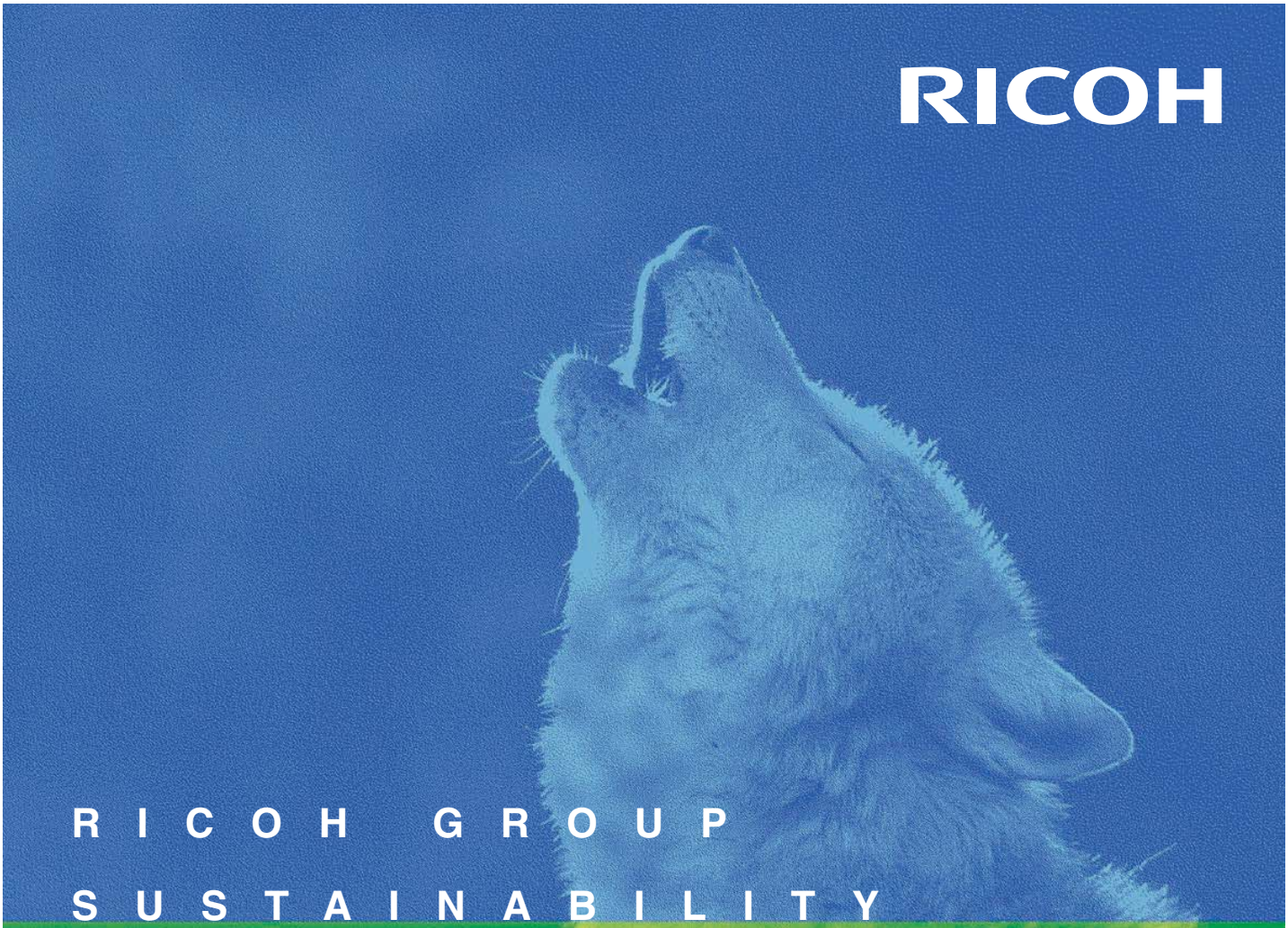
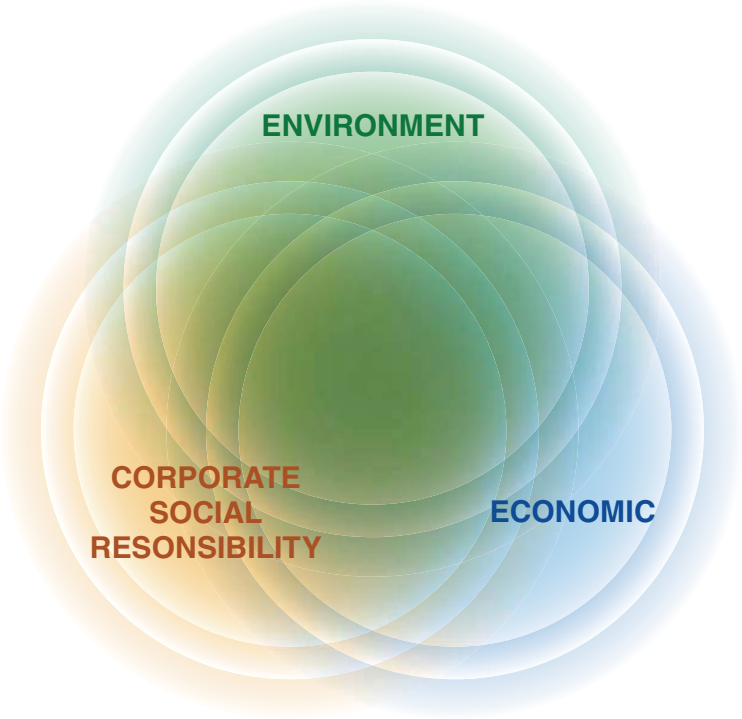
RICOH



RICOH GROUP SUSTAINABILITY REPORT (ENVIRONMENT) 2010

As a good corporate citizen, the Ricoh Group continues to increase its corporate value with a three-pronged focus on environment, society, and economy.

