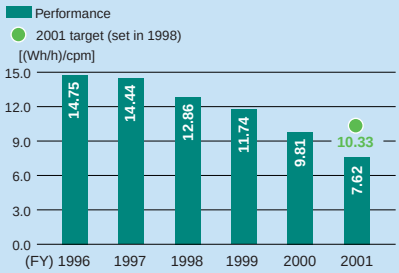
Black-and-white plain-paper copiers, excluding those that accommodate wide-format paper

(Reviewed by BVQI [15])



Changes in Energy Consumption of Color Copiers and Multifunctional Copiers

(Reviewed by BVQI [16])



*In fiscal 2001, the Aficio 1035/1045 and 1022/1027 series (imagio Neo 350/450 and 220/270 series, respectively), which incorporates quick start-up (QSU) technology (see page 48), significantly contributed to the achievement of our goal.

◎ Energy conservation values for copiers are calculated as follows:

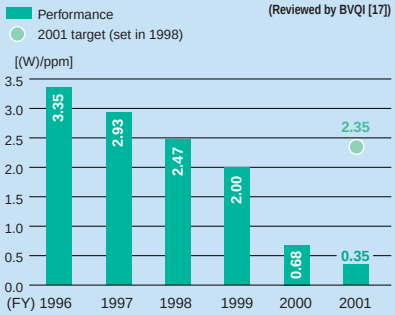
Σ [<Energy consumption efficiency (Wh/h)>[1]/<copying speed[2]> × the number of units marketed]/
Σ the number of units marketed

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

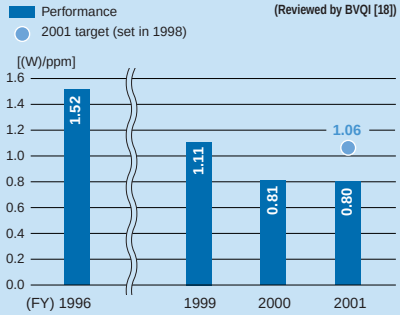
Changes in Energy Consumption of Facsimiles (including multifunctional copiers)

(Reviewed by BVQI [17])



Changes in Energy Consumption of Black-and-White and Color Printers

(Reviewed by BVQI [18])



◎ Energy conservation values for facsimiles are calculated as follows:

Σ [<Energy Star energy consumption in standby mode[1] (W)>/<printing speed[2]> × the number of units marketed]/Σ the number of units marketed

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

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

Energy-Saving, User-Friendly QSU Technology Used in the Aficio (imagio Neo)

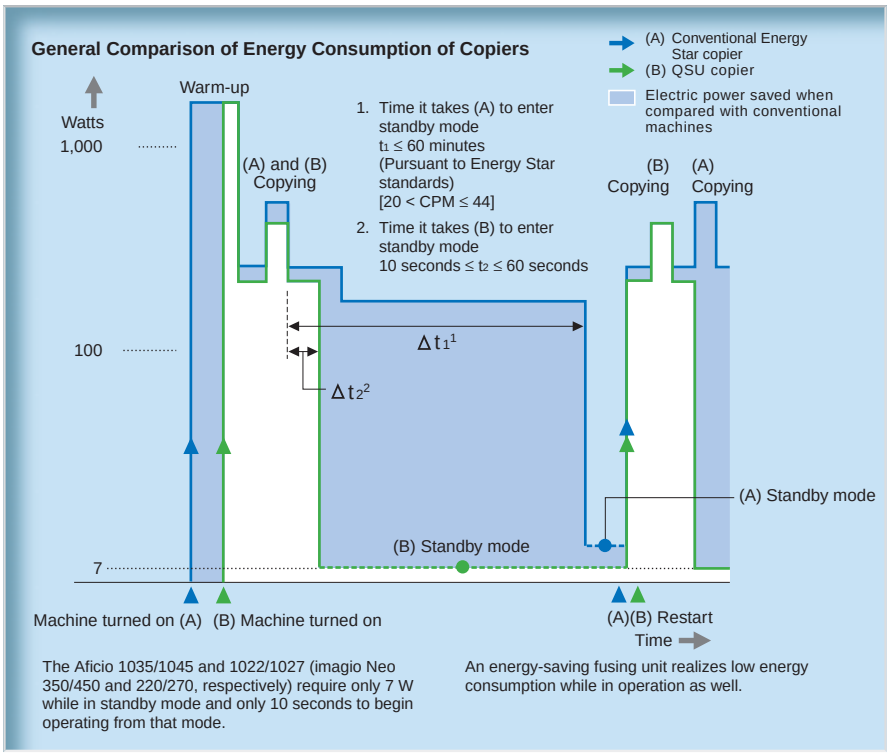
QSU technology is Ricoh's unique technology that enables machines to save energy and start up quickly when needed. The technology was first used in the Aficio 1035/1045 (imagio Neo 350/450) series digital multifunctional copier, which was marketed in fiscal 2000. The Aficio 1022/1027 (imagio Neo 220/270) series, marketed in fiscal 2001 with the energy consumption efficiency of 29 Wh, improved an approximately 40% energy consumption efficiency compared to the Aficio 220/270 (imagio MF2230/2730). The Aficio 1022/1027 (imagio Neo 220/270) needs only 10 seconds to begin operating from energy-saving (standby) mode.

Received the Energy-Saving Award for Two Consecutive Years

At the 12th Energy-Saving Award in fiscal 2001, the imagio Neo 220/270 (Aficio 1022/1027) series digital multifunctional copier was awarded the Energy Conservation Chairman's Prize in Japan. This was the second year in a row that Ricoh won an award. The previous year, the Company received the Minister of International Trade and Industry Prize for the imagio Neo 350 (Aficio 1035) series. Major factors that contributed to winning this year's award include 1) the extensive use of QSU technology in popular products to reduce the environmental impact of society as a whole, 2) reducing resource consumption by using recycled parts, and 3) significantly reducing chemical substances that influence the environment*.

* See page 32.

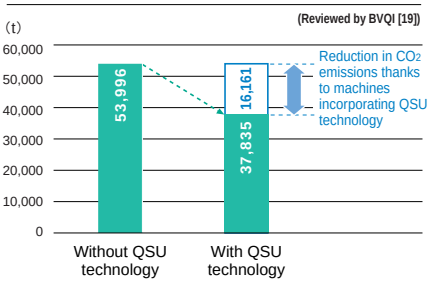
The12th Energy-Saving Award's Energy Conservation Chairman's Prize



Annual Reduction in CO_2 Emissions of Approximately 16,000 Tons Worldwide

In fiscal 2001, Ricoh estimated to reduce CO_2 emissions of products marketed by the Ricoh Group worldwide approximately 16,161 tons by incorporating QSU technology into its digital multifunctional copiers, namely, the Aficio 1035/1045 and 1022/1027 series (imagio Neo 350/450 and 220/270 series, respectively). The figure on the right shows a comparison of annual CO_2 emissions on the assumption that QSU technology not incorporated. The reduction is equal to ¥1,041 million in electricity bills for customers. It was discovered through segment environmental accounting that Ricoh's development of energy-saving products roughly corresponds to a cost reduction of ¥1,048 million.

Environmental Conservation Costs and Effects in the Development of Products Incorporating QSU Technology (FY 2001)



Environmental Conservation Costs and Effects in Developing QSU Products (Segment Environmental Accounting)

Costs			Effects			EI value (t/100 million yen)
			Economic benefit		Effect on environmental conservation	
Item	Main cost	Amount	Corporate effect	Customer effect		
Research and development	Development of energy-saving units	400 (millions of yen)	Effect on gross benefit 1,048 (millions of yen)	Reduced electricity expenses* 1,041 (millions of yen)	Reduced CO_2 emissions* 16,161 (t)	2,671.2
	Molds, jigs, and parts	205 (millions of yen)				

*Annual "Reduced electricity expenses" and annual "Reduced CO_2 emissions" are calculated on the assumption that the machine is used eight hours a day, twenty days a month.
Contribution amount to gross margin = gross margin amount × contribution rates to gross margin by environmental efficiency (See page 78.)

■ Efficient Paper Use

The manufacturing of paper consumes a lot of energy and generates a significant amount of CO_2. To do its part in preventing global warming, Ricoh implemented the more efficient use of paper to its energy conservation goals. Moreover, Ricoh engages in developing rewritable paper*, which can be erased and rewritten on repeatedly.

* See page 32.

Improved Duplex Copying

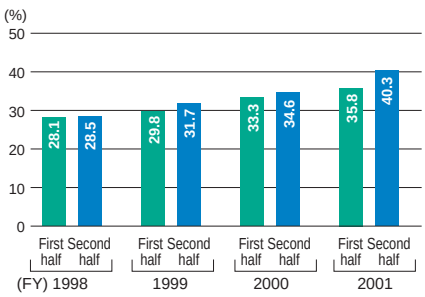
To encourage more customers to make use of duplex copying, Ricoh has developed a high-speed "switchback" system that speeds up processing by shortening the interval in which paper is fed into the copier. A paper-feeder simulator that eliminates nonfeasible feeding route designs had also been developed. The Aficio 850 (imagio MF 8570) digital copier, which was marketed in 1999, incorporates a "nonstuck interleaf" duplex design to achieve nearly 100% duplex productivity* while in continuous operation. Many of our other products have also achieved 100% duplex productivity.

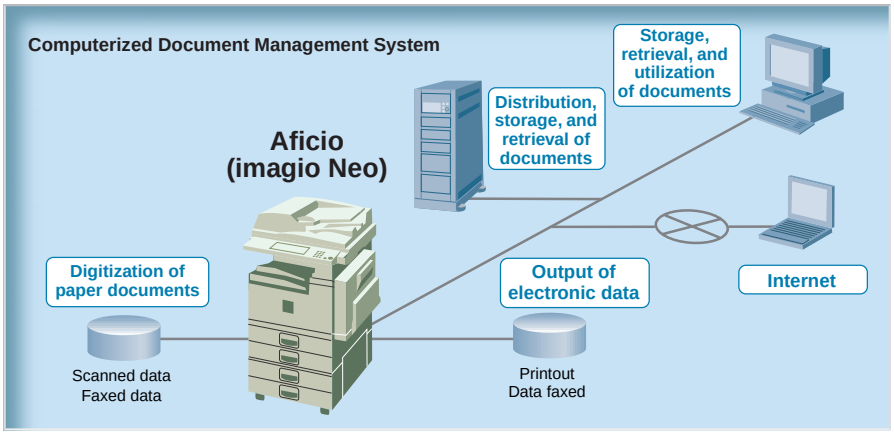
* Duplex copying productivity (%) = (Time spent on simplex → duplex copying)/(Time spent on simplex → simplex copying) × 100. Time is measured from the moment the desired number of copies is entered and the "Copy" button is pressed to the moment the copier is ready for the next batch of copying.

Marketing Recycled Paper

Ricoh conducts LCA studies on new and recycled paper to identify their environmental impact. Ricoh also markets recycled paper to reduce the amount of energy consumed in manufacturing paper.

Japanese Sales of Recycled Paper





Reduction in Paper Consumption by Computerization

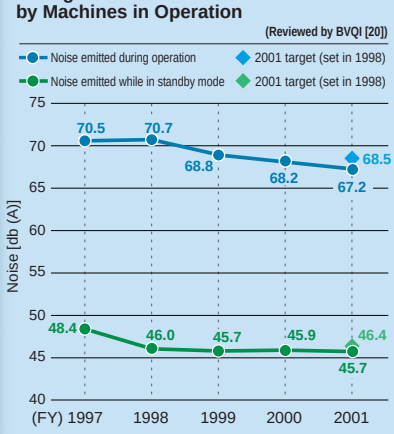
Ricoh provides customers with an ideal printing environment with its high-value-added products, including multifunctional printers (printers that can also be used as copiers and facsimiles), and an efficient computerized document management system. Such a system includes scanning documents and incorporating their data into a database and enabling users to browse and search such data on personal computers connected to the network as well as having a less-paper fax function that displays information on a computer screen. Ricoh makes the management of documents more efficient and reduces paper consumption.

■ Reduction in Noise and Emission of Chemical Substances

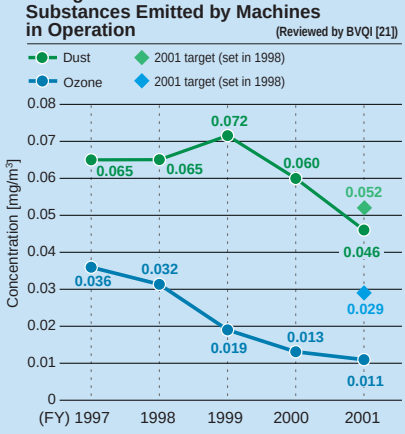
In order to make office equipment, including copiers, more acceptable, it is important to reduce the noise it emits. The emission of ozone and dust, even if very small in amount, is also to be eliminated.

Ricoh is making great efforts to improve its product design so that the noise, ozone, and dust emitted are reduced.

Changes in the Level of Noise Emitted by Machines in Operation



Changes in the Level of Chemical Substances Emitted by Machines in Operation

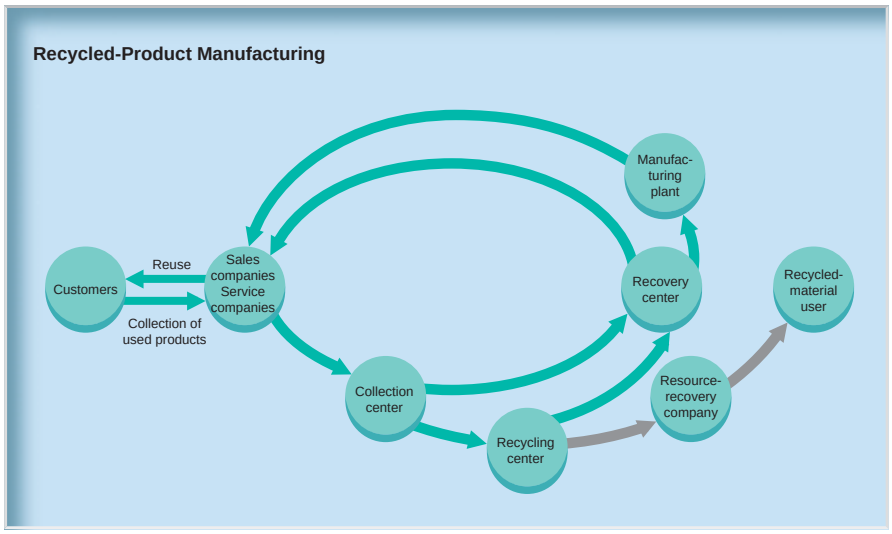


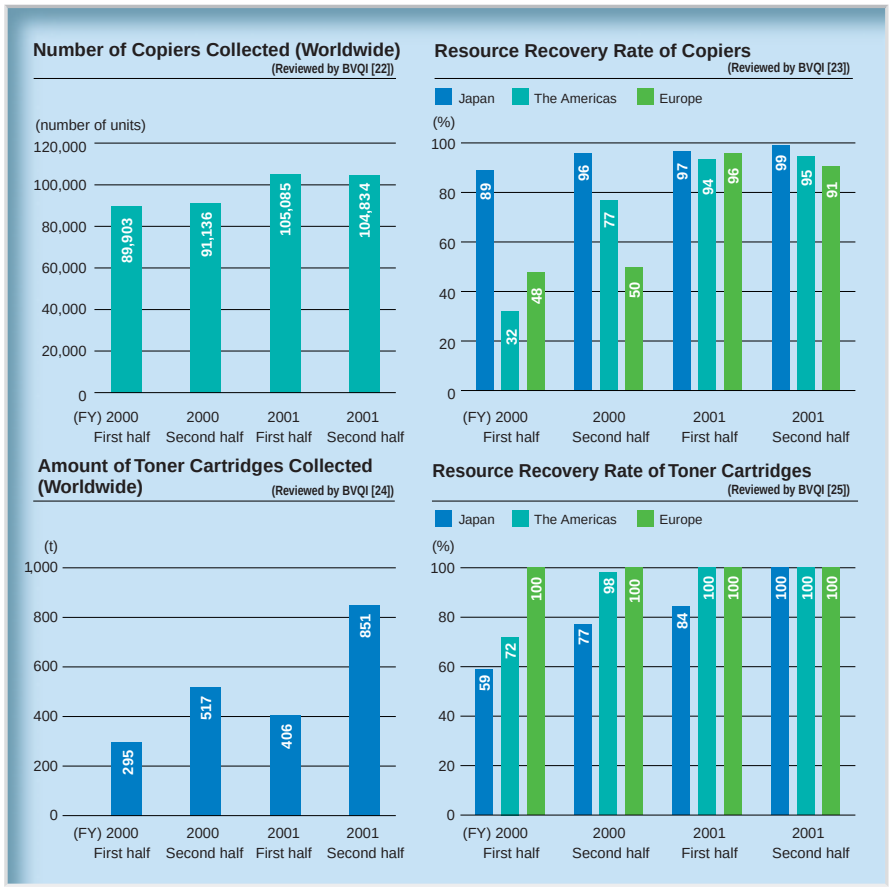
* Calculations are based on the weighted number of copiers, facsimiles, and printers sold and converted into a copying productivity of 50 sheets per minute for all machines.
* The figures above have been calculated using a formula set by the Japan Business Machine Makers Association's Standard (JBMS) in 1999.

Recycling

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

The Ricoh Group aims at securing profitability in the recycling business in Japan by the end of fiscal 2004. The Group plans to do the same in the Americas, Europe, China and Taiwan, and the Asia-Pacific region. Efforts made in Japan include improving the efficiency of collection, recovery, and recycling by making use of a recycling information sharing system and nationwide recycling system. Increased profitability will be achieved by significantly reducing the cost of collection and disposal through an advanced "venous logistics" system and increasing the sales of recycled machines. For regions other than Japan, it was decided that used products will be collected, recovered, and sold within the same region. Efforts are being focused on improving collection rates and the expansion of recycling sites. Thus, the Group's recycling activities are evolving into a recycling business. The recycling business conducted by sales companies in Europe has already turned profitable.





Environmental Conservation Costs and Effects in the Recycling Business in 2001*
(Segment Environmental Accounting)

(Unit: millions of yen)

Costs		Effects			
		Economic effects		Effects on environmental conservation	
Item of cost	Amount	Item	Amount		
Product recycle cost	572	Sales amount	937	Resources recovered 26,920 t A 4,537-t increase from the previous year	Final disposal 350 t A 497-t decrease from the previous year
Collection/resource recovery cost	2,802				
Total cost	3,374	Social effect	2,150	Resource recovery rate 96.3% (FY 2000) → 98.7% (FY 2001)	

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

Japan

In fiscal 2001, Ricoh developed and began mass-producing the imagio MF6550 RC reconditioned digital copier. In fiscal 2002, Ricoh is working to improve its collection rate and collection quality to provide customers with as many recycled machines and toner cartridges as possible.

Reconditioned Digital Copiers

The imagio MF6550 RC is a reconditioned digital copier that contains more than 87% (mass ratio) reused parts[1], the highest in the industry. Ricoh was able to develop the imagio MF6550 RC in a short period of time because it was a leader in digital copier sales and had accumulated extensive know-how and skills in the recycling of analog copiers.

The environmental impact over its entire life cycle is approximately 50%[2] less than its predecessor, which is made of all new parts, in terms of the amount of resources and energy consumed in manufacturing, for example.

The imagio MF6550 RC reconditioned digital copier

1. Parts that can be used again from collected machines and that have undergone the necessary processing for reuse
2. The annual environmental impact of both the previous model and reconditioned machine was used for comparison. The data was calculated after the environmental impact of machine use was subtracted. See page 27. http://www.ricoh.co.jp/imagio/mf/6550RC/index.html (Japanese language only)

Recycling of Toner Cartridges

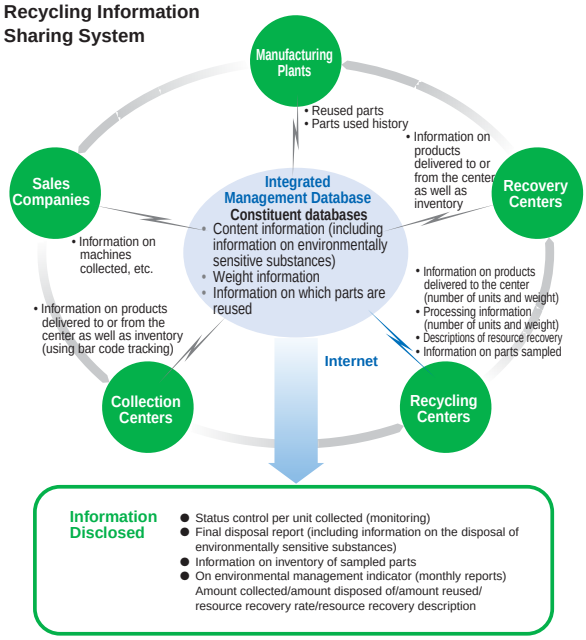
The full-scale collection of all office supplies, such as toner cartridges, started in 1998. Ricoh's new nationwide recovery and recycling network was established in fiscal 2001. Collected toner cartridges are recovered and shipped according to Ricoh's quality standards. Cartridges that do not satisfy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

Recovered toner cartridge

Recycling Information Sharing System

In the recycling business, used products are regarded as raw materials. It is therefore very important to improve collection rate as well as quality of collection. The recycling information sharing system was established as a part of the environmental management information system to efficiently carry out collection, recovery, and recycling as well as to help users understand information on environmental impact and costs. Recovery and recycling centers can share information on the amount and rate of used products collected. Accurate information can be obtained simply by entering the model code of the product to be collected from customers. At present, the system mainly applies to copiers but is to be extended to include other products, such as toner cartridges. In 2003, other regions in addition to Japan will adopt this system to improve efficiency in the global recycling business.

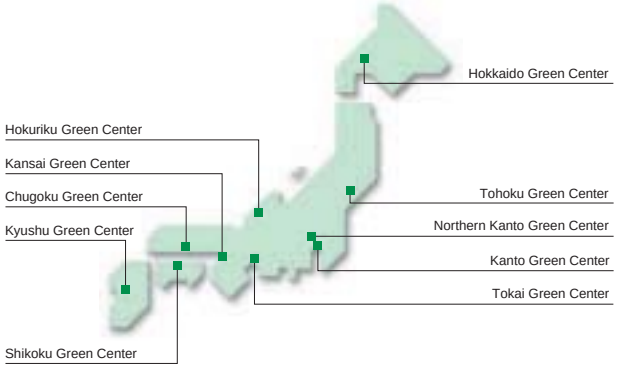
Recycling Information Sharing System



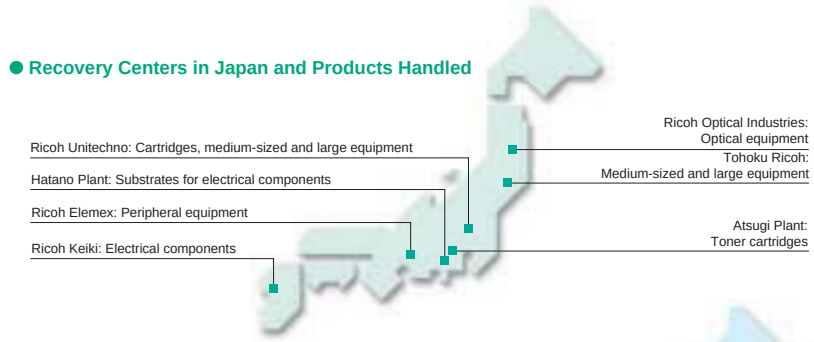
Nationwide Recycling System

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

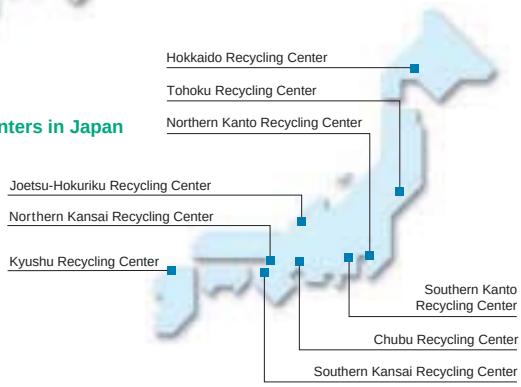
● **Major Green Centers (Collection Centers) in Japan**



● **Recovery Centers in Japan and Products Handled**



● **Recycling Centers in Japan**




Kyushu Recycling Center

● Green Centers (Collection centers)

In fiscal 2001, Ricoh reorganized its collection centers into 10 regional green centers and 80 green centers to improve the collection rate and collection quality of its products. Based on the customer collection order information, personnel were dispatched from the nearest green center to pick up the product and/or toner cartridges from the customer's office. The products and toner cartridges collected at green centers are sent to recovery centers and recycling centers according to selection standards.

● Recovery Centers

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

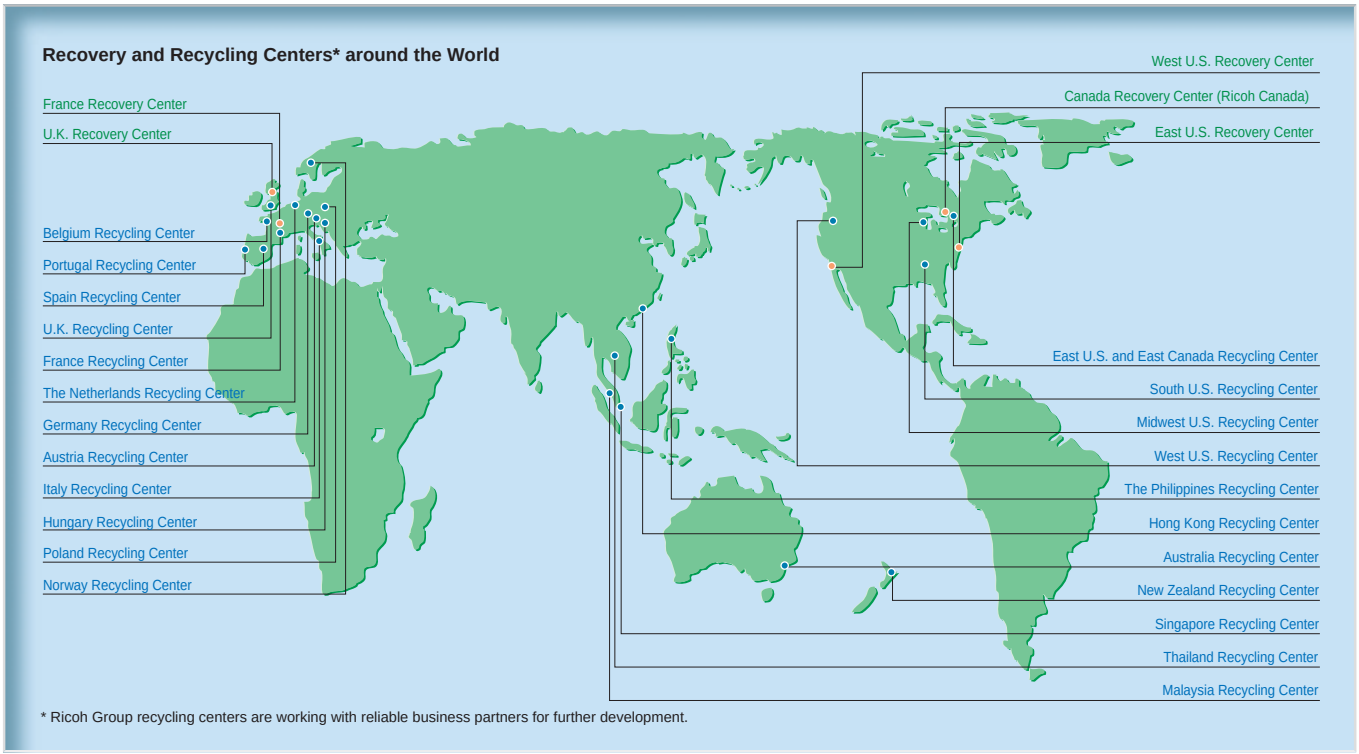
● Recycling Centers

Used products and toner cartridges forwarded to recycling centers are disassembled, and the parts and units that can be reused or recycled are sorted out. Those that can be reused are sent to recovery centers to be used in manufacturing new products or recycled products. Aiming at reducing the final disposal amount, three recycling centers achieved a 100% resource recovery rate in fiscal 2001.

The Americas

Manufacturing plants of Ricoh Electronics, Inc., (REI) in California and Georgia are used as recovery centers for toner cartridges and other products. The collecting of toner cartridges for recovery began in 1995. REI conducted a joint research into recovery methods and quality assurance with Ricoh Corporation to promote more eco-friendly recycling activities focusing on the reuse of parts. Furthermore, a promotional video for toner cartridge recycling was prepared to improve employee as well as customer awareness of environmental conservation and the collection rate.


Toner cartridge recovery line at REI



* Ricoh Group recycling centers are working with reliable business partners for further development.

The United States

Savin

Savin Corporation, a sales company, carried out a promotional campaign aimed at increasing the collection rate of toner cartridges in cooperation with the aftermarket divisions of dealers. In the campaign, dealers compete against each other in collecting the most toner cartridges. Promotional tools, such as mouse pads describing the toner cartridges to be collected and mugs bearing the Ricoh Group's eco mark, were distributed while messages calling for the customer's cooperation in collection were included in packages of toner cartridges or on invoices for those cartridges. When receiving orders from customers, the company encouraged them to join its recycling activities.

The Savin environmental conservation staff and promotional items used in the company's toner cartridge collection campaign

Europe

In Europe, government-authorized collectors and manufacturers collect used toner cartridges in each community. Manufacturers are striving to improve their present collection rate to achieve better resource recovery and appropriate disposal. Ricoh UK Products Ltd. and Ricoh Industrie France S.A., originally manufacturing plants but now used as recovery plants as well, are engaged in the recovery of products and toner cartridges. Getting a jump on the EU Directive on Waste Electrical and Electronic Equipment (WEEE), which will be effective in 2006, the two companies are already promoting high-level recovery and recycling.

Toner cartridge remanufacturing line in Ricoh Industrie France

Product reconditioning line at Ricoh UK Products

The Netherlands

NRG Benelux

In 1987, NRG Benelux B.V., a sales company, began the collection of machines and toner cartridges, and marketing of reconditioned machines. Working in close cooperation with its sales department, NRG Benelux continued to expand its operation, selling several thousand reconditioned products in fiscal 2001. In addition to their low level of environmental impact, the products' attractive prices have contributed to the favorable results.

Product reconditioning line and recovered machines reconditioned

The Netherlands

MIREC, NRG Benelux, and Ricoh Nederland

MIREC is a recycling center in the Netherlands that is in partnership with NRG Benelux B.V. and Ricoh Nederland B.V. With the motto "one industry's waste as another industry's resource," MIREC is conducting business in Europe. The company not only collects, disassembles, recycles, and resells used products, but it also gives advice to its clients on ideal recyclable designs. MIREC's system of analyzing the amount of environmentally sensitive substances in collected products facilitates efficient resale and proper treatment.

Disassembly and sorting line of collected products

Germany

NRG Deutschland

NRG Deutschland GmbH, a sales company, contributes to the Ricoh pan-European collection system and places "green boxes" in the customer's office for the collection of used toner cartridges. Some of the collected cartridges are recycled at its head office in Hanover, and those that can be reconditioned are sent to Ricoh UK Products Ltd. and Ricoh Industrie France S.A. NRG Deutschland reconditions used copiers and other products by itself because it believes that doing so will efficiently improve resource recycling and reduce waste. Recently, more and more digital copiers are being recovered.

The NRG Deutschland staff and "green box"

France

Ricoh France

Ricoh France S.A., a sales company, contributes to the Ricoh pan-European collection system and places "eco-boxes" in the customer's office to improve the collection rate of used toner cartridges and collects them via CONIBI. The collected products and photo-conductor units are sent to Ricoh UK Products Ltd. and Ricoh Industrie France S.A. respectively for recycling. As for machines, Ricoh France plans to recover them by itself as well.

The Ricoh France environmental conservation staff and an eco-box

France

CONIBI

CONIBI is a consortium established jointly by Ricoh and 10 other office-equipment manufacturers in January 2000 to efficiently collect used toner cartridges and toner bottles. Because customers use different brands of copiers or printers, the CONIBI collection system facilitates customer collection of different brands of products in a convenient and professional manner. Collected products are sent back to their respective manufacturer under the CONIBI system, which is attracting attention in Europe for its uniqueness. At present, only consumables, such as toner cartridges, are covered by the system, but machines will be included in the future. In fiscal 2001, approximately 35,000 Ricoh and NRG FRANCE toner cartridges were collected under the CONIBI system. Product recovery at Ricoh UK Products and Ricoh Industrie France and energy recovery at CONIBI resulted in the achievement of Zero-Waste-to-Landfill.

The CONIBI staff and a collection box

The United Kingdom

Ricoh UK

As of March 2001, Ricoh UK Ltd. is the first accredited sales company in the U.K. that is ISO 14001 certified. The company collects its used toner cartridges and recycling parts, and residuals are treated appropriately by energy recovery. Furthermore, Ricoh UK places stickers on its products with the words "This copier uses recyclable toner cartridges" to promote the environmental awareness of customers.

China and Taiwan

Ricoh Asia Industry Ltd. (RAI), a manufacturing plant in Shenzhen, China, recovers toner cartridges at a bonded warehouse that belongs to Ricoh Express (S.Z) Warehouse Ltd. In order to make the recycling operation economically efficient, the collection rate needs to be improved.

Hong Kong

Ricoh Hong Kong

Ricoh Hong Kong Ltd., a regional sales headquarter in the China and Taiwan region, is calling for customer's cooperation in the collection of used toner cartridges by sticking a label on the recycling of toner cartridges on product packages. Customers can return used toner cartridges

to Ricoh Hong Kong by attaching the label to the outside of their packages.

A brochure that promotes the collection of toner cartridges and a return label

Hong Kong

Ricoh Office Solutions

Ricoh Office Solutions, a sales company, rents recycled machines. The company also recycles printed circuit boards.

Copier recycling line

China

RAI

Among the toner cartridges collected by Ricoh Office Solutions, Ricoh Asia Industry Ltd. (RAI) recovers only those it manufactures itself. RAI currently recycles an average of approximately 1,000 units per month.

Toner cartridge recycling line at RAI

Asia-Pacific Region

In New Zealand, customers cooperate in collecting toner cartridges, and as a result the collection rate gradually improved. A similar project started in Australia in July 2001. The recycling of toner cartridges and other products as well as the recycling of parts will take priority.

Australia

Ricoh Australia

Ricoh Australia Pty, Ltd., began product collection and material recycling in September 2001. Sims Pacific Metals Limited, which is one of Ricoh's partner companies, recycles the products into raw materials. One of our partner companies, Close the Loop Limited, collects toner cartridges and recycles them into raw materials from which they produce rulers, furniture, benches, etc.

The Ricoh Australia environmental conservation staff and toner cartridge collection box

Australia

Lanier Australia

Lanier Australia Pty. Ltd., a sales company, makes arrangement for collecting used products. Collected products in good condition are recycled by the company and rented out. The remaining collected products are recycled into raw materials after removing all reusable parts. Plastic panels are recycled into building materials by AOSL. Toner cartridges are collected and recycled into materials by "Close the Loop."

Recycled products at Lanier Australia

New Zealand

Ricoh New Zealand

Ricoh New Zealand Limited began collecting toner cartridges in April 2001. Stickers giving the location of collection points are enclosed with new products, and customers attach the stickers to the outside of their packages and return the used products by mail. To improve its collection rate, Ricoh New Zealand is carrying out a campaign that offers customers who send back used toner cartridges a chance to win a new cartridge. Collected toner cartridges are recycled by Plascrete International Ltd. into raw materials to produce bricks, etc. In Victoria Park, a famous tourist attraction in New Zealand, there is a walkway made of these bricks with Ricoh's logo written on it.

A walkaway made out of recycled bricks

A slip enclosed with new products announcing a campaign that offers the user a chance to win a new toner cartridge

Social Responsibilities

A private school established by the Bangladeshi NPO, Poush, for which Ricoh started the support in 1999. The school charges no educational expenses on students, but there are many children who cannot go to school because they have to work to help their parents

It was formerly believed that brands conveyed the corporate image to the customers. As globalization progresses, more people begin to think of how the products under those brand names are manufactured and in which countries and regions or how they are collected or recycled after use. The Ricoh Group has the management philosophy, for global business expansion, to constantly create new value for the world at the interface of people and information. Furthermore, sustainable management and its practice are not just part of our corporate mission as a global citizen, but it is also a wide-ranging concept that goes together with social responsibility. As a part of our sustainable management efforts, Ricoh Group is involved in many issues including the prevention of global warming, reducing the emission of ozone-depleting substances, conserving the ecosystem, and helping to bring up healthy young people. To survive in the new century as a respected member of the global community, the Ricoh Group devotes to carrying out activities based on its corporate missions, showing respect to the culture and customs of countries all over the world. Furthermore, enthusiastic efforts are being made to promote the Group's social significance to all stakeholders, namely, its business partners (including customers, suppliers, shareholders, investors, and people in the community people), NPOs, and governmental organizations in regions where the Group is doing business.

The Ricoh Group is developing businesses all over the world under the slogan "a company should contribute to the society as a part of society." Ricoh's Code of Conduct, given below, reveals the Company's commitment to social responsibilities. Ricoh Group companies establish and put into practice their own codes of conduct pursuant to this one.

Ricoh's Code of Conduct

1. Ricoh's Basic Attitude (See pages 58–66.)

(1)Conduct sound business activities.
1) Aim toward stable growth and development.
2) Comply with social ethics and normal business practices.

(2)Promote mutual understanding with society.
1) Respect different cultures and practices.
2) Sincerely promote public relations.

(3)Support activities that contribute to society.
1) Engage in activities that contribute to local communities.
2) Create a corporate culture in which activities that contribute to society are encouraged.

(4) Respect the global environment.
1) Address environmental issues in a positive manner.
2) Manufacture products that are environment friendly.
3) Keep the prevention of pollution and the conservation of energy in mind.
4) Product recycling
5) Strive to maintain and improve the environment.

2. Employee Responsibility (See pages 67–72.)

(1)Ricoh's expectations of employees
1) Employees will comply with laws and regulations.
2) Employees will be civil.
3) Employees will act like responsible representatives of Ricoh.
4) Employees will improve customer satisfaction.
5) Employees will show initiative and creativity.
6) Employees will consider the other person's point of view.
7) Employees will align individual satisfaction with company growth.