Based on the belief that environmental, social, and economic objectives are not incompatible, the Ricoh Group is committed to making meaningful contributions to the creation of a sustainable society. In the course of business activities undertaken toward this end, we communicate with our stakeholders and seek their understanding and support through appropriate and timely disclosure of information on what we do and how we do it. We also listen carefully to stakeholders and incorporate their opinions into our efforts to improve our business and build greater corporate value. As part of these efforts, we publish this report for the purpose of providing information on the Ricoh Group's sustainable environmental management policies and activities.



RICOH 2010
(CORPORATE PROFILE)

http://www.ricoh.com/about/

- Corporate profile
- Business activities
- Sustainable environmental management
- Corporate social responsibility
- Network
- Corporate history

Sustainability Report (Environment) 2010

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

- Concept of sustainable environmental management
- Improving our products
- Improvements made at business sites
- Basis for sustainable environmental management
- Environmental communication/ Conservation of biodiversity

Sustainability Report (Corporate Social Responsibility) 2010

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

- Concept of CSR
- Integrity in corporate activities
- Harmony with the environment
- Respect for people
- Harmony with society

Sustainability Report (Economic) 2010

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

- Management policy
- Management results
- Financial status

For information related to this report, please also visit	● Information security http://www.ricoh.com/about/security/index.html

■ Guidelines used as reference

In compiling this report, we have confirmed items that should be reported—and work to disclose information to the maximum extent possible—according to the guidelines listed below:

- Global Reporting Initiative (GRI).
  Sustainability Reporting Guidelines (G3)
- GRI. *Biodiversity Resource Documents*
- Ministry of the Environment, Government of Japan.
  Environmental Reporting Guidelines (FY 2007 version)
- Deloitte Tohmatsu Evaluation and Certification Organization Co., Ltd.
  Environmental Ratings Report (FY 2008)

In addition, to emphasize the concept of "environmental risk and opportunity" from the business perspective, particularly in this latest report, we have referred to the following documents:

- The Japanese Institute of Certified Public Accountants (JICPA).
  Disclosure in Japan of Investor-Oriented Information Concerning Climate-Change Risk: Current Circumstances and Issues
- The Climate Disclosure Standards Board (CDSB).
  Reporting Framework (Exposure Draft)
- Securities and Exchange Commission (SEC).
  Commission Guidance Regarding Disclosure Related to Climate Change
- Accounting for Sustainability.
  Connected Reporting—A practical guide with worked examples

Cover photograph:Gray Wolves
Canis lupus, generally known as the gray wolf, was once found over much of the land in the northern hemisphere (North America and Eurasia). Its population has drastically declined, however, mainly due to widespread extermination as the animal was perceived as a threat to livestock and pets. The species is extinct in some of its former habitats, and there are concerns about its survival in an increasing number of areas.

Editorial policy of the Ricoh Group Sustainability Report (Environment) 2010

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

● Target readers

This report is prepared for all present and future stakeholders of the Ricoh Group's sustainable environmental management. It was compiled not only to report on the results of our activities, but also to introduce our environmental policies and the ideas behind the policies, as well as to explain how we proceed with our projects. We have adopted a communication style that we hope will inspire our readers to engage in environmental conservation activities and encourage other people to do so too, thus creating a ripple effect throughout society.

● Policy for information disclosure

Disclosing information worldwide

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

Disclosing financial information

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

Usage of information provision tools

Ricoh releases its environmental reporting online in HTML and PDF formats, and these are available from the Environment section on the Ricoh website. Both forms of the report comprehensively introduce the Group's environmental conservation activities, and are edited in ways effective for the intended purpose.

Ricoh Group Sustainability Report (Environment) (HTML)
The HTML report updates information on a timely basis, aiming to provide the latest information possible. This report includes details and the history of our activities as well as other information, which are not available in the PDF version. HTML format is effective for easy and quick access to desired information.

Ricoh Group Sustainability Report (Environment) (PDF)
The PDF report is edited to provide annual reporting, and is updated on an annual basis accordingly. This format is convenient for getting an overview of the activities of a specific year.

By accelerating the development of environmental technologies, the Ricoh Group will contribute to making reforms toward the creation of a sustainable recycling-based society while achieving its own ambitious targets.

Departing from a model of mass production and mass consumption to build a new business model

Climate change is having a disastrous impact around the world, leading to a number of severe events. Various problems associated with the global environment are now emerging as large-scale crises. In the markets, the depletion and price volatility of natural resources, as well as increasingly stringent environmental regulations have had a critical influence on business. These radical changes in the business world are challenging the traditional principles society and economies are built on. We must now depart from current societal models built on mass production, mass consumption and mass disposal and move toward the creation of a new society innovated with new values and rules. The Ricoh Group's businesses, providing our customers with imaging equipment and solutions, are also facing a time of great change. We can no longer continue the current business model that depends on mass consumption of resources and energy to realize mass trade of great numbers of products. The Ricoh Group believes we should look to a new business model where software can be updated easily so that the same products may be used with the most advanced functions for longer periods.

Taking action to achieve the ideal society for the whole of humankind

The world in which we live is coming to a big turning point: we must now choose whether to continue doing things as we did in the past, perhaps heading for disaster, or to reduce our environmental impact in a planned manner to achieve a sustainable society with a low environmental impact. It is clear that we must choose the latter. However, it is actually very difficult to make reforms to achieve this goal because there are conflicts of interest on multiple levels between nations, regions, companies and individuals. In order for the world to move forward in the right direction, we must make a concerted effort to implement all the necessary measures. In addition to conducting voluntary activities, we may also need to use the market mechanism and advocate the enforcement of certain laws and regulations. Companies grow through competition, and the market mechanism and regulations sometimes provide the driving force for growth. Humankind has overcome a range of problems to reach its present stage of development, but in order to overcome present global environmental problems, we must face up to all these problems and make vital changes to the way we function as a society. Only companies that can face and respond to the wave of changes can become winners in the 21st century. Based on this recognition, the Ricoh Group will turn present difficulties into opportunity and take action toward the creation of the ideal society.