(2)Respect basic human rights.
1) Abolish discrimination.
2) Protect individual privacy.

(3)Provide a work environment in which individual capabilities can be demonstrated.
1) Provide opportunities for self-fulfillment.
2) Respect the particular skills of others.
3) Give objective and fair performance evaluation.
4) Create a comfortable work environment.

3. Guidelines for Fair Corporate Activities

(1) Compliance with the Antimonopoly Law
1) Such meeting or agreement should not be held or made that restricts each other's free business activities.
2) Trading advantage should not be used.
3) Misleading indication should not be made and excessive premiums or prizes should not be offered.

(2)Compliance with Export-Related Laws
1) Prior verification
2) Careful judgment
3) Verification based on document

(3)Entertainment and gifts
1) Compliance with generally accepted business practices.
2) Entertainment or gift should not be offered to officials of public organizations (including former officials).

(4)Transactions with public organizations and political contributions
1) Transactions in strict compliance with related laws.
2) Illegal political contributions should not be offered.

4. Guidelines for Protecting Corporate Information

(1)Trade secrets*
1) Conformance to control regulations
2) Authorized disclosure
3) Corporate information should not be used for a private purpose.
4) Corporate information should not be obtained by illegal means.

* The term "trade secrets" refers to corporate information with asset value that has been created or obtained through normal business activities.

(2)Insider information*
1) Insider information should not be disclosed to any third party.
2) Insider information should not be used for private purposes.

* The term "insider information" refers to important internal information concerning unannounced increases or decreases of capital, new products, business tie-up, etc.

(3) Intellectual property*
1) Prompt report to the company.
2) Respecting intellectual property of third parties.
3) Comforming to disclosuring procedures.

* The term "intellectual property" refers to patents, utility model rights, designs, trademarks, copyrights, rights of layout-designs of integrated circuits, trade secrets, etc.

Established April 1, 1993
Revised December 1, 1995

Only the summaries of articles have been listed.

Customer Communication

Reviewing our daily business practices from the customers' point of view to improve management quality

One of Ricoh's management philosophies is to put itself in the other person's place[1]. The Ricoh top management strongly emphasizes its commitment towards changing anything, save Ricoh's management philosophy, that hinders the improvement of CS (customer satisfaction). To improve management quality, the Company must listen to customers' opinions, improve daily business activities, objectively check its activities and goals for improving CS, and evaluate its competitive edge.

Ricoh ranked first in the Japanese copier division of a customer satisfaction survey conducted by an independent organization for seven years in a row. The Ricoh Group's efforts in this area include continuously aiming for the Japan Quality Award[2] by identifying and analyzing its position in society, reviewing its business activities, and reorganizing its organizational structure based on analysis results. The Group will continue to review its daily business practices from the customers' point of view to further improve itself and provide innovative solutions.

1. See page 9.
2. The Ricoh Group received the Japan Quality Award in 1999. The award was established in 1995 and was modeled after the Malcolm Baldrige National Quality Award in the United States.

Japan

Local Quality Awards

Niigata Ricoh Co., Ltd., and Mie Ricoh Co., Ltd., which are Ricoh Group sales companies, were each awarded a local quality award by the governor of their respective prefectures in recognition of their distinguished management qualities. Both companies endeavor to enhance their corporate qualities, exhibit leadership qualities in the community, and improve their presence, all for the sake of their customers.

Answering Customers' Requests

In 1981, Ricoh established a "Quality Assurance Center" (now "Customer Service Center") and began efforts to improve CS long before CS began attracting people's attention. Ricoh believes that complaints are gifts from our customers and those complaints may lead to ideas for new products. Customers who file complaints at the customer service center are often loyal users of our products. Ricoh has a database of customers' opinions that top management and those related to product planning divisions can refer to. Any opinion can be retrieved the day after it is made. The directors themselves handle the more serious complaints by investigating the source of the problem, determining management issues, and finding solutions.

Target of Service Quality at the Customer Service Center (Target Based on Actual Results)

Telephone connection rate	How often calls make it through to the center (no busy signal)	85% or more
Immediate solution rate	How often problems are solved on the first call	90% or more
Waiting time	How long the caller is kept waiting on the phone	Under 20 seconds
E-mail response time	Number of days to answer e-mail	Within two days
Customer satisfaction (CS)	Questionnaire on CS*	90 points or more

* Questionnaires are sent twice a year via fax and e-mail to approximately 270 customers.

Ricoh's customer service center

Customer Support in an IT-Oriented Era

As a result of progress made in information technology (IT), office networks are getting more and more complicated in a multivendor environment in which machines of diverse brands coexist.
For the purpose of troubleshooting a customer's network system, Ricoh established the Network Call Center, which provides high-level customer support services based on an advanced computer technology integration (CTI) system.

Network Call Center

The Americas

The United States

Improvement in CS and Accessibility

The Ricoh Group engages in business activities in the United States as well as Japan under the belief that CS and social contribution (in the form of environmental conservation) should work in tandem. Ricoh Corporation organizes customer complaints in a particular format and reports them to the president at meetings in an attempt to find ways to improve. To facilitate communication with customers with hearing problems who may find it difficult using the services that the service center provides, the company provided teletypewriters, which enables communication between those customers and us using character entries over telephone lines, to the center and other relevant facilities in June 2001. Thus, the Ricoh Group strives to improve the accessibility to customer services.

China and Taiwan

Hong Kong

Ricoh Hong Kong's Customer Relations Management (CRM)

Ricoh Hong Kong manages customer information and product use/sales records on its IT system and utilizes it in making appropriate proposals to customers. Also, the company makes efforts to improve customer satisfaction by organizing customer support units specialized in handling complaints and by giving complaint-handling systems operation training to all company employees.

Environmental Communication

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

The Ricoh Group considers all stakeholders, including customers, the local community, employees, administrations, and client companies, as green partners. The Group strives to contribute to reducing the environmental impact of society as a whole by disclosing its goals and know-how obtained through group activities to stakeholders. The Ricoh Group, therefore, endeavors to disclose information that is useful to its green partners as well as to provide interactive communication. In addition, the Ricoh Group makes use of the opinions of its green partners to improve environmental activities of the Ricoh Group as a whole.

Stakeholders and Information Disclosure Measures

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

Sustainability Reports

The Ricoh Group's environmental report has been issued annually since its first publication in April 1998, which disclosed fiscal 1996 data. An English version of the Japanese-language report has been published since the fiscal 1998 edition, which was released in January 1999, to disclose information to our diverse green partners as well as to promote interactive communication through a facsimile questionnaire system*. As far as English version is concerned, the title has been improved to "Sustainability Report" since 2001.

Ricoh business sites and affiliates issue similar reports. Ricoh's Fukui Plant, Ricoh Unitechno Co., Ltd., and Tohoku Ricoh Co., Ltd., followed by Ricoh Industrie France S.A. and Ricoh's Atsugi Plant in fiscal 2001. To encourage as many business sites as possible to issue their own reports, guidelines were set up in both Japanese and English on creating reports on each business site and added to the Ricoh Group's database.

* Only the Japanese version is available. See page 83 for questionnaire results.

Number of Copies Issued

	Language	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	20,390 (As of June 30, 2002)	74
	English	Dec. 2001	7,000	

Environmental reports of Ricoh business sites and Ricoh Group affiliates

Environmental Web Site

Ricoh's environmental Web site includes information on a variety of topics, such as the Ricoh Group's activity updates as well as links to ECO TODAY[1], an environmental education tool aimed at elementary and junior high school students. ECO TODAY was created jointly by Ricoh and students from Yokohama Digital Art School. ECO TODAY presents familiar examples of global environmental issues and introduces countermeasures adopted by Ricoh. In fiscal 2001, Ricoh received an excellent award from "Environment *goo*[2]," an environment-oriented portal site, for its ECO TODAY Web site and received the "Eco Web Prize[3]." In fiscal 2001, Ricoh's environmental Web site had 1,070,985 visitors, approximately 400 thousand more than the previous year. Ricoh promotes interactive communication by meeting the high school and university students with whom it corresponds by e-mail.

Ricoh Home page

1. http://www.ricoh.co.jp/ecology/ecotoday/index_h_eng.html
2. http://www.eco.goo.ne.jp/ (Japanese language only)
3. http://www.ecology.or.jp/ecoweb/topics.html (Japanese language only)

Disclosing the Environmental Impact Information of Products

The Ricoh Group discloses the environmental impact information of its products through Type I and II Environmental Labels and Type III Environmental Impact Disclosure[1]. As the global trend toward green procurement grows, the environmental impact information of products is indispensable for customers wishing to choose products that have less environmental impact. Therefore, it becomes increasingly necessary for the Ricoh Group to give precise and timely product information at the time of marketing. In fiscal 1999, the Ricoh Group first carried out Type III Environmental Impact Disclosure[2] in Japan on its imagio MF 6550 digital copier based on an independent certification (BVQI, Sweden). RIFAX ML 4500, a facsimile, also acquired the BVQI certification in fiscal 2001. The Ricoh Group is planning to disclose its environmental impact information under the Type III ECO-Label of the Japan Environmental Management Association for Industry (JEMAI). To facilitate the timely disclosure of product information the Ricoh Group is planning to announce a new set of standards, in which the calculation of data would be certified instead of individual machines.

1. See page 41.
2. Disclosure of the environmental impact information of a product throughout its life cycle http://www.ricoh.co.jp/ecology/e-/label/type3/index.html

Environmental Advertisements

Ricoh makes advertisements that help reduce the environmental impact of society as a whole. Examples include ads that explain the environment-friendly function of a product to municipal authorities and companies, which promotes green procurement activities, and ads that introduce case studies that should be regarded as useful to people who promote environmental conservation activities from diverse standpoints. In fiscal 2000, Ricoh started creating and placing magazine advertisements that describe the importance of biodiversity protection and gave examples of a forest ecosystem conservation project[1] that it conducts in partnership with NPOs. In fiscal 2001, Ricoh Hungary Kft.[2] started creating and placing advertisements that heighten people's awareness of environmental conservation.

1. See page 61.
2. See page 44.

Above: An advertisement explaining an environment-friendly function of a product
Below: An advertisement giving examples of environmental conservation

Top: An advertisement stating the importance of biodiversity protection
Bottom: Ricoh Hungary's advertisement for environmental awareness promotion

Environmental Lectures

The top management of the Ricoh Group eagerly gives lectures on their own volition to explain the importance of environmental conservation and give an idea of an environmental management system. In fiscal 2001, the Ricoh Group made strong efforts toward social contributions to improve communication with green partners by participating in company lectures, academic societies, and symposiums.

Major Environmental Lectures (Ricoh)

FY	Number of lectures
1999	43
2000	66
2001	50

* Number of lectures performed by Corporate Environment Division
Activities have also been conducted by internal divisions.

Exhibitions

Ricoh actively takes part in environmental activities at such exhibitions as Eco-Products, which is held in Japan, and CeBIT, which is held in Europe, to bring attention to the environmental performance of its products. At Eco-Products 2001, Ricoh attracted visitors with such exhibitions as the Aficio (imagio Neo) series[1], and rewritable printers and paper[2].

1. See pages 32, 47, and 48.
2. See page 32.

Eco-Products 2000

CeBIT (Germany)

Social Evaluation

In the World's Most Respected Companies survey, an annual survey conducted by the *Financial Times*, a U.K. business newspaper, Ricoh was chosen by global CEOs as the world's seventh most respected company in the "most environment-conscious" category. The Company received the highest "eco-rating," AAA, in the photograph and office equipment categories from Innovest Strategic Value Advisors, a U.S. investment research company, and ranked first among 11 nominees. Ricoh also ranked first among 16 nominees in a rating survey conducted by Ökom GmbH, Germany, in environmental, social, and cultural aspects. In Japan, the Company ranked second in the 5th Corporate Environmental Management Level Survey organized by *Nihon Keizai Shimbun*. Ricoh also received the 7th Information Disclosure Award for Listed Companies by Tokyo Stock Exchange Inc. for its remarkable performance in disclosing information to investors. Furthermore, in fiscal 2000 Ricoh received grand prize in the Corporate Contribution to Society Survey held by the Asahi Shimbun Cultural Foundation.

The *Financial Times* (December 17, 2001)

Social Contribution Activities

Contributing to making societies better the world over

To create a society that is at ease with itself and live without harming the natural environment, it is essential for all global citizens, including national governments, companies, citizen groups, and other individuals, to offer ideas and cooperate with each other. For this to happen, private citizens, governments, companies, NPOs, and other groups need to establish closer relationships with one another. One of the most important requisites for business enterprises is demonstrating leadership in their communities while improving communication through proper information disclosure, building up relationships based on mutual trust and good partnerships, and creating a society that is at ease with itself. The Ricoh Group, based on the Spirit of Three Loves* (love your neighbor, love your country, and love your work), endeavors to enthusiastically communicate with local governments and citizens the world over.

*See page 9.

International

Participation in the UN Global Compact

On April 8, 2002, Ricoh agreed on and announced its participation in the Global Compact, a United Nations initiative consisting of nine principles covering topics in human rights, labor, and the environment. In 1999, UN Secretary-General Kofi A. Annan advocated the Global Compact* to world business leaders. At present, there are approximately 500 business enterprises taking part in this initiative. Ricoh is the second Japanese company to announce its participation in the initiative, which contributes to the Ricoh Group's global efforts.

* http://www.unglobalcompact.org

Demonstrating Leadership to Prevent Global Warming

In July 2001, Ricoh was the first leading Japanese company to join "e-mission 55," a petition to encourage countries to adopt the Kyoto Protocol. Ricoh opened the door for other Japanese companies to support the protocol. The European Business Council and U.S. Business Council recognized this achievement and awarded Ricoh the "Climate is Business" award. Besides Ricoh, Jan Pronk, COP6 president (who concluded the Bonn Agreement at COP6) and Minister of Housing, Spatial Planning and the Environment of the Netherlands, received the same award.

The "Climate is Business award" ceremony and the trophy

Forest Ecosystem Conservation Project

● **The Importance of Forest Conservation and Restoration**

We are now in an era of large-scale wildlife extinction. Among the approximately 4,000 species of mammals, 1,069 are approaching extinction. A good example is the panda, of which there are only about 1,200 in the world. Such increase in the number of endangered species must, at least in part, be attributable by a decrease in the size of their habitat. A good portion of the world's wildlife lives and contributes to the ecosystems of a variety of habitats around the globe, including forests, savannas, lakes and ponds, coral reefs, and oceans. The destruction of an ecosystem would inevitably lead to the destruction of the water system, air, climate, soil, and other parts of the natural environment that humans depend on to live. We, as humans, are necessary to conserve all the ecosystems on earth. To this end, Ricoh is developing social contribution activities that focus on forest ecosystems, which are especially blessed with a large variety of wildlife.

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

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

The flag species of the area are listed under "purpose." The above projects strive to conserve the forest ecosystem in the areas as well as the flag species.
* See page 62.

Activities Funded by the Ricoh Group's Expenses

Country	Project	NPO		
		Name	Description	Web site
Sri Lanka	Conservation and restoration of forests in world heritage areas	Field Ornithology Group of Sri Lanka	Research of birds in Sri Lanka and domestic and international environmental conservation activities through the protection of wild birds	—
Brunei	Conservation of virgin mangrove forests	Ramsar Center Japan	Conducting activities to promote the ratification of the Ramsar Convention (on Wetlands) in Asia and the appropriate utilization of wetlands	http://www.museum-japan.com/rcj/
Madagascar	Survey of the canopy in forests	Pro Natura	International NPO conducting forest conservation activities in Asia and Africa	—
Bangladesh	Restoration of *satoyama* (community forests)	Bangladesh Poush	Providing environmental education, especially to children, and promoting afforestation activities in Bangladesh	—
Malaysia	Restoration of riverhead forests	OISCA	Promoting the independence of local communicates and environmental conservation through rural development and greenery activities in the Asia-Pacific region	http://www.oisca.org
Ghana	Restoration of the corridors of the cacao trees growing in the shades	Conservation International	Using funds and human resources for the conservation of biodiversity (1,200 members in 32 countries)	http://www.conservation.org

● Promotion of Activities through Partnerships

Forest conservation activities are almost impossible to carry out without the understanding and cooperation of local communities. Therefore, it is important to help those communities become more environmentally aware because once they are, they will gladly help out as much as they can. In poorer regions, it is also important to offer jobs to the local community in the areas of forest restoration, afforestation, forest management, and resource recirculation. With this in mind, Ricoh continued its efforts to conserve forest ecosystems by initiating eight projects in fiscal 1999 and fiscal 2000, by starting three additional projects in fiscal 2000, by forming partnerships with environmental NPOs, and by taking into careful consideration local communities where the projects are conducted. Through these activities, local communities became more environmentally aware, which greatly promotes social contribution. Local communities became more aware of the importance of the natural environment when they observe how determined Japanese companies are about conserving it. In Japan, Ricoh stresses the importance of forest ecosystem conservation through advertisements in magazines*. In April 2002, Ricoh conducted an eco-tour to plant trees on Huangtu Plateau in China.

* See page 60.

Conservation of virgin mangrove forests (Brunei)

An eco-tour to plant trees on Huangtu Plateau in China

Japan

Continuous Promotion of Social Contribution

Ricoh established a system in which a social contribution reserve is created to continue social contribution activities. With the approval of shareholders at their general meeting, the Company reserves an amount equal to 1% (maximum ¥200 million) of its annual profit after dividends to fund its social contribution activities.
In fiscal 2001, the reserve was used for social contribution and forest ecosystem conservation as well as to establish and manage the Ichimura School of Nature.

Sound Education of the Youth

The Ichimura School of Nature, an NPO, is where children from the 4th grade (10 years old) of elementary school to the 2nd grade (14 years old) of junior high school spend every two weekends a month plus summer vacation together to grow crops. The school's basic aim is to help children learn how to earn a living from mother earth through experience and community living. The Company started a project commemorating the 100th anniversary of the birth of Kiyoshi Ichimura, the founder of the Ricoh San-ai Group, and opened the Ichimura Kanto School of Nature on March 30, 2002. In the 2003 spring, the Company plans to open a school in Saga Prefecture, where Ichimura was born.

Entrance ceremony at the Ichimura Kanto School of Nature

Ricoh Kids Workshop

Ricoh completely supports the Ricoh Kids Workshop organized by the New Technology Development Foundation (Ichimura Foundation)*. At the workshop, children from the 4th grade of elementary school to the 3rd grade of junior high school enjoy getting hands-on experience disassembling laser printers and facsimiles to see how they work. In fiscal 2001, the workshop was held twice, once in Tokyo and once in Aomori, and attended by 135 children.

* In 1968, Kiyoshi Ichimura, the founder of Ricoh, established the New Technology Development Foundation (Ichimura Foundation) to commend and support technological development and research that contributes to society. The foundation finances new technology development, plant research, and the promotion of the creativity of children.

Partnerships with Schools

Ricoh's Fukui and Gotemba Plants and Ricoh Elemex Corporation periodically invite children and students in the neighborhood to promote their awareness of environmental conservation.

At the Okazaki Plant, Ricoh Elemex

At the Ena Plant, Ricoh Elemex

FreeWill Social Contribution Club

For the purpose of promoting voluntary social contribution activities by employees, Ricoh established a social contribution club in January 1999 called FreeWill. Employees voluntarily donate a fraction of their salaries for social contribution activities. Ricoh supports those activities under a gift-matching program, in which the Company matches the amount of contributions made by employees. The club has supported more than 60 organizations, including the Japan Marrow Donor Program (JMDP) and the Association for Aid and Relief, Japan. As of the end of February 2002, there are more than 2,000 members.