Strengthening measures to deal with global environmental problems through a four-pronged approach—by reducing environmental impact in three areas and by fostering biodiversity conservation

The Ricoh Group regards global environmental conservation as a mission that it must fulfill as a global citizen and is committed to sustainable environmental management to achieve both environmental conservation and profit making. To this end, we have been proactively reducing environmental impact based on the idea that measures for environmental problems do not merely generate costs, but that making appropriate responses to environmental issues is indeed rational behavior from an economic viewpoint. Environmental problems cannot be solved on a short-term basis and we must steadily act to find solutions from a long-term view. This is why we set up our Year 2050 Long-Term Environmental Vision, which expresses our belief that advanced nations need to reduce their environmental impact to one-eighth of fiscal 2000 levels by 2050. Subsequently in March 2009, we issued the Mid- and Long-Term Environmental Impact Reduction Goals, outlining specific steps to realize this vision. This is a "World First" in terms of articulating numeric targets for environmental impact reduction in three areas: energy saving and global warming mitigation, resource conservation and recycling, and pollution prevention. By incorporating these targets in our three-year action plan, we are acting with the participation of all employees to reduce CO_2 emissions throughout the lifecycles of our products, to conserve resources and avoid their depletion, and manage and reduce the use of chemical substances to minimize environmental risks. In conserving the global environment, it is also important to help the Earth maintain and recover its resilience while decreasing any damage caused to the environment. In March 2009, we set out our Ricoh Group Biodiversity Policy to express the specific biodiversity conservation policies that we are integrating into our business activities. Based on these policies, we will identify the impact of our business operations, including those upstream of the supply chain, on biodiversity, and strive to reduce it as part of our management responsibilities, as we do in the above three areas for environmental impact reduction.

Shiro Kondo
President and Chief Executive Officer 近藤史朗

As a top runner in the field of environmental measures, we will continue to contribute to a more sustainable society by developing innovative environmental technologies

Whether our societies and economies can extraxct themselves from the turbulence of the early 21st century toward a future that presents significantly new values largely depends on the development of extensive environmental technologies by industry. This development must yield innovation on a scale that matches the Industrial Revolution. As a member of industry, the Ricoh Group sets challenging targets that need to be tackled right away from the long-term view, and we are working to develop outstanding environmental technologies. These technologies must both improve environmental performance (e.g. energy efficiency) and the user-friendliness of products. They must also renovate production processes to give higher energy efficiency, downsize and extend the lives of products, substantially reduce the exploitation of minerals and fossil resources used in manufacturing through the active recycling of resources and reduce the use of major materials with high depletion risks and chemical substances with high risk to the environment and human health and substitute them with more environmentally friendly ones.

These measures will enable us to become a front runner in terms of environmental measures and achieve both environmental contributions and profit making through this “environmental industrial revolution.” At the same time, if we are to contribute to bringing about constant innovation in this “environmental industrial revolution,” we must also take up the challenge of helping to build a sustainable society in which the environment and the social and economic activities of people can all prosper. However, efforts undertaken on our own are not sufficient. We will continue working together with stakeholders throughout the world, including our customers, suppliers, shareholders and investors, NGOs, NPOs, and the public, to realize a sustainable society. Our goal is to become a corporation that continues to grow while taking care of the global environment.

Here we report the results of environmental impact reductions and economic value creation in fiscal 2009.

Reducing environmental impact

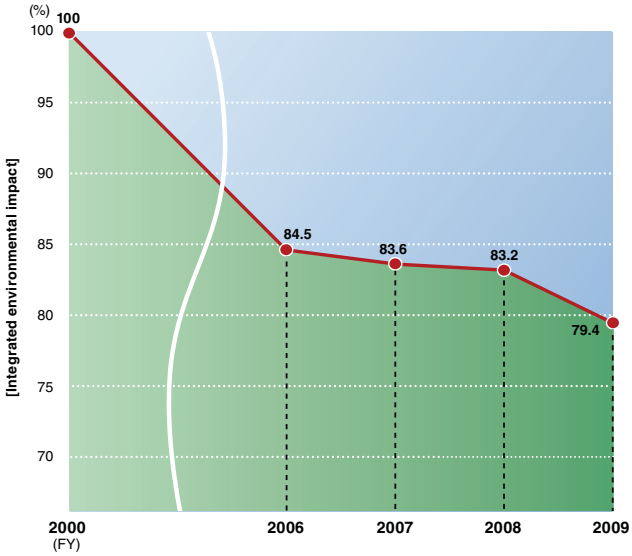
The Ricoh Group has targets to reduce the integrated environmental impact by 20% in fiscal 2010 compared to the levels of fiscal 2000. The integrated environmental impact in fiscal 2009 plunged 20.6% compared with the previous year. Our 16th Environmental Action Plan (fiscal 2008–2010) calls for strategies to encourage greater use at the customer side of energy-saving and duplex-copying functions, such as those to increase resource recycling. Our strategies are steadily producing results. Other contributors to the decline in environmental impact include the effects of the global recession. Energy consumption volume fell in overall business activities and the environmental impact in almost all stages of the lifecycle declined.

Business results for fiscal 2009 and future goals

The Ricoh Group's consolidated net sales in fiscal 2009 decreased by 3.6% from the previous year to ¥2,016.3 billion. In Japan, the Imaging and Solutions sector, Industrial Products sector and other sectors all saw revenue declines, reflecting the tough economic environment. Total sales slipped by 6.6% in Japan from the previous year. On the other hand, sales increased by 10.9% in the Americas compared with the previous year, as the previous year's acquisition of IKON Office Solutions, Inc. strengthened sales structures and expanded sales channels, ultimately making up for a shrinking market in the region. Sales fell 12.4% in Europe and slipped 2.8% in other regions including China and other Asian markets. Total sales outside Japan dipped by 1.2% from the previous year. As a result, operating income shrank by 11.5% year on year to ¥65.9 billion.

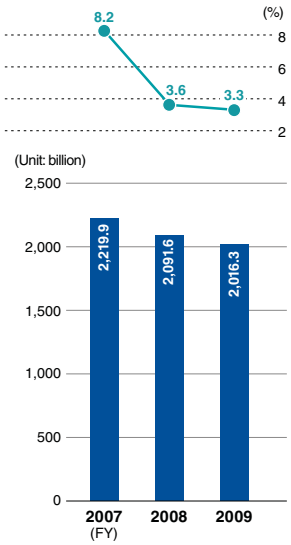
* For more details on the business results, please see the "Investor Relations" page on our website at: http://www.ricoh.com/IR/

Changes in integrated environmental impact (Operations in advanced nations)*

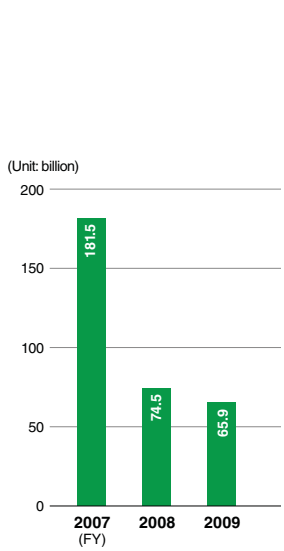


* The production and printing businesses are not included.

Net sales and operating income on net sales



Operating income



■ Topics on sustainable environmental management in fiscal 2009

Ricoh Americas Corporation installed a 100% natural energy-powered electronic billboard in New York's Times Square and began lighting the billboard from solar energy on a trial basis (and on a full scale in June 2010). http://www.ricoh-eco.com/press.asp
Ricoh participated in the Japan Climate Leaders' Partnership (Japan-CLP). See page 65.
Ricoh released its first digital full-color copier, the imagio MP C3500RC/2500RC series. See page 30.
Ricoh signed the Copenhagen Communiqué on Climate Change, which is an initiative led by the Corporate Leaders' Group on Climate Change (CLG) and announced at the 15th Conference of the Parties to the Framework Convention on Climate Change (COP 15) for the early establishment of an anti-climate change framework. See page 7.
Ricoh released imagio Easy PO Box Printing Type A, a software application for multifunctional digital copiers, that helps reduce misprints. See page 26.
Ricoh released the imagio MP 6001GP, the world's first multifunctional digital copier using biomass toner. See page 23.

The Ricoh Group identifies the risks and opportunities that global environmental problems and the resulting social changes could present to business management, and makes decisions for sustainable environmental management based on the results.

Identification of risks and opportunities

Humankind is now changing direction significantly to achieve a sustainable society with low environmental impact. The key to forging a new path is to develop environmental technologies that will bring about a dynamic revolution comparable to the Industrial Revolution. When society undergoes dramatic changes, market needs change significantly too. In an extreme instance, the market might begin to demand products with nearly zero environmental impact that can work without consuming any resources or energy. In this age of the "environmental industrial revolution," the Ricoh Group recognizes that it will face tremendous risks if it cannot respond properly to changes in market needs; for large changes in particular, it is too late to respond to them after they become clear. It is vital that we put ourselves on the alert by predicting future social change. Companies can strengthen their competitiveness and access more chances in the market by identifying and preparing for any possible future environmental risks. Accordingly, the Ricoh Group predicts market needs for a sustainable society with minimal environmental impact, and commits itself to reducing the following environmental impacts to one-eighth (a 87.5% reduction)[1] by 2050 through sustainable environmental management: environmental impact from (1) total CO_2 emissions from its products and services throughout their lifecycles; (2) input of new resources; and (3) the use of chemical substances. 1. See pages 17 and 18.

The Ricoh Group has identified the following major environmental risks and opportunities in its business operations:

- If the Ricoh Group cannot respond to market needs for products with nearly zero environmental impact, it might not be able to continue in business in the future. Against this risk, we will develop environmental technologies that contribute to reducing the environmental impact of both our business and society as a whole and provide the market with products and services that closely meet its needs, thereby becoming a front runner in the environmental field.
- If resources become more scarce or depleted, the Ricoh Group might not be able to continue its manufacturing operations. To prepare for this risk, we are developing new technologies and alternative resources, improving our product designs, and renovating our production processes.
- We are also committed to identifying the environmental impact of our products throughout their lifecycles and to developing technologies to reduce that impact, believing that we will be able to meet the product specifications that a future society might expect by reducing the environmental impact of our business operations and products throughout their lifecycles.
- In order to reduce the environmental impact of our products throughout their lifecycles, it is essential to cooperate with our partners, shown by the Comet Circle.[2] In other words, if any of our partners has a serious impact on the environment, this could pose a risk to the Ricoh Group, but it could also present a great opportunity for the Group to reduce its environmental impact and costs to collaborate with reliable partners.
- The Ricoh Group has a range of impacts on the global environment in consuming resources and energy, using and emitting environmentally sensitive substances, and recycling products. It faces environmental risks from its past, present and future business activities, which are influenced by environmental laws and regulations. However, the Ricoh Group believes that it is its social responsibility to help society reduce its environmental impact, and for this it is sometimes necessary for companies to adhere to the market mechanism as well as laws and regulations. The Ricoh Group believes that companies that are really committed to solving problems in society should embrace the relevant laws and regulations instead of just regarding them as risk factors.
- The business environment surrounding the Ricoh Group is changing every day, and it exposes us to serious risks. To deal with these risks, the Ricoh Group is implementing total risk management (TRM) by appointing departments to manage each risk on the initiative of the Internal Management & Control Division. In fiscal 2010, the Environment Division will serve as the department that manages the following risk items in implementing TRM.
  - **Noncompliance with regard to environmental issues**
  - **Product and environmental safety issues**
  - **Environmental issues in business operations**
  - **Environmental issues for products**

  By preparing for these risks and preventing them from materializing (in the form of nocompliance, accidents, and other problems), we will keep the trust of society and our customers, which will in turn help us grow our business.