Japan

Partnerships with NPOs

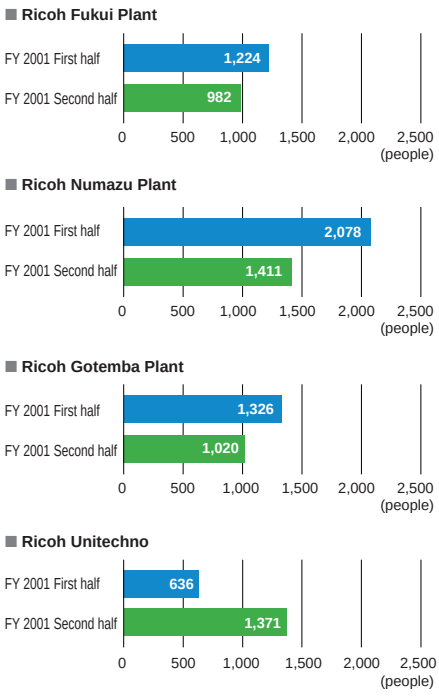
Ricoh makes contributions to various organizations, such as the Nature Conservation Society of Japan[1], the Wild Bird Society of Japan, WWF Japan, the Green Earth Network[2], and the Ecosystem Conservation Society—Japan[3]. The Company also invited WWF Japan to hold its Global Warming Prevention Business Workshop on its premises.

1. http://www.nacsj.or.jp/introduction-e/1-profile.html
2. http://member.nifty.ne.jp/gentree/ (Japanese language only)
3. http://www.ecosys.or.jp/eco-japan/public/english/index.htm

Partnerships with Enterprises and Administrations

The Ricoh Group achieved Zero-Waste-to-Landfill at all production sites around the world. The Group welcomes people from enterprises and administrations to visit the Group's business sites and readily shares its know-how.

Number of People to Visit Major Plants



Nurturing Volunteer Leaders

The Ricoh Group believes that in addition to conducting environmental conservation activities as a group, it is important for employees to volunteer for both company-run and outside environmental conservation and social contribution activities.
In June 1999, the Ricoh Group launched a leadership-training program for Ricoh employees to promote environmental conservation activities. In fiscal 2001, the program was expanded to include the Ricoh Group's employees and retirees. By the end of fiscal 2001, as many as 142 employees and directors of Ricoh and the Ricoh Group became environmental volunteer leaders. The leadership-training program consists of training sessions called "Ricoh Nature Seminars" and meetings called "Ricoh Company Meetings for Environmental Volunteer Leaders." Following the training at nature seminars, each leader develops environmental volunteer activities in close cooperation with relevant divisions or with the local community. Ricoh provides support in promoting these activities.

● Ricoh Nature Seminars

Ricoh nature seminars aim at turning employees into environmental volunteer leaders by teaching them how to enjoy the natural environment and implement environmental conservation activities. Each seminar lasts for two days and is attended by approximately 15 participants. In fiscal 2001, the seminar was held three times, and a new intermediate course was offered. Members of the Wild Life Bird Society of Japan, an environmental NPO, were invited to give lectures at the seminar. From them, participants learned how to preserve *satoyama* (community forests), which has a good system to follow when creating a resource-recirculating society, and how to participate in environmental conservation activities, beginning with bird watching. Participants also made "eco soap" from used edible oil and took part in bamboo grass cropping as a way of preserving *satoyama*.

The intermediary course at a Ricoh nature seminar (first session)

The elementary course at a Ricoh nature seminar (ninth session)

● Ricoh Company Meetings for Environmental Volunteer Leaders

The aim of Ricoh Company Meetings for Environmental Volunteer Leaders is to update environmental volunteer leaders on each other's activities. The leaders report on the environmental volunteer activities that they organized, exchange information with each other, and learn how to improve the quality of their activities. Four Ricoh Company Meetings for Environmental Volunteer Leaders were held in fiscal 2001. The leaders were divided and attended separate meetings because their number was too large for a single meeting.

● Activities of Environmental Volunteer Leaders

In fiscal 2001, there were 28 activities and a total of 787 participants. Environmental volunteer leaders conduct different activities with the company divisions and communities to which they belong as well as with their friends and families. Recently, leaders often form groups for ongoing activities. One group was formed by five volunteer leaders in November 2000 to protect the thickets of Hadano. Yadoriki Shinbokukai, a community organization, has been helping with the afforestation of the Kanagawa riverhead since January 2001. In November 2001, several volunteer leaders from the Ricoh Central Research Center began periodically monitoring historic buildings located at Seseragi Park next to the center in an attempt to preserve them.

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

Cleaning up Oiso Beach
Volunteer leaders cleaned up Oiso Beach in Kanagawa Prefecture. The beach looked clean at first, but upon closer inspection it was found to be littered with garbage.

Cleaning around historic buildings at Seseragi Park
Volunteer leaders assess historic buildings and peripheral areas for damages every two months and carry out repairs, if needed.

Yadoriki Shinbokukai (a community organization)
Yadoriki Shinbokukai works with Kanagawa Prefecture on riverhead forest conservation. The organization's monthly activities include forest conservation, afforestation, and nature walks.

Distributing garbage bags and cleaning up after the Tamagawa Fireworks Festival
Volunteer leaders distributed garbage bags and asked spectators to sort and dispose of their garbage appropriately.

Cleaning around the Atsugi Plant
Twenty-nine volunteers working at the Atsugi Plant cleaned up the park, roads, and riverbeds around the plant.

Planting palm trees in the Hakata Bay Area
Volunteer leaders planted 500 palm saplings and learned about the inhabitants and the status of pollution in the area.

River and Wind Festival—Cleaning up the Tsurumi River
Volunteer leaders participated in the River and Wind Festival organized by the Green, River, and Wind Group, a local environmental NPO. At the festival, children were taught how to make bamboo wind chimes.

Protecting the Ohsone Wetland Biotope
Volunteers from Ricoh Unitechno joined a group to protect of the Ohsone wetland biotope. They examined and stocked the water with fish and cleaned the area.

Festa Costa del Gomi (Seaside Festival of Garbage) in Senbonhama
Volunteer leaders participated in cleaning up a stretch of beach in Numazu City. The participants from Ricoh filled up several 40-liter garbage bags with trash.

Activities at a Kamakura beach
Volunteer leaders clean up beaches and build sand sculptures. The number of participants increases every year.

"Hometown Forest" at the Gotemba Plant
Volunteer leaders constructed a hometown forest, complete with a pond and brook, on the plant's site. At the opening ceremony, the volunteers and the local children stocked the brook with killifish and other fish.

Improving Accessibility

The United States: Ricoh Corporation

In the United States, section 508 of the Rehabilitation Act took effect in June 2001. This federal law requires IT products and services to be accessible to people with disabilities. Accordingly, Ricoh Corporation commissioned an independent organization to evaluate the accessibility of its Aficio 1045 (imagio Neo 450) digital multifunctional copier and 5000L facsimile in order to improve it. Furthermore, Ricoh Corporation invited government officials and held the Accessibility Forum in August 2001 to present the Ricoh Group's ideas and activities related to accessibility.

Activities that Support Restoration Efforts in New York

Ricoh Corporation, Ricoh Business Systems, and Savin

Ricoh Corporation and Savin Corporation have offices in a suburb of New York, and Ricoh Business Systems Inc. has one in Manhattan.

Immediately after the September 11 terrorist attack, the companies looked after the safety of their employees and announced emergency guidelines to follow, such as encouraging employees with missing family members to place their family before their work and to use offices as shelters for staff who were obliged to stay in Manhattan, if necessary. The Jacob Javit's Center, located near ground zero, was designated as an emergency center by the Federal Bureau of Investigation (FBI) and the Federal Emergency Management Agency (FEMA) right after the attack.

A building on 5th Avenue in New York City

Because Ricoh's exhibition was scheduled to be held in the center from September 12, the copiers, printers, and facsimiles that were to be used in the exhibition were donated to the FBI, the New York City Police, the American Red Cross, the Mayor's Office, and others. The machines were used to make color copies of photographs of missing persons, copies of DNA identification, and a large number of American flags for distribution. The Office of Emergency Management (OEM), which was located in the World Trade Center building, opened a temporary office at the Hudson River pier and made use of Ricoh's products. In addition, Ricoh Corporation, Ricoh Business Systems, and Savin offered to help transport and set up the equipment they donated and provided instructions to hospitals, offices, and first-aid stations on their use upon request. Savin Corporation took special action in providing Ricoh products to the Pentagon in Washington, offering 250–300 units in total.

As the restoration work progressed, an American flag was draped across the 5th Avenue building where Ricoh Business Systems' office is located as a sign of respect to all those who suffered as a result of the attack.

Activities with Government Administration

The United States: REI (Ricoh Electronics, Inc.)

The Reprographic Supply Group the Thermal Media Group of REI were chosen to participate in the National Environmental Performance Track organized by the U.S. Environmental Protection Agency (EPA). The groups were chosen because they 1) strove to carry out their environmental responsibilities systematically, 2) took new measures to prevent and alleviate pollution, and 3) demonstrated leadership in environmental conservation in local communities as a good corporate citizen.

An REI representative receives an EPA participation certificate

Volunteer Activities (Cleaning)

The United States: REI

In March 2002, REI received the Local Community Contribution Award from the Points of Light Foundation (POLF) for its dedicated volunteer activities. More than 100 employees at REI's California plant cleaned up a nearby canal and collected 800 pounds of garbage and 700 pounds of recyclable waste. At its Georgia plant, 22 employees cleaned up a park in the neighborhood and collected 4,000 pounds of garbage and recyclable waste.

Former President George Bush, founder of POLF, and REI representatives

Employees cleaning up a canal near the California plant

Employees involved in cleaning up a park near the Georgia plant

Volunteer Activities (Afforestation)

Mexico: Ricoh Industrial de Mexico (RIM)

In July 2001, 86 employees of RIM participated in a reforestation project for Nevado de Toluca. After a Toluca municipal clerk explained the importance of greenery and methods of planting trees, the RIM employees planted 1,400 trees.

RIM employees planting trees in a reforestation project

Europe

Environmental Social Contribution Award

The Netherlands: NRG Benelux

Being ranked first among 152 Dutch companies by Dutch evaluation company KPMG, NRG Benelux B.V., a Ricoh Group sales company, received the Environmental Social Contribution Award.

Community Interaction

The United Kingdom: Ricoh UK

Ricoh UK Ltd. donates used Christmas cards and CD-ROMs to a nearby kindergarten. The Christmas cards are given to the children to practice using scissors to clip the pictures out, and the CD-ROMs are used as decorations for parties, etc.

Donated Christmas cards

CD-ROMs to be used as decoration for parties

Contributions to the Global Environment

The United Kingdom: Gestetner Ricoh Advanced Materials (GRAM)

Gestetner Ricoh Advanced Materials Ltd. (GRAM) is a Scottish company that manufactures ink for the Priport printer. In December 2001, they received the East District Prize of the VIBES Award, a regional environmental award. GRAM won the award because the company's highly advanced wastewater treatment was highly evaluated.

Supporting Schools and Creating Jobs

Ricoh Hungary

Ricoh Hungary Kft. supports a neighborhood technical school by donating funds, donation of products as education material, and providing technical support. The company hires some of the school graduates. Half of the 16 employees in the after-sales service department are graduates of the school.

China and Taiwan

Charity Walk

Ricoh Hong Kong

Members of the Social Club and other employees participated in the Walk for Millions charity. To further social contributions on its own part, they ordered caps and windbreakers with the Ricoh logo for the event from a company that hires the physically challenged. Approximately 200 employees wore the cap and windbreaker in the charity walk.

Ricoh Hong Kong employees participating in the Walk for Millions

Participating in Afforestation Activities and Giving Donations

Ricoh Hong Kong

Ricoh Hong Kong donated HK$300,000 to restore a forest in Sai Kung, Hong Kong, that was destroyed in a fire. The company also began participating in afforestation activities in which 10,000 trees are scheduled to be planted in three years.

Ricoh Hong Kong employees at afforestation activities

Volunteer Activities (Cleaning)

Taiwan Ricoh

On June 1, 2001, employees of Taiwan Ricoh Co. Ltd. collected trash scattered along the road within 3 km of its plant to commemorate the anniversary of the company's foundation. Sixty-nine employees collected 161 kg of trash while singing a garbage-collecting song.

Taiwan Ricoh employees cleaning up the area around its plant

Asia-Pacific Region

Supporting an Organization that Assists the Mentally Challenged

Ricoh Australia

In March 2002, Ricoh Australia Pty, Ltd. held a charity golf tournament and donated the profit to the Sunnyfield Association, an NPO that assists the mentally challenged. The donation was used to establish a vocational training center for the mentally challenged. To date, Ricoh Australia has donated a total of A$500,000 to the association.

Groundbreaking ceremony for a vocational training center for the mentally challenged

Environmental Education and Awareness Promotion

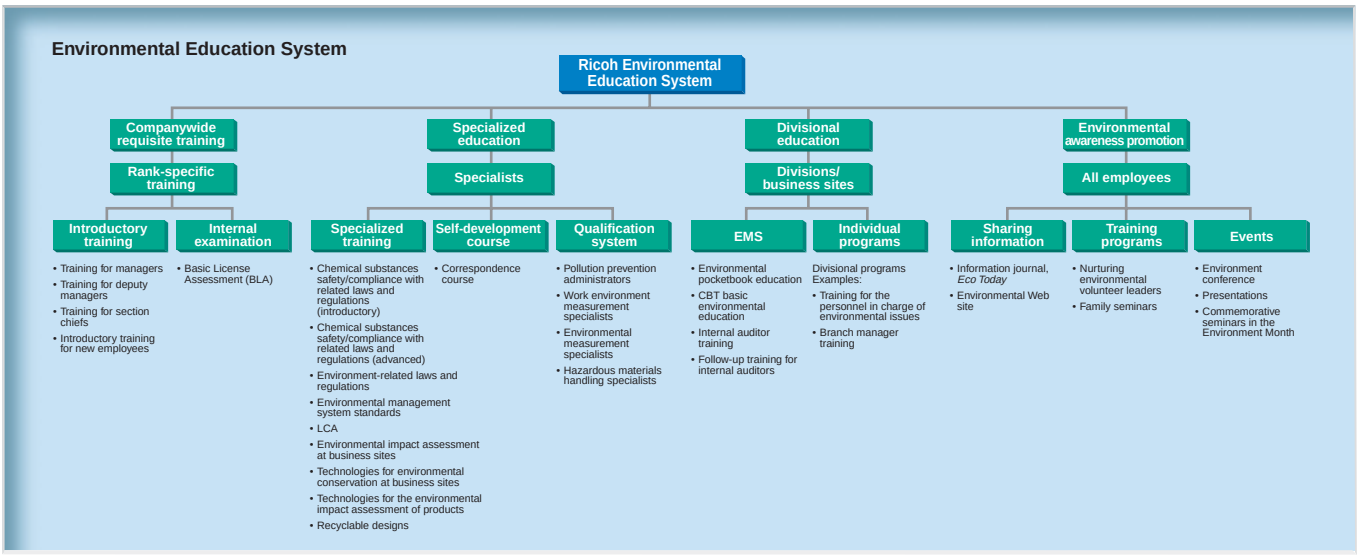
Promoting employee awareness of environmental issues through environmental education and awareness promotion activities

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

Sharing Know-How

Ricoh established a database in Japanese and English that anybody in Ricoh Group companies all over the world can search or update with the latest environmental information. Sharing the latest information and know-how about environmental conservation activities works very effectively in the Ricoh Group. The Ricoh Group periodically publishes the environmental information journal *Eco Today*, which contains regional activities and external opinions of people, including those from environmental NPOs. Thus, the Ricoh Group promotes employee environmental awareness from a broad perspective.

Ricoh Group's environmental information journal *Eco Today*



Five-Region Environment Meetings

In December 2001, a five-region environment meeting was held at Ricoh's Omori Office attended by each region's representatives. Some of the sessions at the meeting were held according to themes, such as green marketing and recycling. The participants shared information to promote global environmental management.

Zero-Waste-to-Landfill Activities

The Ricoh Group achieved Zero-Waste-to-Landfill* at production sites worldwide as well as at its Japanese nonproduction sites and marketing and after-sales service sites. Such achievements can be obtained only if all employees are closely united and are striving for the same goal, such as setting up detailed waste sorting. Therefore, promoting employee awareness of environmental issues is highly effective.

* See pages 39, 42, and 46.

Japan

Environmental Education

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

Environment-Related Seminars and Number of Participants

Name of Seminar	FY 1998	FY 1999	FY 2000	FY 2001
Recyclable Designs	18	21	32	13
Technologies for the Environmental Impact Assessment of Products	22	22	26	27
Environment-Related Laws and Regulations	52	81	66	59
Environmental Management System Standards	69	8	30	35
LCA	20	46	—	18
Chemical Substance Safety/ Compliance with Related Laws and Regulations (Introductory)	19	29	25	30
Chemical Substance Safety/ Compliance with Related Laws and Regulations (Advanced)	18	26	16	29
Technologies for Environmental Conservation at Business Sites	16	—	10	3
Environmental Impact Assessment at Business Sites	36	—	13	8
Total Number of Participants	270	233	218	222

The Ricoh Group Environmental Conference

In December 2001, the people in charge of environmental issues from five regions gathered for the Eighth Ricoh Group Environmental Conference. Ricoh president Masamitsu Sakurai gave a speech on the promotion of sustainable management, and a representative from Sony Corporation, a company that is world renown for its advances in environmental conservation, gave a speech as well. In November 2001, Ricoh Unitechno held its Second Environmental Conference, inviting residents and people from the local government.

The Eighth Ricoh Group Environmental Conference

Nurturing Environmental Volunteer Leaders

An employee awareness survey revealed that many employees were interested in environmental volunteer activities but had never participated in them. To support these employees, Ricoh started a leadership-training program* in 1999. Environmental volunteer activities are indispensable tools in promoting employee awareness of environmental conservation. Employees can truly understand the importance of environmental conservation more by actually taking part in volunteer activities and sharing what they have learned than by simply reading about it in books.

* See page 63.

Promoting Awareness through Lectures

Ricoh started a month-long campaign to promote employee awareness of environmental conservation in fiscal 2001. As part of this campaign, Ricoh gave lectures throughout the month. In fiscal 2002, any participant from local communities is welcome to share the information they have. FreeWill*, a social contribution club, asked supporting organizations Medicines Sans Frontiers and the Hearing Dog Training Association to give speeches to promote the awareness of social contribution.

* See page 62.

Commending Environmental Activities

Ricoh commends employees for their outstanding performances in environmental conservation activities by awarding “the Minori Prize” in recognition of various activities. Along with this, Ricoh is planning to establish a unique system to commend Ricoh Group companies for their outstanding environmental conservation activities.

The Americas

The United States

The Americas Meeting on the Environment

Ricoh Corporation (New Jersey) holds regular meetings on the environment for those in charge of environmental issues at Ricoh, Savin, and Lanier. The meetings take place in the form of teleconferences to produce time efficiency and to eliminate the environmental impact of traveling to a particular meeting site. At the March 2002 meeting, presentations were given, including one by Savin on its efforts to promote toner cartridge collection.