By identifying these risks and opportunities, the Ricoh Group will set its numerical targets in its Mid- and Long-Term Environmental Impact Reduction Goals[3], environmental action plan[4], and others.

2. See page 15. 3. See page 17. 4. See page 19.

Our Commitment to Society and Evaluation by Society

Commitment to Society

■ Leadership Declaration on the "Business and Biodiversity Initiative"

Ricoh signed the Leadership Declaration on the "Business and Biodiversity Initiative"[1] at the ninth meeting of the Conference of the Parties to the Convention on Biological Diversity (COP 9), held in Germany in May 2008, thereby committing ourselves to assessing and analyzing the impacts of our business activities on biodiversity and to its conservation.

1. http://www.business-and-biodiversity.de/en/homepage.html

■ The UN Global Compact

Ricoh became the second Japanese company to sign the UN Global Compact (GC)[2] in April 2002. In June 2007, Ricoh also became a signatory to Caring for Climate: The Business Leadership Platform[3] by GC.

2. In January 1999, then Secretary-General of the United Nations, Kofi Annan, called for signatories to the Global Compact and its 10 principles in the areas of human rights, labor, the environment and anti-corruption. See http://www.unic.or.jp/globalcomp/organiz.htm
3. http://www.unglobalcompact.org/Issues/Environment/Climate_Change/index.html

■ Copenhagen Communiqué on Climate Change

In September 2009, Ricoh announced its support for the Copenhagen Communiqué[4] on Climate Change, which demands the early establishment of an anti-climate change framework and advocates limits to the average rise in global temperatures of less than two degrees Celsius compared with pre-industrial levels. The Communiqué, which was proposed by the Corporate Leaders' Group on Climate Change (CLG), an organization developed by His Royal Highness The Prince of Wales and managed by the University of Cambridge, makes the following proposals.

- Developed countries need to commit to immediate and deep emission cuts that are much higher than the global average. They must also provide the necessary financial and technological assistance to developing countries.
- Developing countries will need to draw up their own emission reduction plans in line with their common but differentiated responsibilities and capabilities. In this way they must obtain funding solutions, technological transfer, and capacity buildings.
- Advanced developing countries should aim to develop low-carbon growth plans by 2020, through appropriate economy-wide commitments.

4. http://www.copenhagencommunique.com/

* Ricoh Announces Support for the Copenhagen Communiqué on Climate Change
http://www.ricoh.com/info/090921.html

■ Japan Business Initiative for Conservation and Sustainable Use of Biodiversity (JBIB)

The Japan Business Initiative for Conservation and Sustainable Use of Biodiversity (JBIB)[5] was established on April 1, 2008 by corporations that actively engage in biodiversity conservation. Ricoh has been participating in the program since its inception as one of the founding players.

5. http://www.jbib.org/

■ Japan Climate Leaders' Partnership (Japan-CLP)

In July 2009, Ricoh announced its participation in the Japan Climate Leaders' Partnership (Japan-CLP) as one of the founding members. See page 65.

Evaluation by Society

■ Ranked first in the Corporate Environmental Management Level Survey organized by Nikkei Inc.

• In the 2nd survey (1998) • In the 3rd survey (1999) • In the 4th survey (2000) • In the 8th survey (2004)

■ Given the world's highest ranking for corporate social responsibility by Oecom Research AG of Germany in its environmental ranking

• 1998 (in the electrical and electronic sector) • 2000 (in the IT/electronics sector)
• 2002 (in the OA equipment and home electrical appliances sector) • 2005 (in the IT sector)

■ Recieved the Grand Prize at the 12th Global Environment Award

2003

■ Won the 2003 World Environment Center (WEC) Gold Medal

2003 (Became the first Asian company to receive the prize)

■ Given highest (AAA) evaluation in the environmental ranking organized by Deloitte Tohmatsu Evaluation and Certification Organization

2005–2008 (for four years in a row)

■ Global 100: Chosen as one of the Global 100 Most Sustainable Corporations

2005–2010 (for six years in a row)

■ Won the Grand Prize in the environmental management section of the Fifth Japan Sustainable Management Awards

2007

Ricoh Stocks Incorporated in Leading SRI Indices*

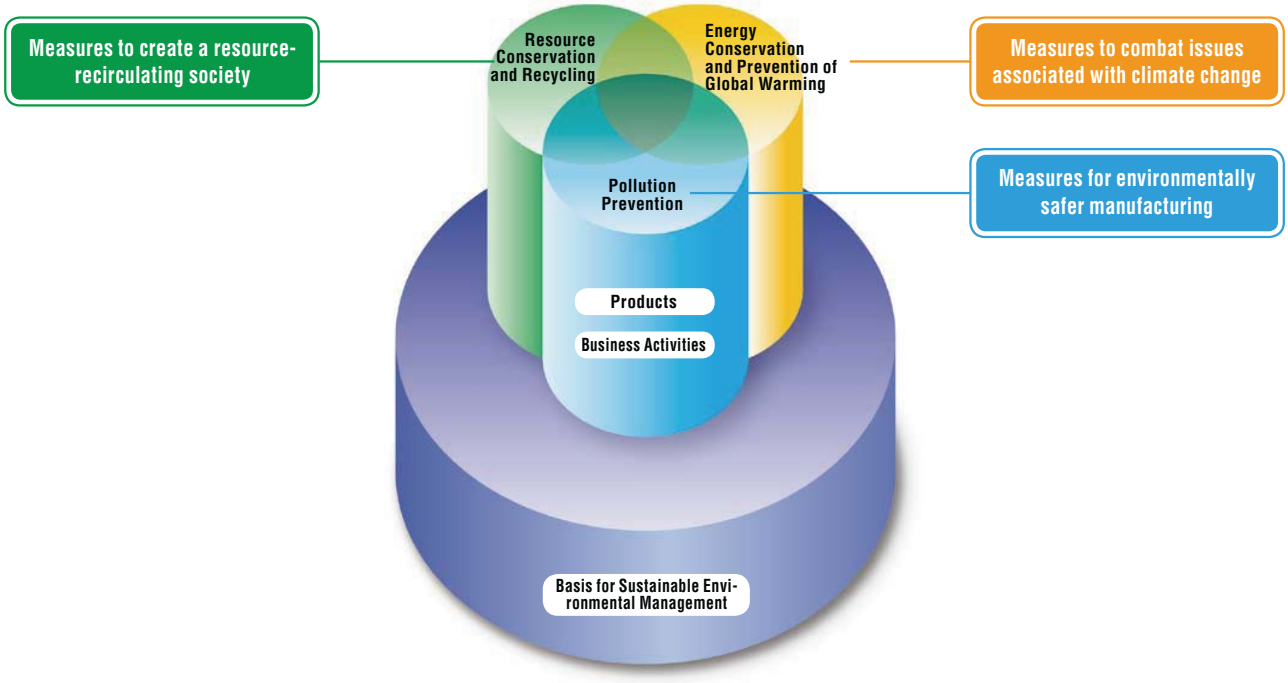
In Japan, Ricoh's stocks are incorporated in a large number of eco funds and SRI funds. In addition, the Morningstar Socially Responsible Investment Index has included Ricoh since its establishment in 2003. Ricoh has also been a constituent member of the FTSE 4 Good Global Index, an index published by the FTSE Group, a joint venture between *The Financial Times* (U.K.) and the London Stock Exchange, for seven years' running.

* As of May 1, 2010

Overall Picture of Sustainable Environmental Management

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

■ Overall Picture of the Ricoh Group's Sustainable Environmental Management (Basis and Three Pillars)



<Profile of Ricoh>

Ricoh Co., Ltd., was established in Japan on February 6, 1936. The Ricoh Group consists of Ricoh Co., Ltd., 266 subsidiaries, and 6 affiliates.* The Ricoh Group engages in activities on a global scale that include the development, production, marketing, after-sales services, and recycling of office equipment including copiers and printers in five regions around the world (Japan, the Americas, Europe, China, and the Asia-Pacific region). The Group has approximately 108,500 employees.

* The definition of a subsidiary/affiliate follows the U.S. Generally Accepted Accounting Principles (U.S. GAAP).

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Main number: +81-3-6278-2111
http://www.ricoh.com/

<Major Product Lines>

Imaging and Solutions

● Imaging Solutions

Digital copiers, color copiers, analog copiers, printing machines, facsimiles, diazo copiers, scanners, multifunction printers (MFPs), and printers as well as related supplies and maintenance services, and related software

● Network System Solutions

Personal computers, servers, networking equipment, network-related software, applications, services and support

Industrial Products

Thermal media, optical devices, semiconductors, electronic component units, measuring instruments

Other

Digital cameras

Ricoh Group Main Brands

The Ricoh Group provides products and services under the following brand names.

RICOH, savin, LANIER, nashuatec, Rex-Rotary, Gestetner, infotec, RICOH InfoPrint Solutions

*From July 2010

Feature Article

Sustainable Environmental Management Network (1)

Introducing Manufacturing Innovation

Production line at the Ricoh Manufacturing (Thailand) Ltd. plant which is located on the Amata City Industrial Estate in Rayong Province, Thailand.

Pursuing process innovation on a global scale aimed at achieving highly productive, low environmental impact manufacturing that has the capacity to adapt to change.

The Ricoh Group launched the Engineering Process Innovation Center in April 2008 with the aim of strengthening the overall capacity of its production sites around the world. Ricoh aims to establish a strong manufacturing system capable of responding to a diverse range of market environments.

Establishing a production system that has the capacity to adapt to change and enable easy adjustment of production volume and equipment models

As globalization progresses, strengthening the operational and overall capacity of production sites around the world has become an issue amongst product manufacturers. The Ricoh Group's production system is currently spread over 29 (major) production sites in five regions throughout the world: Japan, Americas, Europe, China, and the Asia-Pacific region.

The year 1985, when the Ricoh Gotemba Plant began operating as a core production site for imaging equipment such as copiers and printers, was a period of expansion for OA equipment, and mass production was started as conveyor lines that gave high production efficiency through automation were installed at production sites. However, copiers subsequently acquired many additional functions, including printing, scanning, and network functions, and in response to diversifying customer needs there was a large increase in the variety of copier models, with the industry entering a period of high-mix low-volume production. The conveyer manufacturing system was suitable for low-mix high-volume production, but not for production equipment model changes or high-mix low-volume production. In 1999, Ricoh began gradually eliminating fixed conveyor lines and introducing a layout-free production system capable of responding flexibly to production volume and equipment model changes.

In an example of this, the "cart production line," multiple carts are lined up in a row and powered by air cylinders. The carts move along the production line carrying products. Because huge, high-energy consuming conveyors are not required, this system has brought huge reductions in environmental impact and energy costs[1]; moreover, because layout can be changed freely, the formation can be rearranged on a case-by-case basis to suit equipment models and production volumes. In-process inventory, lead time, space, and maintenance are all reduced by 70-80%. In addition, because of the reduction in space, reductions in air-conditioning and lighting costs are also achieved.