The Americas meeting on the environment (March 2002)

Europe

European Meeting on the Environment

In February 2002, the European Environment Meeting was held at Ricoh Industrie France with 55 participants from 28 companies in 13 countries. The main agenda included efforts by companies for subsequent developments following ISO 14001 acquisition, seminars on the EU Directive on Waste Electrical and Electronic Equipment (WEEE) (European regulations for recycling scheduled to be enforced in 2006), and the promotion of the collection and recycling of toner cartridges and other products. Because tens of thousands of recovered machines were marketed throughout Europe in fiscal 2001, the meeting has been handled by personnel in charge of environmental issues as well as marketing directors in charge of developing environment-oriented businesses.

The United Kingdom

Ricoh UK Ltd.

Ricoh UK distributes its in-house newsletter *CHEW* to promote employee awareness of environmental conservation, health and safety. As part of its energy conservation practices, the company set up an intranet which enables all employees to know the amount of electric power consumed in their division. In November 2001, the staff in charge of environmental conservation, safety and health gave awareness-promotion presentations to all employees.

France

Ricoh France S.A.

To promote environmental conservation activities both within and outside the company, Ricoh France has prepared a brochure distributed to all 1,500 employees. By the end of March 2001, 60% of all employees had taken environmental conservation training.

Hungary

Ricoh Hungary Kft.

Ricoh Hungary conducted its own educational program for all 65 employees by using a handbook issued by the International Environment Association Hungary Office to cover such general issues as environmental conservation and office equipment with less environmental impact. The company is planning to hold a regular meeting for its customers as well as its employees.

Asia-Pacific Region

New Zealand

Ricoh New Zealand Ltd.

To improve customer satisfaction, Ricoh New Zealand introduced a coaching system that promotes employee awareness of customer satisfaction.

Personnel-Related Measures

Establishing a system to nurture employees' sense of challenge and provide society with new values

In accordance with the Ricoh Group's 14th mid-term management plan, which started in fiscal 2002, Ricoh gives top priority to becoming the winners in the 21st century by being the World No. 1 Product Engineering Company. To this end, Ricoh strives to fulfill the Group's vision of being a vibrant company in which employees work earnestly, are self-motivated, and have such enthusiasm that the company is able to generate the largest profit ever. In such a vibrant company, employees are able to 1) share the same clearly defined vision, 2) set challenging goals, 3) obtain satisfactory results and be fairly evaluated and treated, and 4) be proud of being a part of the Ricoh Group. The Ricoh Group is creating a corporate culture that facilitates self-motivation and a creative business structure for all employees and continues to provide quality and benefits to customers and society as a whole by establishing a system that satisfies all the above items. In an increasingly global society, Ricoh would like to improve its existing systems and establish new ones so that eager and able employees will always have the chance to work in a responsible position regardless of gender, age, nationality, race, or religion.

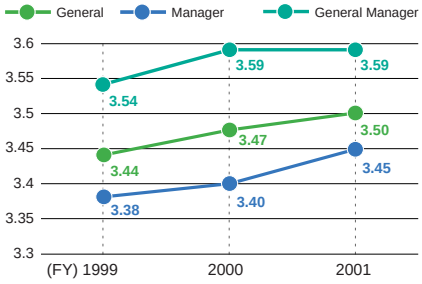
Promoting Change by Having a Clearly Defined Vision

To successfully respond to changing customer needs, the management structure, administration, system, and leadership behavior all need to be flexible enough to change accordingly at a moment's notice. To achieve this, all employees need to have the same clearly defined short-term vision. Only then, can they be aware of issues and the necessity of change. It is essential for top and other managers to embody the corporate vision and promote change. Such a new managerial environment needs a new kind of manager or leader, one who not only solves or isolates problems but also initiates change according to a clearly defined vision. This plan also requires groups of people who share their own vision with their new leaders to plan and make creative changes to achieve goals. In 1998, Ricoh defined leadership behavior and established the Development Program for Innovative Leaders (DPI) to reform groups led by innovative leaders. The program is implemented at Ricoh and Ricoh Group companies in Japan. Under this program, leaders are evaluated by their subordinates and business associates in such areas as attitude toward and dealing of issues, treatment of subordinates, and basic attitude. The results of the evaluation are then given to the leaders. Other efforts to bring about change using a clearly defined vision include holding seminars to enhance leadership behavior toward change and establishing a database of the best ways of cultivating such behavior, which all Ricoh Group employees in Japan can access.

Areas of Leadership in which Ricoh Expects Innovative Leaders to Improve

- Vision (Showing the right direction)
- Change (Striving for improvement)
- Pursuit of goals (Motivating the whole group to achieve goals)
- Empowerment (Giving motivation)
- Development of human resources (Helping employees develop their abilities)
- Basic attitude (Leading by example)

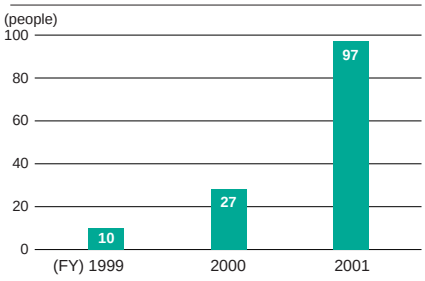
Changes in Total DPI Evaluation Scores over the Past Three Years from Subordinates and Business Associates



Systems that Encourage Employees to Tackle Challenges in Jobs They Want to Do

Establishing a system that encourages employees to tackle challenges in jobs they want to do is indispensable in employee motivation. In the past, most personnel transfers were done according to the needs of the Company. Now, Ricoh implements a system in which personnel transfers are determined according to the aptitude and desire of the employee and through discussions with supervising managers. The Objective-oriented Interview and Evaluation System and Professional Development Program (PDP) are two examples. Those chosen will be able to display their self-motivation and creativity. Ricoh also establishes an in-house staff recruitment system in which employees volunteer to tackle challenges in jobs that they want to do.

Number of the Employees Transferred according to the In-House Staff Recruitment System

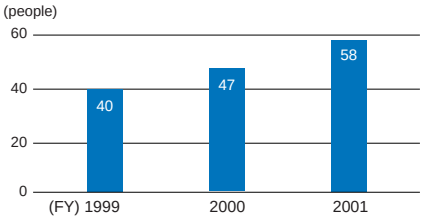


Re-Employment of Retirees

In an aging society with fewer children, it is important for the Company to make use of the vast expertise and advanced skills that retirees possess to maintain and improve its competitiveness and vitality. Therefore, Ricoh started a system in which retirees are registered upon request at

Ricoh Human Creates Co., Ltd., a Ricoh affiliate, and dispatched to new workplaces where they can make use of their expertise in a variety of areas. Ricoh is contemplating the possibility of dispatching retirees to non-Ricoh Group companies in the future.

Results of the Reemployment System



Surveying Employee Attitude

Ricoh started its Opinion Survey in 1997 to find out what employees are enthusiastic about and satisfied with, to analyze relevant factors, to clarify issues, and to change the quality of management and organizational climates. Employees are given a questionnaire that asks them about their jobs and their work, efforts toward achieving customer satisfaction (CS), bosses, the workplace, the development of abilities, and the Company's management of personnel. Ricoh Corporation in the United States introduced the Employee Satisfaction Management (ESM) system, which gives subordinates a chance to evaluate their managers, in an effort to improve employee satisfaction toward the company. In the United States, "fairness" is highly valued. If a company wishes to be socially reliable, it needs to ensure that there is no discrimination in its hiring, promotion, and payment practices in terms of race, religion, or gender.

Protecting the Personal Information of Employees and Customers

Ricoh sets guidelines in Japan on protecting the personal information of employees and company secrets in Ricoh's Code of Conduct*. Ricoh Human Creates Co., Ltd., the main businesses of which are personnel training and temporary staffing, established a system to protect the personal information of temporary staff as well as client information and to obtain certification from Japan Information Processing Development Corporation (JIPDEC) in April 2001. Ricoh Human Creates started a consulting business using know-how obtained from JIPDEC certification to help Ricoh Group companies engage in developing an information system and obtain the said certification.

*See page 57.

JIPDEC Mark for protecting personal information

Making Efforts to Provide Equal Employment Opportunities for Men and Women

Out of the 265 managers at Ricoh Co., Ltd. Japan, only two are women, and out of 32 directors and operating officers, only one is a woman (not including outside directors). In efforts to provide equal employment opportunities for men and women, Ricoh identified and analyzed the current employment situation through the use of surveys and interviews. Aiming to create a workplace free from sexual harassment, the Company promotes employee awareness of the problem, established the Secretariat of the Human Rights Promotion Committee within the Company, and set up a consulting service outside the Company.

Employing the Physically Challenged

As of June 2001, Ricoh's employment rate of the physically challenged is 1.87%, exceeding the employment rate required by Japanese law. To reduce the inconveniences faced by the physically challenged, the Company equips its plants, offices, and other facilities with ramps and other amenities; promotes employee awareness of issues surrounding the physically challenged; and holds sign language training seminars. Employees voluntarily participate in clubs to learn sign language. Ricoh Espoir Ltd. was established to promote the employment of people who are severely physically or mentally challenged. The facilities of the company were constructed with employee needs in mind in order to provide a work environment in which each employee can work comfortably. In 1996, Ricoh Espoir received a prize in excellence from the Japan Association for the Employment of Persons with Disabilities.

Supporting Volunteer Activities

At Ricoh, employees can take time off to volunteer for activities, take care of family members, or recover from non-work-related injuries or diseases. Moreover, employees can take time off from the Company for a certain period of time to volunteer for activities under a leave of absence system for volunteer activities. At Ricoh Hong Kong Ltd. and Ricoh Office Solutions, which are both located in Hong Kong, employees can take five days off a year for volunteering activities and are awarded for their efforts. In fiscal 2001, five employees requested leave to join the Hong Kong Red Cross, the Boy Scouts, and the Hong Kong Rescue Squad. The five employees were awarded for their efforts.

Ricoh Office Solutions employees who participated in volunteer activities under the leave of absence system

Health and Safety

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

Enterprise evaluation standards now include not only economic aspects, such as business performance, but also environmental and social aspects. Looking at employees' health and safety more carefully, the Ricoh Group positions occupational health and safety activities as an important part of CSR. Ricoh, in line with its management philosophy of thinking like an entrepreneur and finding personal value in its work, promotes people-oriented management. Moreover, this philosophy is always applied to occupational health and safety activities. Recently, Ricoh, in promoting the establishment of an occupational health and safety management system, made continuous efforts to ensure a higher level of health and safety and create a comfortable and vibrant work environment.

Japan

OHSAS 18001 Certification Awarded

On March 20, 2002, Ricoh's Gotemba Plant obtained OHSAS 18001, an international occupational health and safety management certification. The plant was the first in the Ricoh Group to get this certificate. The occupational health and safety management system is a new scheme to reduce, eliminate, or prevent hazards at the workplace. The system aims at the continual reduction of occupational hazards and diseases. For almost a year, since August 2000, a companywide program carried out by the people in charge of health and safety affairs at nine business sites in Japan has been acquiring the know-how to establish this system. In the future, this effort is to be expanded to the Company's Japanese production sites, including the Numazu Plant, as well as other Ricoh Group companies.

The certificate of DNV
(DET NORSKE VERITAS AS)
(based in Oslo, Norway)

The health and safety promotion staff at Ricoh's Gotemba Plant

Making Use of an In-House Network

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

* OHSMS: Occupational Health and Safety Management System

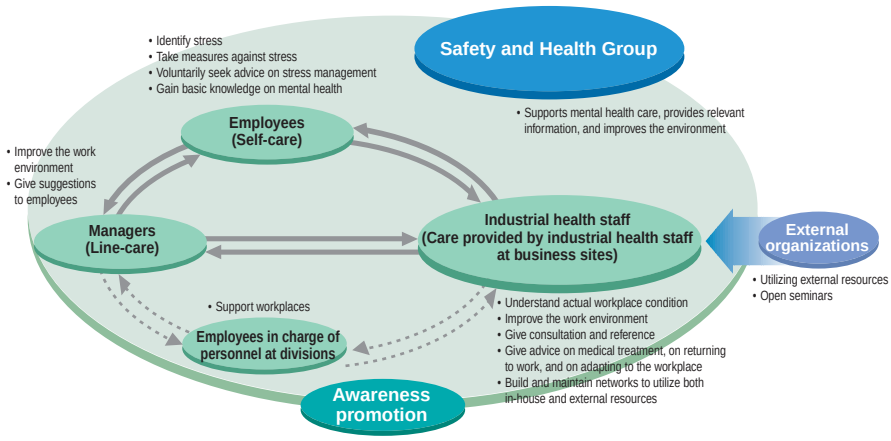
Gotemba Plant's OHSMS navigation system

Health Management News

Mental Health Care

Ricoh considers mental health care a current issue to be included in its health and safety measures and is doing its best to protect each employee's privacy. Companywide support is given to employees under this system, which is based on the Employee Assistance Program (EAP). Focusing on education in mental health care promotion activities, the Company is planning to promote educational programs for industrial mental health care staff and other relevant personnel in managerial positions in stages. In fiscal 2001, a trial introductory training program using the latest materials developed by experts was introduced to employees in managerial positions. The short program is designed to let each employee notice his/her own mental health condition.

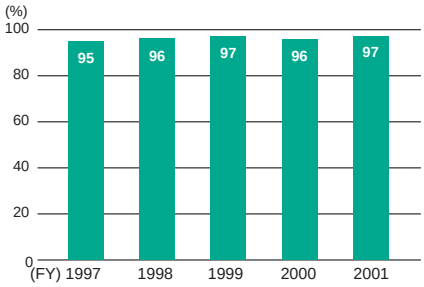
Ricoh's Mental Health Care System



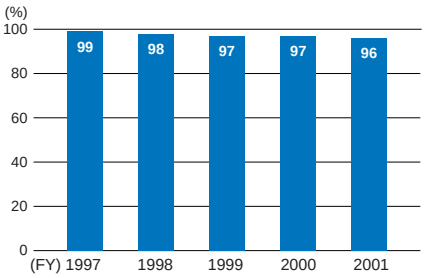
Health Checkups and Complete Medical Examinations

Ricoh offers health checkups and summary medical examinations to employees under the age of 40 (summary medical examinations to employees between the ages of 35 and 40) for the prevention and early diagnosis of diseases. Ricoh requires a complete medical examination for employees 40 years old or older. Furthermore, for employees whose checkups or examinations have revealed health problems, the Company established a follow-up system for re-examinations, detailed examinations, continued observation, and medical treatment. Thus, the Company's efforts toward the prevention, early diagnosis, and treatment of diseases are ongoing. Ricoh's health management system also covers the family members of employees, with complete medical examinations offered to employees' spouses.

Health Checkup Rate



Complete Medical Examination Rate

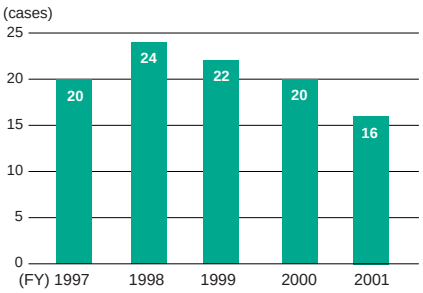


Safety Management Activities

To reduce occupational hazards, Ricoh is promoting on-site voluntary safety activities for employees, especially at its production sites. Such activities include examining accident prevention measures* based on the near-accident experiences of employees, providing introductory training on safety to new employees, promoting employee awareness of safety, and having industrial doctors visit the workplace. Moreover, should an accident occur, a careful examination will be made to establish measures to prevent reoccurrence. The site where the accident occurred will then be notified of the newly established measures to prevent reoccurrence in the future.

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

Number of Occupational Hazards at Ricoh



Records of Outstanding Accident-Free Operations

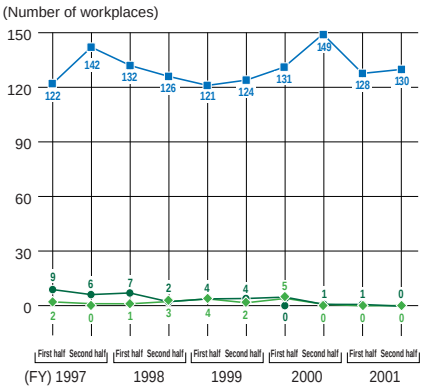
- Level 5 accident-free operations (23.8 million hours)
  Atsugi Plant (May 1999)
- Level 4 accident-free operations (15.9 million hours)
  Atsugi Plant (April 1996)
- Level 4 accident-free operations (15.9 million hours)
  Omori Office (August 1991)
- Level 1 accident-free operations (4.6 million hours)
  Numazu Plant (March 2001, this level is continually being surpassed)

Certificate commending the Numazu Plant for its accident-free operations

Work Environment Measurement

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

Work Environment Measurement (Ricoh and its affiliates in Japan)



1st control area
In most of the workplaces (95%), the concentration of toxic substances in the atmosphere does not exceed the controlled density.

2nd control area
The average concentration of toxic substances in the atmosphere of the workplaces does not exceed the controlled density.

3rd control area
The average concentration of toxic substances in the atmosphere of the workplaces exceeds the controlled density.

Environmental Accounting

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

The Ricoh Group regards its environmental accounting system as an important tool to evaluate and improve its sustainable management, which involves activities that help conserve the environment and, at the same time, are profitable. The Ricoh Group's environmental accounting system comprises corporate environmental accounting, which evaluates business activities as a whole, and segment environmental accounting, which examines the managerial status of projects and divisions. Since its environmental accounting system was disclosed for the first time in 1999, the Ricoh Group has enthusiastically updated the system and, as a result, has garnered a good enough reputation to, for example, be used as a benchmark by other companies. Nevertheless, there are still many problems to be solved using this as a managerial decision-making tool. The Ricoh Group is making special efforts to enhance its internal management functions, examine a new framework system, and develop indicators that more appropriately evaluate sustainable management.

■ Establishing an Environmental Accounting System

The Ricoh Group is making continuous efforts to establish a sustainable management that will help it to survive the current prolonged business competition. The Ricoh Group first reorganized and defined its idea of sustainable management and then examined indicators used to evaluate and analyze the level of sustainable management. At present, a new environmental accounting (environmental management accounting) framework is under consideration to be used as a tool to measure and manage environmental management indicators by product unit and function (division). All information obtained is consolidated under this environmental management information system.

Environmental Management Indicators

Environmental management indicators are needed to appropriately evaluate the level of sustainable management and facilitate further improvement. To this end, the indicators should be set based on the three factors shown below.

1) Economic Benefits of Environmental Conservation Activities

This factor shows how economically rational environmental conservation activities are.

$$\left(\frac{\text{Economic benefits}}{\text{Environmental conservation costs}}\right)$$

If the quotient is one or greater (i.e., the economic benefits are equal to or greater than the environmental costs), then sustainable management is considered valid.

$$\left(\frac{\text{Economic benefits + social cost reduction}}{\text{Environmental conservation costs}}\right)$$

If the quotient is one or greater (i.e., the sum of economic benefits and social cost reduction is equal to or greater than the environmental conservation costs), then environmental management is considered valid.

$$\left(\frac{\text{Environmental impact reduction}}{\text{Environmental conservation costs}}\right)$$

This equation is used to evaluate improvements in the efficiency of investments and other projects.

2) Environmental Efficiency of Business Activities

This factor shows whether the environmental impact of business activities is acceptable and whether those activities respond to social requests.

$$\left(\frac{\text{Sales}}{\text{Total environmental impact (physical or monetary amount)}}\right)$$

This equation is used to evaluate whether environmental impact corresponds to business size.

$$\left(\frac{\text{Value-added business activities}}{\text{Total environmental impact (physical or monetary amount)}}\right)$$

This equation is used to evaluate whether profit corresponds to environmental impact.

3) Environmental Management

This factor is used to determine whether the environmental management process is appropriate.

In-house audits, site reports, environmental technology development process, environmental labels, green purchasing, and other aspects are included.

Environmental accounting needs to work as a tool to measure the economic efficiency of environmental conservation activities and the environmental efficiency of business activities mentioned above. Corporate environmental accounting works as a tool to measure the economic efficiency of environmental conservation activities and environmental efficiency of business activities of the company as a whole.

■ Corporate Environmental Accounting

Corporate environmental accounting works as a management tool to evaluate the sustainable management of the business activities of a company as a whole. Once environmental accounting data is disclosed, it is necessary to have a framework that will hold the company accountable to society and allow it to be compared with other companies. Following the environmental accounting guidelines set forth by the Ministry of the Environment in Japan for general frameworks, the Ricoh Group established its own system through repeated trial and error in calculating economic benefits, integrating environmental impact, and creating indicators. The Ricoh Group continues its efforts to establish a decision making support tool that is as good as a business accounting system.

Environmental Conservation Costs

Environmental conservation costs are those costs associated with environmental conservation, namely, capital investment, depreciation, personnel expenses, and overhead expenses. Cost items are coded by category in accordance with the *Ministry of the Environment's Guideline for Introducing an Environmental Accounting System (2002 Version)*. Accounting divisions add up the data using an accounting system. Costs related to multiple categories are divided proportionally among those related categories to be summed up.

Economic Benefits

In order to compare environmental conservation costs and come up with comprehensive results, economic benefits are calculated in some aspects, not only in terms of substantial effects but also expected and incidental effects. To improve the accuracy of determining expected effects, the "contribution to value-added research and development" item in this report was calculated based on actual sales results, and any profit gained is considered to be the result of environment-friendly functions.

Economic Benefits

Economic benefits are calculated as corporate effects (effects within the Ricoh Group) and social effects (effects outside the Ricoh Group).

Substantial effect:	Actual gains from cost and energy reduction as well as sales of recycled products
Expected effect:	Amount to which environmental measures contributed
Incidental effect:	Pollution- and lawsuit-related costs avoided
Social effect:	Reduction in electricity expenses due to the use of energy-saving products or reduction in waste disposal cost (Japan only)

Formula of Expected Effects

Contribution to value-added production:	(Production output - raw material costs) × business area costs/ manufacturing costs
Effects of 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
Contribution to value-added research and development:	Gross profit × contribution rate to gross margin using the green point (See page 78)
Publicity from environmental advertisements:	Number of visitors to environmental Web site × unit price of the environmental report

Formula of Incidental Effects

Amount of incidental effect:	Standard amount × occurrence coefficient × impact coefficient
Items to be calculated:	Areas of improvement to prevent pollution
Standard amount:	Amount set for lawsuits, suspension of operations, and restoration

Environmental Conservation Effects

For any given year, the environmental impact reduction amount can be used in calculating environmental conservation effects. There are six environmental impact items: CO_2, NO_x, SO_x, biochemical oxygen demand (BOD), final waste disposal amount, and Pollutant Release and Transfer Register (PRTR) substances.

Calculation of Social Cost

In the past, environmental conservation effects were calculated in terms of physical amount. For a clearer comparison with environmental conservation costs, environmental impact is now calculated in terms of monetary value. The monetary value of environmental impact is termed "social costs" (costs of external diseconomies). The conversion coefficient used is based on EPS* Indicator Ver. 2000, which is an impact assessment method in monetary value. The reference figure used is €108/t-CO_2 (¥11,945/t-CO_2). This figure is almost equal to the Ricoh Group's reference amount (¥16,000/t-CO_2), which is calculated from investments to reduce CO_2. This system received internal approval. At present, the conversion of environmental impact into monetary value is just one option, and it needs to be examined further in the future.

* EPS: Environmental priority strategies in product design

Development of Indicators

The Ricoh Group set indicators to evaluate, analyze, and disclose the environmental conservation efficiency of business activities individually and as a whole. Such indicators as the eco-efficiency (EE) value and eco-ratio were once used mainly to compare the cost effectiveness of investments and projects. Those indicators are therefore excluded from corporate environmental accounting and used only in segment environmental accounting in this report. The EE value and eco-efficiency index (EEI), which are indicators used to determine any improvements in environmental impact, are now called the eco-improvement (EI) value and eco-improvement index (EII), respectively, taking into consideration the original meaning of the terms. The definition of EEI was changed from "an index that represents improvements in environmental conservation activities" to "an index that compares the total environmental impact amount with sales." In addition to the indicators mentioned above, new ones were created for this report.

Indicators

- Eco-improvement value (EI Value) = Environmental impact reduction amount/environmental conservation costs (ton/hundred million yen)
  - ▶ To determine how much environmental impact per ¥100 million in environmental conservation costs is reduced for each environmental impact item
- Eco-ratio = Gross profit/environmental impact amount (ton/hundred million yen)
  - ▶ To determine the amount of value-added from business activities obtained per one-ton equivalent of environmental impact discharged
- Eco-improvement index (EII) = Total environmental impact reduction amount (1)/Total environmental conservation cost amount (thousands of yen)
- Improvement ratio of social cost (IRS) = Total social cost reduction amount (2)/Total environmental conservation cost amount (thousands of yen)
  - ▶To determine whether the reduction in ((1) environmental impact/(2) social cost) is efficient
- Eco-index = Gross profit (thousands of yen)/total environmental impact amount (1)
- Ratio of profit to social cost (RPS) = Gross profit/total social cost (2)
  - ▶ To determine whether any profit is made when a company conducts business activities at the appropriate level ((1) environmental impact/(2) social cost)
- Eco-efficiency index (EEI) = Sales (thousands of yen)/total environmental impact amount (1)
- Ratio of sales to social cost (RSS) = Sales/total social cost (2)
  - ▶ To determine whether a business activity at the appropriate level ((1) environmental impact/(2) social cost) is suitable for its scale
- Ratio of eco effect (REE) = Environmental effect (total economic benefit + total social cost reduction amount)/total environmental conservation cost
- Ratio of eco profit (REP) = Total economic benefit/total environmental conservation cost
  - ▶ To determine whether an environmental conservation activity is conducted in an economically rational way

Fiscal 2001 Ricoh Group Corporate Environmental Accounting (Reviewed by BVQI [26])

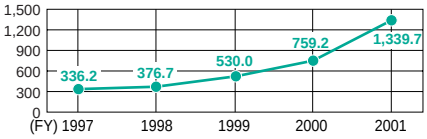
Cost unit: ¥100 million (Exchange rate: $1 = ¥125.1 €1 = ¥110.6)

Item	Costs			Economic Benefits		
	Environmental Investments	Environmental Costs	Main Costs	Monetary Effects	Category	Item
Business area costs	5.2	24.1	Pollution prevention cost..... ¥484 million Global environmental conservation cost ..... ¥374 million Resource circulation cost.... ¥1,557 million	11.8	a	Energy savings and improved waste processing efficiency
				44.4	b	Contribution to value-added production
				21.7	c	Avoidance of risk in restoring environments and avoidance of lawsuits
Upstream/ Downstream costs	0.0	48.7	Cost of collecting, disassembling, and recycling used products	33.4	a	Sales of recycled products, etc.
				[21.5]	S	Reduction in society's waste disposal cost
Managerial activity costs	0.5	30.8	Cost generated by the division in charge of environmental conservation; cost to establish and maintain an environmental management system	1.8	b	Effects of media coverage and environmental education
Research and development costs	0.0	18.8	Research and development costs for environmental impact reduction	38.1	b	Contribution to gross margin through research and development
				[8.4]	S	Reduction in user's electricity expenses thanks to an improved energy saving function and product performance
Social activity costs	0.0	4.5	Costs of preparing environmental reports and advertisements	4.4	b	Publicity from environmental advertisements, etc.
Environmental damage costs	0.0	1.3	Costs of restoring soil and environment-related reconciliation	—	—	None
Other costs	0.1	0.9	Other costs for environmental conservation			
Total	5.8	129.1		155.6	Sum of a, b, and c.	a: Substantial effect b: Expected effect c: Incidental effect S: Social effect
Total capital investment	252.8			[29.9]	Total S's	

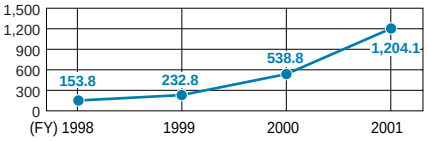
■ Fiscal 2001 Environmental Accounting System

Environmental conservation costs generally increased despite a decrease in environmental investments because the scope of environmental costs was extended. It is generally believed that product recycling costs and research and development costs, in particular, increased because product environmental impact was mainly reduced. Economic benefits doubled from the previous year due to an increase in sales of recycled products in overseas market. Social (customer) economic benefits also increased as a result of eco-friendly products well accepted by the market. As for environmental conservation effects, the Ricoh Group reduced CO_2 emissions 4.9%, more than five times that in the previous year, and it was determined that the investments worked well. As for the resource depletion issue, the final waste disposal amount was reduced more than 70% against the previous year, thanks to the global promotion of Zero-Waste-to-Landfill activities. Furthermore, PRTR substances were reduced almost 50%. In fiscal 2001, the Ricoh Group successfully and significantly reduced its overall environmental impact. The Group's corporate added value is also growing, along with a significant improvement in the eco-index. The ratio of eco profit (REP) exceeded 1.0 for all economic benefits, and the ratio revealed that the economic benefits obtained corresponded to environmental conservation costs. The estimated environmental income rate was calculated using the substantial effect and contribution to gross margin, which were believed to have contributed to actual corporate P/L. The estimation was calculated as 0.64, falling short of the original sustainable management goal of 1.0 or higher. By developing measures to achieve this goal, the Ricoh Group aims at further realizing sustainable management.

Changes in the Eco-Index (Ricoh only)



Changes in the Eco-Index (the Ricoh Group)



Collected data
- Source: 79 Ricoh Group companies. (See page 2.)
- Collection period: From April 1, 2001, to March 31, 2002 (for costs and total environmental impact)

* Environmental impact reduction shows the difference of the fiscal 2001 performance from the fiscal 2000 performance.

Effect on Environmental Conservation				Environmental Impact			
Environmental Impact Reduction (t)	Reduction Rate	Converted Quantity of Reduction	Social Cost Reduction Values	Total (t)	Converted Value of Reduction	Social Costs	Conversion Coefficient
Environmental impact reduction at business sites							
CO_2 14,850.5	5.0%	14,851	1.77	CO_2 281,186	281,186	33.59	1.0
NO_x 8.6	4.4%	169	0.02	NO_x 186	3,672	0.44	19.7
SO_x 0.7	2.9%	21	0.00	SO_x 24	712	0.09	30.3
BOD -8.1	-17.1%	-0	-0.00	BOD 56	1	0.00	0.02
Final waste disposal amount 4,310.0	72.5%	448,240	53.54	Final waste disposal amount 1,639	170,435	20.36	104.0
PRTR substance emissions		93,707	11.19	PRTR substance emissions	125,236	14.96	(Ricoh standards per substance)
Environmental impact reduction through products CO_2 13,043.8 (t) NO_x 10.7 (t) SO_x 8.5 (t) Final waste disposal amount 26,920.0 (t) Calculation for companies in Japan only							
1.21		556,988	66.52		581,242	69.44	
Ratio of eco profit							
1.95		0.0431	0.515		1,204.1	100.8	
Ratio of eco effect		Eco-improvement index	Improvement ratio of social cost		Eco-index	Ratio of profit to social cost	

Penalties and Fines

At the end of fiscal 2001, Ricoh Asia Industry Ltd. (RAI) in China constructed a wastewater disposal facility, which enables the company to dispose of wastewater itself. Prior to the building of the facility, RAI paid for the disposal of its wastewater even though such disposal did not entail any penalties.

Penalties and Fines for Noncompliance with Environmental Laws and Regulations (Ricoh Group)

	FY 1999	FY 2000	FY 2001
Number of cases	0	0	0
Amount	0	0	0

■ Segment Environmental Accounting

Corporate environmental accounting targets corporate environmental activities as a whole but can be used in decision making only in limited cases. However, segment environmental accounting, in which corporate environmental activities are conducted by project, can be used in decision making in many cases. Segment environmental accounting is especially useful in predicting the effects of environmental activities. The Ricoh Group announced its adoption of segment environmental accounting in 1999 and put it into practice by taking various measures. In fiscal 2001, the Group continues its efforts to promote sustainable management by conducting segment environmental accounting at various opportunities*.

* Estimated costs and effects of CO_2 reduction at business sites (page 17)
Estimated costs and effects of CO_2 reduction with energy-saving products (page 17)
Estimated costs and effects of chemical substance reduction at business sites (page 17)
Estimated costs and effects of an ice thermal storage/chilled water system as a part of environmental conservation (page 36)
Estimated costs and effects of a semiconductor plant (Yashiro Plant) as a part of environmental conservation (page 40)
Environmental conservation costs and effects of a cleaning process (Ricoh Industrie France) (page 40)
Environmental conservation costs and effects in the QSU product development (page 48)
Environmental conservation costs and effects in product recycling in fiscal 2001 (page 50)

The Ricoh Group's Corporate Environmental Accounting in Fiscal 2001 (Eco-Balance Environmental Accounting)

Collected data
- Source: 79 Ricoh Group companies. (See page 2.)
- Collection period: From April 1, 2001, to March 31, 2002

					Procurement of Materials and Parts	Manufacturing Process			Trans-portation	Marketing	Use	
						Production Site		Manage-ment			Electric Power	Paper
						Japan	Regions other than Japan					
Input	Energy consumption	Electric power, heavy oil, etc.	[TJ]		4,006	3,391	1,384	567	418	796	12,472	28,037
Input	Resource consumption	Crude oil	[thousands of tons]		21							
Input		Iron ore	[thousands of tons]		53							
Input		Manganese ore	[thousands of tons]		2							
Input		Nickel ore	[thousands of tons]		2							
Input		Chromium ore	[thousands of tons]		1							
Input		Coal	[thousands of tons]		30							
Input		Other	[thousands of tons]		11							4,187
Input	Water consumption	Tap water/well water/industrial water	[thousands of tons]			3,098	3,290	192				
Input	Chemical substances	Arsenic (As) and its compounds	[t]		0.23							
Input		Cadmium (Cd) and its compounds	[t]		0.04							
Input		Lead (Pb) and its compounds	[t]		45.04							
Input		Trivalent/hexavalent chromium and their compounds	[t]		0.31							
Input		Polyaromatic hydrocarbons	[t]		0.37							
Output		Toluene	[t]			271.57	0.46					
Output		Dichloromethane	[t]			51.06	25.40					
Output		HFC-134A	[t]									
Output		Sulfur hexafluoride	[t]			0.23						
Output		Other	[t]			133.60	33.30			46.90		
Output	Environmental impact emission	NO_x	[t]			34	15	4	58	46	390	6,007
Output		SO_x	[t]			18			25	18	310	21,681
Output		CO_2	[thousands of tons]		228	147	170	23	25	44	471	3,460
Output		CH_4	[t]		3,039	356	391	35	131		817	
Output		BOD	[t]			14	44					
Output		COD	[t]			22	84					11,029
Environmental accounting	Influence on the environment	Resources	Fossil fuel		4.84E+07	4.10E+07	1.59E+07	7.10E+06	4.64E+06	8.79E+06	1.40E+08	2.11E+08
Environmental accounting			Mineral resources		3.75E+08	—	—	—	—	—	—	—
Environmental accounting			Total		4.24E+08	4.10E+07	1.59E+07	7.10E+06	4.64E+06	8.79E+06	1.40E+08	2.11E+08
Environmental accounting		Influence on human health			1.88E+08	1.83E+07	1.97E+07	2.64E+06	3.25E+06	4.98E+06	5.55E+07	4.62E+08
Environmental accounting		Influence on the ecosystem			-3.27E+05	9.28E+07	9.84E+07	5.73E+06	-3.86E+04	-6.83E+04	-7.20E+05	-5.46E+06
Environmental accounting		Influence on biodiversity			4.20E+05	2.28E+05	2.50E+05	3.34E+04	3.83E+04	6.10E+04	6.73E+05	4.15E+06
Environmental accounting		Total ELU (Environmental Load Unit)			6.12E+08	1.52E+08	1.34E+08	1.55E+07	7.89E+06	1.38E+07	1.96E+08	6.72E+08
Environmental accounting	Converted amount	Social cost		[millions of yen]	67,639	16,841	14,851	1,715	872	1,522	21,624	74,294
Environmental accounting		Percentage			33.65%	8.38%	7.39%	0.85%	0.43%	0.76%	10.76%	36.95%
Environmental accounting	Costs	Resource and energy cost		[millions of yen]	394,642	4,142	1,307	969	197	782	—	—
Environmental accounting		Environmental conservation cost		[millions of yen]	782	3,586	734	817	140	1,157	932	
Environmental accounting	Effects	Economic benefits		[millions of yen]	—	614	1,089	12	44	1,989	—	—
Environmental accounting		Effect on environmental conservation (to reduce social costs)		[millions of yen]	—	1,055	3,861	1,054	644	—	489	—
Environmental accounting	Indicators	Environmental effect rate ((Economic benefits + social costs reduced)/environmental conservation costs)			—	0.47	6.74	1.31	4.93	1.72	0.52	—
Environmental accounting		Environmental profit rate (Economic benefits/ environmental conservation costs)			—	0.17	1.48	0.02	0.32	1.72	—	—
Environmental accounting		Sales per social costs (Sales/social costs)			12.91							

* Upstream and downstream environmental impact is calculated based on the data of a specific product. (Blanks mean almost zero or n/a.)
* The figures for influences on environment or converted amount are calculated based on the EPS Indicator Ver. 2000.