1. Air cylinders are used to move the carts, enabling a reduction in electricity consumption of 99% compared with conventional conveyor line motors.

Cart production line

Launch of a manufacturing innovation center to improve the overall capacity of the Ricoh Group's production system

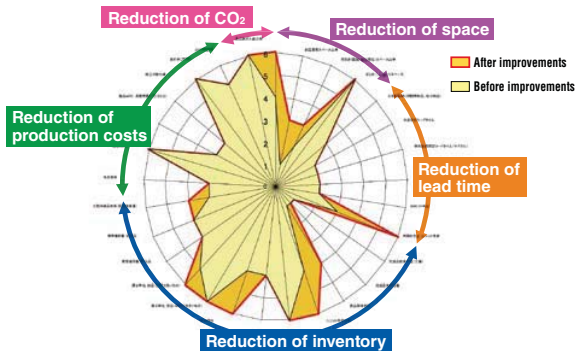
In April 2008, innovation/improvement professionals from Ricoh's production planning and production management bodies joined forces to launch the Engineering Process Innovation Center. The Center's mission is to globally spread the production systems as well as manufacturing innovation strategies and know-how that Ricoh has developed through countless modifications and improvements over the years. "Higher productivity, lower environmental impact, and the ability to adapt to change" form the foundation of the Ricoh Group's production system.

The Engineering Process Innovation Center first of all comprehensively diagnosed the manufacturing capacity of each production site, which until then had not undergone objective evaluation, to directly identify each site's strengths and weaknesses before undertaking action to strengthen and improve the production capacity. Diagnosis covered a total of 28 items in five blocks— space, lead time, inventory, production costs, and CO_2—to facilitate the formulation of concrete improvement methods. Production systems suitable for the products to be manufactured and equipment characteristics were considered and production tools[2] for resolving problems specific to each line were introduced. Following the new concept of the production line design, production tools were also developed in accordance with the concept of "small, inexpensive, portable, immediately operable, and environmentally friendly." This was to enable the system to be installed in any plant anywhere in the world and to eliminate the need for lengthy start-up periods and additional power sources.

In addition, Ricoh's manufacturing capacity is supported by software, hardware, and "humanware." The Engineering Process Innovation Center also backs up training provided to workers implementing improvements in the workplace. The "GPD *Dojo*"[3] is a program that trains key people implementing improvements through lectures on improvement methods and basic quality control in line with Ricoh's basic manufacturing philosophy.

2 & 3. Please refer to the table below.

Production site comprehensive diagnosis chart



2. Waste elimination and paraphernalia supporting product quality

A characteristic of Ricoh's manufacturing innovation is the clear separation of aspects that do and do not depend on people in undertaking improvements in the pursuit of product quality.

● Eliminating waste

For example, in focusing on mounting screws, eliminating waste—completely eliminating actions that create no direct value, such as choosing screws, lining up the screws with holes, etc.— enables minimization of worker load and improves the quality of the screw mounting. Elimination of waste also shows results in reducing takt time, production costs, and environmental impact and is the basic concept underlying Ricoh's production system.

● Paraphernalia (production tools)

An example of solving a problem with "paraphernalia" would be introducing CCD cameras and image-identifying machines into the process for visually checking product labels for incorrect or crooked affixation. No matter how proficient workers are, human mistakes cannot be totally eliminated, but using appropriate production tools can reliably prevent mistakes.

3. What is the GPD *Dojo*?

The keys to improvements on the factory floor are "tools" and "people," and so the GPD *Dojo* was established in 1999 with the purpose of providing worker training. As of March 2010, 293 workers at five production sites within Japan had completed training in the GPD *Dojo* and are now acting as key persons in the improvement of operations at their respective production sites.

The five schools of the GPD *Dojo*

Tool School	**Parts selection, electrical safety training, relay circuits, sequence control and other paraphernalia improvements, and basic knowledge of electrical improvement**
RIPS School (Basics)	**RIPS = Ricoh Production System. Methods for spotting and rectifying/eliminating overstrain, waste, and inconsistency from the standpoint of economic performance**
Problem Solution School	**Approaches to problem-solving and implementation of approaches to fact-spotting**
Quality Control School	**Role of production managers and approaches to work; improvement methods required for product quality control**
RIPS School (Application/ Implementation)	**Implementation of Group improvements, comprehensive process improvements leading to financial contributions, and development of even better production technology, with the central focus on graduates from the RIPS School (Basics)**

Inserting ourselves into the workplace and cooperating with improvement efforts, making comments and lending a hand: it's a system that gets results.

Tsutomu Ushigome
Manufacturing Innovation
Group Leader
Engineering Process
Innovation Center

The purpose of the Engineering Process Innovation Center's activities is to spread the strengths of a production site to other production sites and to correct the weak points of a production site through the lateral spread of other production sites' best practices, resulting in an upward spiral for the Group overall.

Ricoh's already excellent production processes have expanded globally, but operations have been placed in the hands of each production site and disparities have arisen between production sites in results and progress due to weak lateral coordination, leading to lost opportunities. The Engineering Process Innovation Center's Traveling Improvement Unit, which "makes comments, lends a hand, and gets results," inserts itself into the workplace at each production site and works together with the workers to improve operations. For example, with respect to the diffusion of production tools, the Unit obtains feedback on items customized on-site and applies this information to the improvement of core tools. Workers at each production site also see immediate results, leading them to make their own innovations, which in turn leads to a positive cycle of improvement.