■ New Framework for Internal Environmental Accounting

In the past, environmental accounting systems were used as a tool to evaluate and disclose environmental impact reduction effects to environmental conservation costs. For the purpose of supporting decision-making processes in sustainable management, it is, however, necessary for this tool to internally measure and evaluate the profit obtained from business activities and the environmental impact appropriate for a company's business size. It is also necessary to measure and identify the environmental impact generated in all relevant processes (environmental impact potential). The Ricoh Group identifies the environmental impact potential and environmental influences in each process of the Comet Circle[1] and measures and evaluates the managerial resources appropriately allocated to the environmental influences. The Group also measures and evaluates environmental conservation costs paid by product line and process, whether the costs work toward advancing social effects and corporate profits, and whether the environmental impact of

	Maintenance		Disposal and Recycling	Total
	Maintenance Works	Manufacturing Maintenance Parts		
	287	443	46	51,847
				21
				53
				2
				2
				1
				30
				4,198
		18		6,598
				0.23
				0.04
				45.04
		0.01		0.32
				0.37
				272.03
				76.46
	4.46			4.46
				0.23
		0.02		213.82
	17	3	1	6,575
	7	7		22,066
	16	29	1	4,614
	72			4,841
		1		59
		1		11,136
	3.17E+06	4.81E+06	5.12E+05	4.85E+08
	—	—	—	3.75E+08
	3.17E+06	4.81E+06	5.12E+05	8.60E+08
	2.59E+06	3.25E+06	1.38E+05	7.60E+08
	-2.34E+04	4.89E+05	-1.89E+03	1.91E+08
	3.21E+04	4.06E+04	1.71E+03	5.93E+06
	5.78E+06	8.59E+06	6.50E+05	1.82E+09
	639	950	72	201,019
	0.32%	0.47%	0.04%	100.00%
	761		96	402,896
	139		4,627	12,914
	17		755	4,520
	43		6,688	13,834
	0.43		1.61	1.42
	0.12		0.16	0.35

■ Economic Benefits from the Development of Eco-Friendly Products

It used to be difficult for the research and development of eco-friendly products to estimate costs and effects. The Ricoh Group calculated the contribution rates of eco-friendly copiers to profit based on a customer satisfaction survey of customers who buy major products in Japan. Special attention was paid to questions asking customers the reason for their purchases. Among business sites, products are given green points that correspond to the levels they contribute to environmental impact reduction. Contribution rates responding to those green points were calculated by product type. The amount of contribution to gross margin due to a product's eco-friendly functions is calculated from annual performance as contribution rates by product type. The total calculated amount is regarded as an annual economic benefit for research and development.

Responses to a Customer Satisfaction Survey (Number of samples=138, multiple answers)

Item	Number of responses	Response rate
1. Functions and performance of copiers are good.	75	54%
2. Time it takes for the machine to warm up is short.	36	26%
3. Time it takes for the machine to turn on from standby is short.	24	17%
4. Machine is small.	18	13%
5. Machine looks user-friendly.	42	30%
6. Machine has the functions I want.	8	6%
7. Machine adopts a low-noise design.	4	3%
8. Machine adopts an energy-saving design.	21	15%
9. Machine is eco-friendly (e.g., the machine is equipped with recyclable toner cartridges, adopts a recyclable design, and reduces environmentally harmful substances).	8	6%
10. Design (color or style) is good.	2	1%
11. Price is reasonable.	32	23%
12. A sales representative recommended the machine.	60	43%
13. Well established maintenance system.	34	25%
14. Patronizing your products for long time	64	46%
15. Other	14	10%

* The rate of environment-friendly functions contributing to gross margin = 6.56% (the percentage of the total number of responses in items 8 and 9 to the total number of responses)

The table on the right shows the results of a survey of our customers in Japan. Another examination conducted was for contribution rates from the viewpoint of customers' willingness to pay (WTP). The table below shows the results of a conjoint analysis, which is a marketing evaluation method. The WTP for 1 kg of CO_2 is ¥1,247.5.

Green Points of Products and Their Contribution Rates to Gross Margin (Specified products only)

Product Type	Green Point	Contribution Rate
imagio Neo 350	25	6.56%
Spirio 5000 RM	24	6.30%
Spirio 7010F	18	4.72%
Spirio 7210F RM	26	6.82%
FT 4500FK	16	4.20%
imagio MF4570	19	4.99%
imagio Neo 450	25	6.56%
imagio MF5570	19	4.99%
imagio MF7070	21	5.51%
imagio MF8570	18	4.72%
imagio MF105 Pro	18	4.72%

Customer's WTP Evaluation Results from a Conjoint Analysis

Item	Evaluation Weight of Efficiency Index	Evaluation Weight of Product Price Unit
Speed (sheets/minute)	0.0013844 (effect/sheet)	2,567.7 (yen/sheet)
Time to start from standby mode (seconds)	0.0023333 (effect/second)	4,327.7 (yen/second)
Electricity bill (thousands of yen/year)	0.0746933 (effect/thousand yen)	138.5 (yen/yen)
Sound while on standby (dB)	0.0027242 (effect/dB)	5,052.8 (yen/dB)
Greenhouse gas (kg-CO_2)	0.0006726 (effect/kg)	1,247.5 (yen/kg)
Price (ten thousands of yen)	0.0053915 (effect/ten thousand yen)	1.0 (yen/yen)

From the results obtained in the table above, it was found that the contribution rate for product types given in the customer satisfaction survey was 7.89%.

The appropriateness of the contribution rate according to the survey is considered verified in terms of WTP.

business activities as a whole suits the company's business size. Thus, the Group is establishing a framework for environmental management accounting[2]. Efficient sustainable management is promoted by identifying the divisions responsible for each product and process as well as measuring and evaluating the effects in those areas.

1. See page 13.
2. See table above.

Business Site Data

(Reviewed by BVQI [27])

Ricoh Production Sites	Production (Zero-Waste-to-Landfill) (See pages 39 and 40.) Waste recovery rate (%)	Total waste discharge amount (t)	Final waste disposal amount (t)	Water consumption (10,000 tons)
Atsugi Plant—Office equipment and other products 1005 Shimo-Ogino, Atsugi, Kanagawa 243-0298, Japan	100	845	0	12.1
Hatano Plant—Printed circuit boards and electronic components 423 Hirasawa, Hadano, Kanagawa 257-8586, Japan	100	220	0	1.9
Numazu Plant—Supplies 16-1 Honda-machi, Numazu, Shizuoka 410-8505, Japan	100	3,103	0	185.4
Gotemba Plant—Copiers, fax machines, and data processing systems 1-10 Komakado, Gotemba, Shizuoka 412-0038, Japan	100	1,125	0	8.5
Fukui Plant—Supplies 64-1 Ohmi, Sakai-cho, Sakai-gun, Fukui 919-0547, Japan	100	1,596	0	20.2
Ikeda Plant—Electronic devices 13-1 Himemuro-cho, Ikeda, Osaka 563-8501, Japan	100	170	0	25.5
Yashiro Plant—Electronic devices 30-1 Saho, Yashiro-cho, Kato-gun, Hyogo 673-1447, Japan	100	570	0	12.3
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	2,124	0	22.5
Hasama Ricoh, Inc.—Parts for copiers, and data processing equipment 86 Aza-Kitasanden, Sanuma, Hasama-cho, Tome-gun, Miyagi 987-0511, Japan	100	1,706	0	1.6
Ricoh Unitechno Co., Ltd.—Fax machines, copiers, and microfilm equipment 713 Tsurugasone, Yashio, Saitama 340-0802, Japan	100	661	0	1.3
Ricoh Optical Industries Co., Ltd.—Photographic equipment 10-109 Ohata, Hanamaki, Iwate 025-0303, Japan	100	650	0	4.4
Ricoh Keiki Co., Ltd.—Parts for copiers and data processing equipment 3144-1 Aza-Ipponguri, Shimoizumi, Kuboizumi-machi, Saga, 849-0903, Japan	100	161	0	0.4
Ricoh Microelectronics Co., Ltd.—Printed circuit boards 10-3 Kitamura, Tottori, 680-0911, Japan	100	566	0	2.5
Ricoh Elemex Corporation—Office equipment, clocks, watches, and educational equipment 2-2-13, Nishiki, Naka-ku, Nagoya, Aichi 460-0003, 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	891	0	11.2
The Ricoh Group's Manufacturing Subsidiaries outside Japan				
Ricoh Electronics, Inc. (REI)—Office equipment and supplies One Ricoh Square, 1100 Valencia Avenue, Tustin, CA 92680, U.S.A.	100	6,419	0	19.5
Ricoh UK Products Ltd. (RPL)—Copiers and supplies Priorslee, Telford, Shropshire TF2 9NS, U.K.	100	1,044	0	3.1
Ricoh Industrie France S.A. (RIF)—Copiers, fax machines, and supplies 144, Route de Rouffach 68920, Wettolsheim, France	100	8,603	0	5.1
Ricoh Asia Industry S.Z. Ltd. (RAI)—Copiers Color TV Industrial Zone, Futian District, Shenzhen, P.R. China	95	1,641	82	14.4
Taiwan Ricoh Co., Ltd.—Photographic equipment 34 Lane 200, Jwu Her Road, Fuh Shing Li, Chang Hwa, Taiwan	93	227	15	4.9

1. 'Ricoh Group's target substances for reduction' are PRTR substances designated by four Electric & Electronic Industries Associations in Japan between fiscal 1998 and fiscal 2000. The figures are indicators multiplied by the environmental impact coefficient. (See page 37 for the formula used to calculate the amount used or discharged.)
2. Includes the results of a subcontracted development center as well as a recycling and recovery center

Notes:
1. It is not possible to simply compare figures to one another because the business sites (including plants and Group companies) above have different operations, production systems, scale, and locations.
2. This is the first time that business site data has been published in a report. The data shows fiscal 2001 performance and is the accumulated results of the Ricoh Group's environmental conservation activities conducted not just in fiscal 2001.

Production (Preventing Global Warming) (See pages 35 and 36.)		Production (Pollution Prevention) (See pages 37 and 38.)				
Energy consumption		Emissions into air (NO_x) (t)	Emissions into air (SO_x) (t)	Water discharge (BOD) (t)	'Ricoh Group's target substances for reduction' used[1]	'Ricoh Group's target substances for reduction' discharged[1]
($t\text{-}CO_2$)	(TJ)					
13,673	153.7	1.683	0.039	0.513	45.7	4.5
1,597	16.6	0.039	0.001	0.634	732.6	108.3
29,057	513.5	13.985	0.000	5.409	12,512.8	5,692.0
3,142	36.4	0.627	0.011	0.059	0.0	0.0
18,428	224.8	5.306	0.122	0.929	6,905.5	839.2
9,963	115.8	1.404	0.000	0.185	161.3	56.0
25,732	282.5	3.262	0.053	0.331	335.9	201.3
10,764	126.8	3.439	2.144	5.527	3,039.0	2,029.2
2,117	24.2	0.459	0.300	0.078	84.2	71.5
1,161[2]	13.6[2]	0.111	0.000	0.008	42.7	42.7
6,720	76.6	1.498	7.028	0.312	114.6	35.9
719	7.5	0.000	0.000	0.000	146.8	0.8
3,895	46.0	1.211	8.080	0.156	186.5	0.1
6,131	67.5	0.529	0.131	0.089	297.2	136.3
37,413	308.8	5.526	0.000	2.042	425.7	3.6
17,135	105.1	1.843	0.000	0.000	3,164.2	2,542.9
7,000	256.2	6.175	0.028	2.440	1,261.3	749.1
5,475	58.9	0.405	0.447	36.426	10.2	10.2
3,239	19.0	0.042	0.000	0.104	15.5	0.0

Example: Numazu Plant
Ricoh Group-regulated substances discharged: 5,692.0
Compared with fiscal 2000 (8,697.1): Reduced 34.6%
Compared with fiscal 1997 (14,056.6): Reduced 59.5%

The Ricoh Group will continue to disclose business site data for year-to-year comparisons.

The Ricoh Group's Environmental Conservation Activities (1976–March 2001)

The Ricoh Group's Activities		Society's Recognition of the Ricoh Group's Activities		Worldwide Trends	
1976	Establishes Environmental Promotion Section			1971	Environment Agency set up Ramsar Convention adopted
1990 December	Sets up Environment Administration Office			1977	United Nations Conference on Desertification held UNEP conference held
1992 February	Establishes Ricoh General Principles on the Environment			1987	Montreal Protocol adopted
March	FT5570 copier awarded the BAM (initial version)			1990	London meeting (set phaseout of CFCs and HCFCs)
				1991	Recovered Resource Use Promotion Law enacted
1993 March	Achieves total elimination of ozone-depleting substances (specific kinds of chlorofluorocarbons (CFCs), specific kinds of halon, carbon tetrachloride, etc.)	1993 May	Ricoh UK Products' copier photosensitive drum recycling technology receives the Queen's Award in the U.K.	1992	UN Conference on Environment and Development (Earth Summit) held
May	Announces the recycled product design basic policy and implements recyclable design level 1	September	Ricoh UK Products' power consumption reduction activities receives the Business Energy Award's Grand Prize.	1993	Energy Saving Law revised
May	Launches material labeling on plastic parts			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
December	The Ricoh Group achieves total elimination of ozone-depleting substances (specific kinds of CFCs, specific kinds of halon, carbon tetrachloride, etc.).				
1994 August	The Comet Circle concept is completed.	1994 May	Ricoh UK Products' copier photoconductor drum recycling technology receives the European Better Environment Awards for Industry.		
November	Implements labeling of materials and grade on plastic parts			1996	ISO Environmental Auditing Standards of Environmental Management System established International Energy Star Award launched by EPA
1995 February	Holds First Ricoh Company Environment Conference				
October	Announces International Energy Star certified products				
December	Ricoh Gotemba Plant acquires ISO 14001 certification (the first certification given by a Japanese certification organization).				
1996 July	Ricoh UK Products acquires BS 7750/ISO 14001 certification.				
1997 March	Sets 79 types of management chemical substances	1997 March	Ricoh Corporation (United States) wins Energy Star Copier Prize.	1997	COP3 (Kyoto Conference) held Kyoto Protocol adopted
1998 April	Ricoh establishes the Recycling Division.	1998 November	Ricoh ranked top of the electric and electronics industry by German environmental survey specialist company Ökom GmbH.		
May	Issues *Ricoh Group Green Procurement Guidelines*			1998	Eco Partnership Tokyo Conference held Law concerning the Promotion of Measures to cope with Global Warming established
October	Ricoh Fukui Plant achieves a 100% resource recovery rate (Zero-Waste-to-Landfill).	December	Ricoh ranked number one in the Second Corporate Environmental Management Level Survey by the *Nihon Keizai Shimbun* newspaper.		
1999 January	Issues the *Ricoh Group Environmental Report 1998*			1999	Revised Energy Saving Law enforced PRTR Law established
June	Ricoh introduces its environmental volunteer leader training program.	1999 November	Ricoh wins the IEA's Demand-Side Management Award of Excellence in the recently created Copier of the Future Division for its energy-saving technology.		
September	Ricoh announces results of its first environmental accounting.				
December	Ricoh enters one of its machines in Eco-Products 1999, Japan's first comprehensive exhibition for environment-friendly products.			2000	Law Concerning the Promotion of the Procurement of Eco-Friendly Goods and Services by the State and Other Entities promulgated Basic Law for Establishing a Recycling-Based Society established Waste Management and Public Cleansing Law revised Law for the Promotion of Utilization of Recyclable Resources established Law Concerning the Promotion of the Procurement of Eco-Friendly Goods and Services by the State and Other Entities established
2000 January	Ricoh acquires Eco-Mark certification for 28 copier models.	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).		
February	Ricoh's digital multifunctional copier, the imagio MF6550, acquires Type III Environmental Impact Disclosure from BVQI (Sweden).				
May	Ricoh starts projects to restore virgin forests in Asia.	May	Ricoh ranks first among 39 nominees in a rating survey conducted by Ökom on the IT/electronics industry.		
September	Aoyama Office first achieves a 100% resource recovery rate (Zero-Waste-to-Landfill) as a nonproduction site.	June	Ricoh Corporation is the first Japanese company to receive the Environmental Stewardship Award from the Council on Economic Priorities (CEP).		
2001 January	Ricoh Logistics System launches a recyclable eco-packaging system.	December	Ricoh ranks first for the third year in a row in the 4th Corporate Environmental Management Level Survey organized by the *Nihon Keizai Shimbun*.		
January	Yoriko Kawaguchi, Minister of the Environment, visits Numazu Plant.			2001	Ministry of the Environment (Japan) established The first Conference on the Creation of *Wa no Kuni* held Law Concerning the Promotion of the Procurement of Eco-Friendly Goods and Services by the State and Other Entities enforced in full scale COP7 held
March	Ricoh President Masamitsu Sakurai attends the first meeting of the Conference on the Creation of *Wa no Kuni*.				

See the *Ricoh Group Sustainability Report 2001* for details. (http://www.ricoh.co.jp/ecology/e-/report/index 2001.html)

The Ricoh Group's Social and Environmental Activities (April 2001–March 2002)

The Ricoh Group's Activities

	Environmental	Social	
2001 April			Ricoh's Corporate Environment Office reorganizes into Corporate Environment Division
April	●		Ricoh holds a business workshop on the prevention of global warming, which is held by WWF Japan.
April		●	Ricoh Human Creates obtains Privacy Mark.
April	●		Ricoh Corporation (San Jose) acquires ISO 14001 certification.
April	●	●	Seventh Ricoh Nature Seminar is held.
April	●		Fourth American Environment Meeting is held.
May	●	●	Ricoh Hong Kong plants trees in a park located in Saikung, Hong Kong, as part of its greening activities.
May	●	●	The Ricoh Nature Seminar's intermediary course is held for the first time.
May	●		NRG Italia and Ricoh Electronic Technology (China) acquire ISO 14001 certification.
June	●		RIF (France) issues *Environment*, an environmental report.
June	●		Gestetner Denmark, NRG Comunicaciones (NRG Spain), and Ricoh New Zealand acquire ISO 14001 certification.
June	●		The imagio Neo 220/270 series is marketed.
July	●		European Environment Meeting is held.
July	●	●	Eighth Ricoh Nature Seminar is held.
July	●	●	Ricoh participates in e-mission55.
July	●		NRG Deutschland acquires ISO 14001 certification.
August		●	Ricoh's social contribution club FreeWill holds its second seminar.
August	●		Gestetner Svenska acquires ISO 14001 certification.
August	●		"Our earth, our tomorrow" is decided as the Eco Slogan for four regions except Japan.
September	●		Ricoh Hong Kong, Ricoh Belgium, Ricoh Nederland, and Ricoh Logistics System acquire ISO 14001 certification.
September	●	●	*Ricoh Group Sustainability Report 2001* is published.
September	●		Ricoh UK Products achieves a 100% resource recovery rate (zero waste to landfill).
October	●	●	Gotemba Plant completes a biotope and opens a nature school.
November		●	The Ichimura Idea Prize Awards Ceremony is held for the 32nd time.
November			The Ricoh Minori Prize Awards Ceremony for fiscal 2001 is held.
November	●		NRG Group UK, Ricoh Europe B.V. (the Netherlands), and Ricoh Leasing Company acquire ISO 14001 certification.
November	●		Ricoh Unitechno holds second company environment conference.
November	●	●	Ninth Ricoh Nature Seminar is held.
December	●		The imagio Neo 750/600 series is marketed.
December	●		The imagio MF6550RC, an environment-friendly digital multifunctional copier, is marketed.
December	●		Ricoh Gotemba Plant is the first domestic business site of the Group to renew ISO 14001 certification for the second time.
December	●		Ricoh obtains the Eco Mark for its laser printer IPSiO series.
December	●		Eighth Ricoh Company Environmental Competition is held.
December	●		Third Five Regional Environment Meeting is held.
December	●		Ricoh Logistics System acquires permission for a nationwide collection and transportation of industrial waste.
December	●		Ricoh's Japanese sales companies collectively acquire ISO 14001 certification.
December	●		Ricoh Shinagawa System Center, Ginza Office and Toda Technical Center achieve a 100% resource recovery rate (Zero-Waste-to-Landfill).
December		●	Ricoh Kids Workshop is held in Hirosaki, Aomori.
December	●		Ricoh Austria, Ricoh Deutschland, Ricoh Hungary, NRG France, and Gestetner (Israel) acquire ISO 14001 certification.
2002 January		●	Ricoh System Kaihatsu obtains the Privacy Mark.
January	●		Ricoh Shin-Yokohama Office achieves a 100% resource recovery rate (Zero-Waste-to-Landfill)
January	●		The first Ricoh Green Procurement Meeting is held.
January	●		Ricoh Technosystems, Chiba Branch achieves a 100% resource recovery rate (Zero-Waste-to-Landfill).
January	●		Ricoh Italia acquires ISO 14001 certification.
February	●		Ricoh Australia and Ricoh Canada acquire ISO 14001 certification.
February	●		European Environment Meeting is held.
March		●	Ricoh's social contribution club FreeWill holds its third seminar.
March		●	Ricoh Kids Workshop is held.
March	●		Ricoh (UK), Ricoh France, NRG Ireland, Ricoh Norge, Ricoh Espana, Ricoh Europe, Sucursal em Portugal, and Ricoh Polska acquire ISO 14001 certification.
March	●		A press release on the Ricoh Group's environmental action plan (FY 2002–2004) is issued.
March		●	The Ichimura School of Nature is opened in the Kanto area.
March	●		Ricoh Asia Industry (RAI), Taiwan Ricoh, Iwate Ricoh, Ricoh Technosystems (Tokyo Branch, Kanagawa Branch, Kyushu Branch, Chugoku Branch) achieve a 100% resource recovery rate (Zero-Waste-to-Landfill).

Society's Recognition of the Ricoh Group's Activities

2001 May	*Ricoh Group Environmental Report 2000* receives the Green Reporting Awards 2001.
May	Fukui Plant's fiscal 2000 environmental report wins the Prize for Site Reports at the Green Reporting Awards 2001.
May	Numazu Plant is officially commended by the governor of Shizuoka Prefecture for the plant's contributions to environmental conservation prize.
June	Hatano Plant receives the Director-General of Kanagawa Labor Bureau Award.
July	Ricoh is ranked number 1 in a customer satisfaction survey conducted by J.D. Power on PPCs and facsimiles.
July	Numazu Plant receives the Prime Minister Prize in recognition of its outstanding efforts toward the safety of its workers.
July	Ricoh receives the highest rating, "AAA," in the photograph and office equipment category of an "eco-rating" conducted by Innovest Strategic Value Advisors in the United States and is ranked number 1 in the world.
September	Ricoh receives the Minister of Health, Labour and Welfare Award for its efforts toward employing the physically challenged.
September	The Aficio AP 3800C obtains five stars, the best rating from Business Equipment Research and Test Laboratories (BERTL), an English evaluation organization.
October	Tohoku Ricoh and Research and Development Center receive the Recycling Promotion Council Chairman's Award.
November	Ricoh Unitechno's *Environmental Report 2001* receives the Global Environmental Forum President's Prize at the fifth Environmental Report Awards.
November	Ricoh is the first Japanese company to receive "the Climate is Business" Award.
December	Ricoh ranks second in the 5th Corporate Environmental Management Level Survey organized by *Nihon Keizai Shimbun*.
December	Ricoh ranks fifth in the Stock Market Survey of Opinions about Major Institutional Investors conducted by the *Nikkei Financial Daily*.
December	Ricoh's environmental conservation Web site, ECO TODAY, wins excellence award from ECO goo for the second consecutive year.
December	In a survey conducted by the U.K.'s *Financial Times*, Ricoh is chosen by member CEOs as the seventh world best company in terms of environmental conservation.
2002 January	Ricoh receives the Energy Conservation Center, Japan, (ECCJ) Chairman's Prize at the Energy-Saving Awards for its imagio Neo 220/270 series.
January	Ricoh receives the 7th Information Disclosure Award for Listed Companies from the Tokyo Stock Exchange.
February	Fukui Plant is officially commended by the director of the Chubu Bureau of International Trade and Industry for its superiority in energy management.
February	Ricoh President Masamitsu Sakurai receives the Mainichi Economic Management Award.
March	Gotemba Plant is first in the Ricoh Group to obtain certification for its occupational health and safety management system.
March	Mie Ricoh receives the Mie Prefecture Quality Award's Governor's Award.
March	Ricoh receives the Eco Web Prize from Ecology Symphony.

Subsequent Events

2002 April	Ricoh announces its participation in the United Nations Global Compact.
April	Chiba Ricoh receives the excellence award of the Chiba Prefecture Quality Award.
May	*Ricoh Group Sustainability Report 2001* receives second Prize and the Consistent Performance Prize at the Fifth Green Reporting Awards 2002.
May	Fukui Plant's fiscal 2001 environmental report wins the Prize for Site Reports at the Green Reporting Awards 2002.
May	Ibaraki Ricoh receives the Ibaraki Prefecture Quality Award.
June	Ricoh ranked number 1 in the world in environmental, social, and cultural aspects in a corporate responsibility rating conducted by Ökom GmbH, Germany.
June	Ricoh Office Solutions (Hong Kong) receives the best award of the Hong Kong Quality Award.
June	Ricoh Logistics receives the environmental conservation award of the 3rd Logistics Environment Award.

Principles of the Environmental Report and Responses from the Ricoh Group Sustainability Report 2001 Questionnaire

Principles of the Environmental Report

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

Principles of the Environmental Report

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

Notes:

1. "Companies" refer to the Ricoh Group as a whole, Group companies, and/or their business sites, depending on the coverage and level of the report.
2. The avoidance of disclosing negative information shall not be regarded as a fair representation of all information.
3. The state of companies' environmental risk management shall be included in the information stakeholders use in decision making.
4. Significant subsequent events shall be described in the report. Subsequent events refer to events that occur during the period from the day after the reporting period ends to the date the report is completed. Such events may influence the state of companies' environmental management from the next fiscal year onward. Examples of significant subsequent events are as follows:
   a) Critical damage caused by environmental pollutants and similar causes
   b) The announcement and implementation of large environment-related investment projects
   c) The assignment and transfer of significant environment-oriented business transactions
   d) Significant, controversial environment-related cases that arose or were solved
   e) The announcement of significant development in environment-oriented technologies

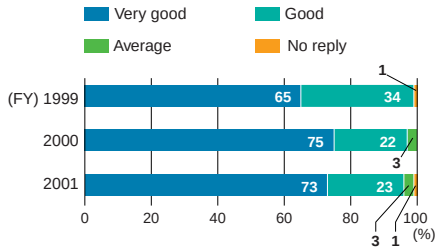
   Subsequent events disclosed as notes are useful as supplemental information to determine the state of companies for future environmental management.
5. Ongoing applications may be cancelled only if there is good reason and it has been determined that the environmental report would be more rational if it followed procedure or if there were changes in representation. "Good reason" includes significant changes in company management policies, business reorganization, drastic technological innovation, and amendments in and the abolition of relevant laws, regulations, and standards.

Responses from the Ricoh Group Sustainability Report 2001 Questionnaire

Beginning with the 1998 issue, the Ricoh Group has included questionnaires (only in Japan) in its environmental report to collect comment and opinion from the readers on improving its environmental conservation activities as well as information disclosure. 20,390 copies of the report 2001 were distributed and 94 readers returned the questionnaire as of the end of June, 2002.

Questionnaire Results

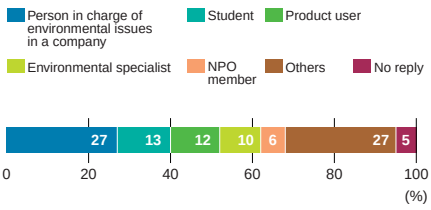
1. How would you rank the Ricoh Group's environmental conservation activities described in the report?



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

No. 1 Production (Zero-Waste-to-Landfill)
No. 1 Environmental Accounting
No. 3 Social Contribution Activities
No. 4 Recycling
No. 4 Environmental Volunteer Leaders
No. 6 Working with Administrations and Local Communities

3. In what position did you read this report?



Some of the opinions from the Ricoh Group Sustainability Report 2001 readers and improvements in the 2002 report

- Since I visited Numazu Plant last autumn, I am fairly impressed by your attitude for environmental conservation activities. I introduced your activities at the seminar which I act as a lecturer.
- I wish the summary was in this report and details were posted on the website.

▶ Past data of the Environmental Conservation Activities and ISO 14001 Certified Divisions and Business Sites of the Ricoh Group as well as the details of Type III Environmental Impact Disclosure are stored in the website. We continue to disclose the information, making the best use of advantage of the printed and Internet media.

- I felt that fewer people actually participate in the environmental volunteer activities, even though more are interested in them. I hope more will participate in the activities in fiscal 2002.

▶ In fiscal 2002, we further developed the activities. (See "Social Contribution Activities," starting from page 61.)

- Environmental activities were explained in terms of LCA. Why don't you take the approaches in terms of product development and design?

▶ The Group established a new section called "Research and Development" (page 31) to explain the product design.

- I want to read the details about cost-effectiveness, investment effects, and environmental accounting.

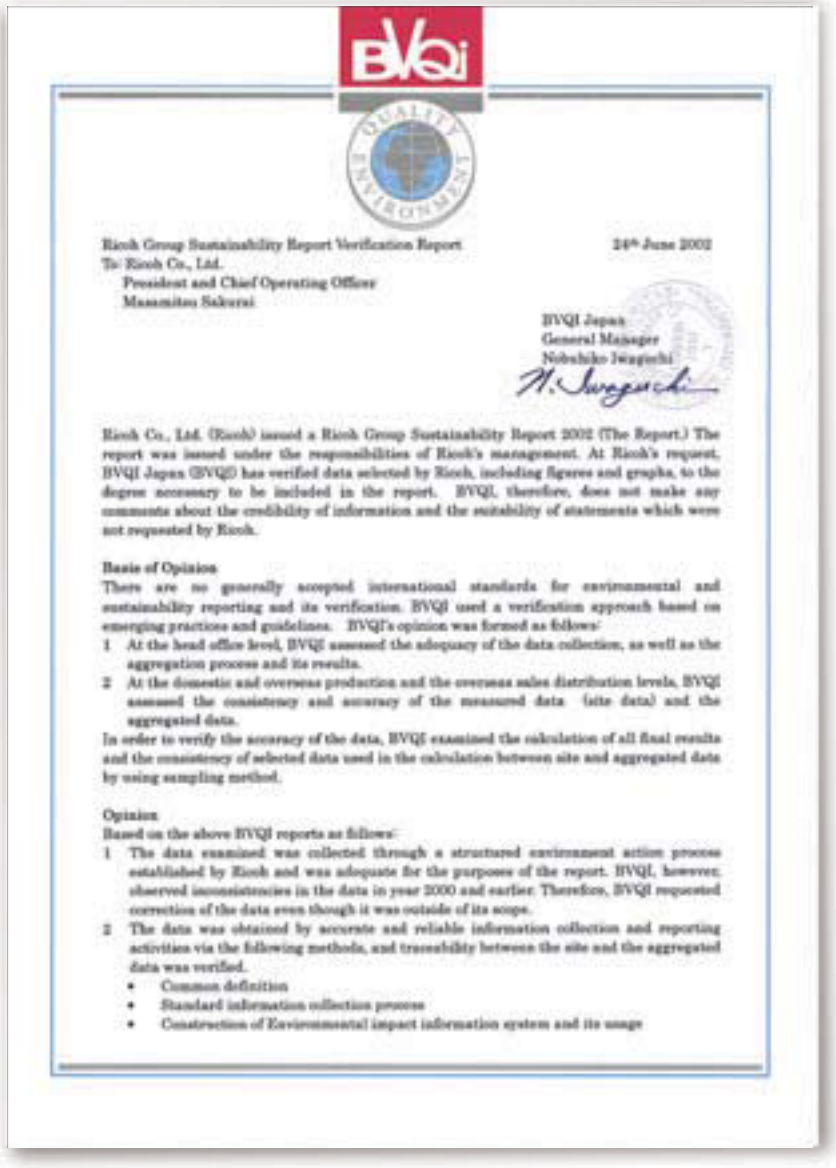
▶ The Group took new approaches including estimates of costs and effect according to the segment environmental accounting (pages 17, 36, 40, 48, and 50), development of indicators (page 74), and Eco-Balance environmental accounting (pages 77–80).

- It was hard to understand whether recycling activities cover only Japanese business sites or all the business sites both Japan and overseas.

▶ Many examples of the countries other than Japan were added in more sections including "Recycling." We would like you to know about the Ricoh Group's global activities in environmental management.

Third Party Review

The Ricoh Group receives a third party review, for the purpose of disclosing more reliable information to a variety of stakeholders and facilitating the progress and improvements in environmental management. For the review, the Ricoh Group paid attention to 1) not only receiving the review on the information described in this report, but also connecting the review results to continuous improvement in the Ricoh Group's environmental management system by giving useful feedback such as review reports and opinions, and 2) giving global review on environmental issues, which should be regarded as global issues. The Ricoh Group requested BVQI, the organization conducting the review, to review appropriateness, reliability, traceability of the numerical values, figures, and tables on the report. The Group also reviews the descriptions and statements of the report by itself in the responsibility of its Corporate Environment Division. The Ricoh Group discloses the information about the BVQI's review report and its opinions as mentioned below, and makes continuous efforts to better in the next year the issues pointed out by BVQI.



Ricoh Group Sustainability Report Verification Report 24th June 2002

To: Ricoh Co., Ltd.
President and Chief Operating Officer
Masamitsu Sakurai

BVQI Japan
General Manager
Nobuhiko Iwaguchi

Ricoh Co., Ltd. (Ricoh) issued a Ricoh Group Sustainability Report 2002 (The Report.) The report was issued under the responsibilities of Ricoh's management. At Ricoh's request, BVQI Japan (BVQI) has verified data selected by Ricoh, including figures and graphs, to the degree necessary to be included in the report. BVQI, therefore, does not make any comments about the credibility of information and the suitability of statements which were not requested by Ricoh.

Basis of Opinion
There are no generally accepted international standards for environmental and sustainability reporting and its verification. BVQI used a verification approach based on emerging practices and guidelines. BVQI's opinion was formed as follows:
1 At the head office level, BVQI assessed the adequacy of the data collection, as well as the aggregation process and its results.
2 At the domestic and overseas production and the overseas sales distribution levels, BVQI assessed the consistency and accuracy of the measured data (site data) and the aggregated data.
In order to verify the accuracy of the data, BVQI examined the calculation of all final results and the consistency of selected data used in the calculation between site and aggregated data by using sampling method.

Opinion
Based on the above BVQI reports as follows:
1 The data examined was collected through a structured environment action process established by Ricoh and was adequate for the purposes of the report. BVQI, however, observed inconsistencies in the data in year 2000 and earlier. Therefore, BVQI requested correction of the data even though it was outside of its scope.
2 The data was obtained by accurate and reliable information collection and reporting activities via the following methods, and traceability between the site and the aggregated data was verified.
- Common definition
- Standard information collection process
- Construction of Environmental impact information system and its usage

BVQI's Reference View (whole statement)

BVQI visited Ricoh Co., Ltd.'s head office, Tohoku Ricoh Co., Ltd., Ricoh Asia Industry (Shenzhen, China), Ricoh Europe B.V. (Netherlands), Ricoh Norge A.S. (Norway). BVQI has reported many findings and opinions regarding environmental activity at the HO and site level through the data verification process. BVQI has concluded the following:

1. Information Collection and Reporting System

Most of the data was collected through the Environmental Impact Information System. However, some of the data was collected outside of this system due to the variety of data and the limitation of the system in overseas offices. BVQI observed minor miscalculations in aggregation and simple mistakes which did not affect the gist of the report. BVQI requested re-investigation and re-aggregation. It was carried out promptly. However, the data collection system needs improvement in order to gather and aggregate data accurately and functionally in considering following points.

- Expansion of usage of environmental impact information system
- Education and training on data collection and input, especially on terminology, definition and methodology at overseas sites
- Utilization of internal audit to ensure data accuracy
- Verification of calculation formula when using spread sheet

2. Environmental Accounting

When compared with the method used in 2000, the calculation basis became clearer and the aggregation became more accurate. However, minor variations were observed in the interpretation of the calculation basis at overseas sites. BVQI hopes further understanding of Ricoh's accounting guidelines and the enforcement of consistency throughout the network.

3. Application of Life Cycle Assessment

The LCA method was positively applied in the evaluation of environmental products and recyclable products, and its effectiveness was measured quantitatively. This is the most advanced, highly appreciated system. However the aggregation scope of the energy consumption in recyclable products, needs further improvement.

4. Progress of Third Party Verification Audit

Thanks to firm cooperation by Ricoh, the data needed to conduct verification was presented swiftly by the domestic and overseas and BVQI completed its verification audit in a timely manners.

* Note by Ricoh
Numerical values, figures, and tables subject to BVQI's review can be identified with serial descriptions, (Reviewed by BVQI [1]) through (Reviewed by BVQI [27]), on the right side of the figures and tables in the report.
Among those data of fiscal 2000 or earlier, items [5], [7], [8], [11], [13] and [14] were corrected according to Opinion 1 of the Ricoh Group Sustainability Report Verification Report.

Our earth, Our tomorrow

Please send all comments and inquires regarding this report to:

● The Americas

Ricoh Corporation
Corporate Quality Assurance Environmental Management Division
19 Chapin Road Building C Pine Brook, NJ 07058, U.S.A.
Phone: +1-973-808-7645 Facsimile: +1-973-882-3959
E-mail: environmentinfo@ricoh-usa.com
http://www.ricoh-usa.com

● Europe, Africa, and the Middle East

Ricoh Europe B.V.
Environmental Management Office
Groenelaan 3, 1186 AA, Amstelveen, The Netherlands
Phone: +31-20-5474111 Facsimile: +31-20-5474154
E-mail: emo@ricoh-europe.com
http://www.ricoh-europe.com

● Asia and Oceania

Ricoh Asia Pacific Pte. Ltd.
#15-01/02 The Heeren, 260 Orchard Road, Singapore 238855
Phone :+65-830-5888 Facsimile: +65-830-5830
E-mail: webmaster@rapp.ricoh.com
http://www.ricoh.com.sg/

● China, Hong Kong, and Taiwan

Ricoh Hong Kong Ltd.
21 fl., Tai Yau Building, 181 Johnston Road, Wan Chai, Hong Kong, S.A.R., China
Phone: +852-2862-2888 Facsimile: +852-2866-1120
E-mail: envinfo@rhl.ricoh.com
http://www.ricoh.com.hk/

● Japan

Ricoh Co., Ltd.
Corporate Environment Division
1-15-5 Minami Aoyama, Minato-ku, Tokyo 107-8544, Japan
Phone: +81-3-5411-4404 Facsimile: +81-3-5411-4410
E-mail: envinfo@ricoh.co.jp
http://www.ricoh.co.jp/ecology/e-/

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

Vegetable INK for waterless printing
NON Volatile Organic Compounds

Waterless Printing Naturally

FSC 30% Minimum SA-coc-1210

* At least 30% of the fibre used in the maunfacturing process of this product comes from well-managed forest independently certified according to the rules of the Forest Stewardship Council. *

FSC Trademark © 1996 Forest Stewardship Council A.C.

This report is printed on paper certified by the Forest Stewardship Council (FSC), which is an international labeling scheme providing a credible guarantee as a product of an environmentally well-managed forest, and with vegetable ink for waterless printing (non-VOC ink) not containing volatile organic compounds.

Published September 2002. CM-0228