The ultimate production line, consolidating Ricoh know-how accumulated over the years, begins operation in Thailand

A new Ricoh imaging equipment production site, Ricoh Manufacturing (Thailand) Ltd. (RMT), began operation on September 17, 2009. Engineering Process Innovation Center members involved in launching the production line compared and considered several production systems, finally adopting the Vertical Rotation Module Production System.[4] In Ricoh's newest production line, the line can be lengthened or shortened by inserting or removing a module, and equipment models and production volume can easily be changed. Very little equipment is fixed and setup is fast, enabling a huge reduction in operating costs and environmental impact. Moreover, Ricoh has introduced production tools with proven results at production sites around the world, establishing a highly efficient production system.

4. See page 12.

Opening Ceremony for the new Thai plant
(Shiro Kondo, President of Ricoh, is sitting third from the left in the front row.)

Exterior view of the new Thai plant

Characteristics of the Vertical Rotation Module Production System

(1) Selection Background (shows how the selection was made from amongst which production systems using what selection criteria)

RMT plant idea: One floor/one straight line, from parts sorting to product shipment

Parts sorting → Assembly → Certification → Packaging/shipment

Product characteristics: A4 printers (small machines/variable models and quantities)

Production system selection matrix from production conditions

Cell production
Vertical Rotation Line Production
Horizontal Rotation Line Production
Free conveyor production
Push-pull cart production line

			Cell production	Vertical Rotation Line Production	Horizontal Rotation Line Production	Free conveyor production	Push-pull cart production line
Conditions	1	Small machines (50 kg or less)	◎	△	◎	◎	○
	2	Straight line	△	○	△	◎	△
	3	Production range (100-500 units/day)	◎	◎	○	○	○

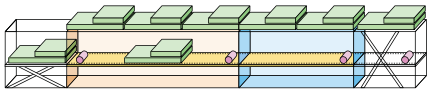
Product palette rotation system evaluation matrix from a QCDSE comparison

			Vertical Rotation Line Production: Assembly/Certification: pushcart	Vertical Rotation Line Production: Assembly: air cylinder/Certification: pushcart	Vertical Rotation Line Production: Assembly/Certification: air cylinder	Push-pull cart production line: Assembly/Certification: pushcart	Push-pull cart production line: Assembly: air cylinder/Certification: pushcart	Push-pull cart production line: Assembly/Certification: air cylinder
1	S	Transportation risks	○	△	△	◎	△	△
2	Q	Product quality (imaging quality/external damage)	△	△	△	◎	○	○
3	C	Equipment costs	○	○	◎	○	○	◎
4	C	Product palette/cart transportation task losses	◎	○	△	◎	○	△
5	C	Used space	△	△	△	◎	◎	◎
6	D	System changeover losses	○	◎	◎	△	△	△
7	D	Synchronization (layout organization superiority)	△	△	○	◎	◎	◎
8	E	CO_2 emissions	○	○	◎	○	○	◎
		Total points (◎2 points/○1 point/△0 points)	6	5	7	11	8	9

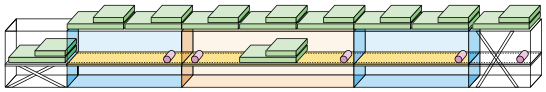
(2)

● Characteristic 1

● Resolution of conventional problems ●
The production line can be lengthened or shortened by inserting or removing modules



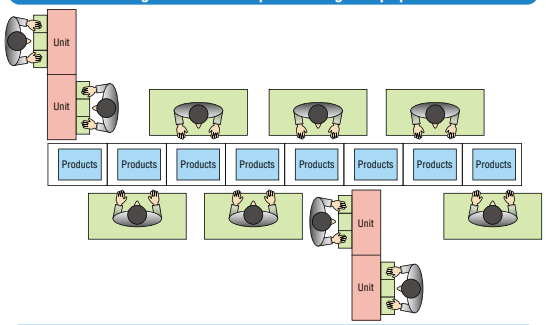
When adding modules



- Ignition costs are reduced through introduction of modules
- Takt times can be set for each assembly and certification area
- Automatic insertion of modules is also fully operational

● Characteristic 2: effective use of space on both sides of the production line

High efficiency and space reduction achieved through face-to-face positioning of equipment



Simultaneous unit processing made easy by the efficient utilization of line-side space

* The best product system is selected for each production site in accordance with the production environment and conditions for each site.

Reducing environmental impact while simultaneously improving productivity—this is a practice that is unique to Ricoh.

Satoshi Nakanishi
Group Leader,
System Innovation Group
and Strategy Planning Group
Engineering Process
Innovation Center

The concept of eliminating waste has penetrated Ricoh Group production sites. Without our being conscious of these activities being especially environmentally friendly, I believe various improvements have led to a reduction in environmental impact. Attaching the same priority to environmental activities and improvements to production workplaces is something that is unique to Ricoh and is implemented in our sustainable environmental management. Improvements cannot move forward if we think that inventory must be held on to and absorbed in order to respond to fluctuations in production volumes; inventory hides a range of problems. The world has been in economic recession since 2008, and all product manufacturers have agonized over adjusting production volumes, with large inventories worsening cash flow. It is therefore meaningful to create procurement, production, and supply processes that can endure change, without relying on inventory. Since its establishment, Ricoh's new Thai plant has implemented many mechanisms that Ricoh has cultivated over the years in order to realize high productivity and low environmental impact, and we will continue to make further improvements with the aim of achieving manufacturing that can endure and adapt to change.

* Case examples of production process innovations (optimum product control using RECO-View RFID Tag Sheets) See page 39.

We need to reduce the environmental impact of mankind's economic activities to a level that the Earth's self-recovery capabilities can deal with.

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

1 Pre-Industrial Revolution lifestyles with low environmental impact

In ancient times, people led their lives simply as members of natural ecosystems. Their activities depended on the availability of the bountiful resources of the Earth. Before the Industrial Revolution, the environmental impact of mankind's economic activities—which involved the consumption of natural resources such as water, air, and organisms—was limited and small enough for the natural environment to recover unaided.

2 Rapid increase of the impact of our economic activities on the global environment

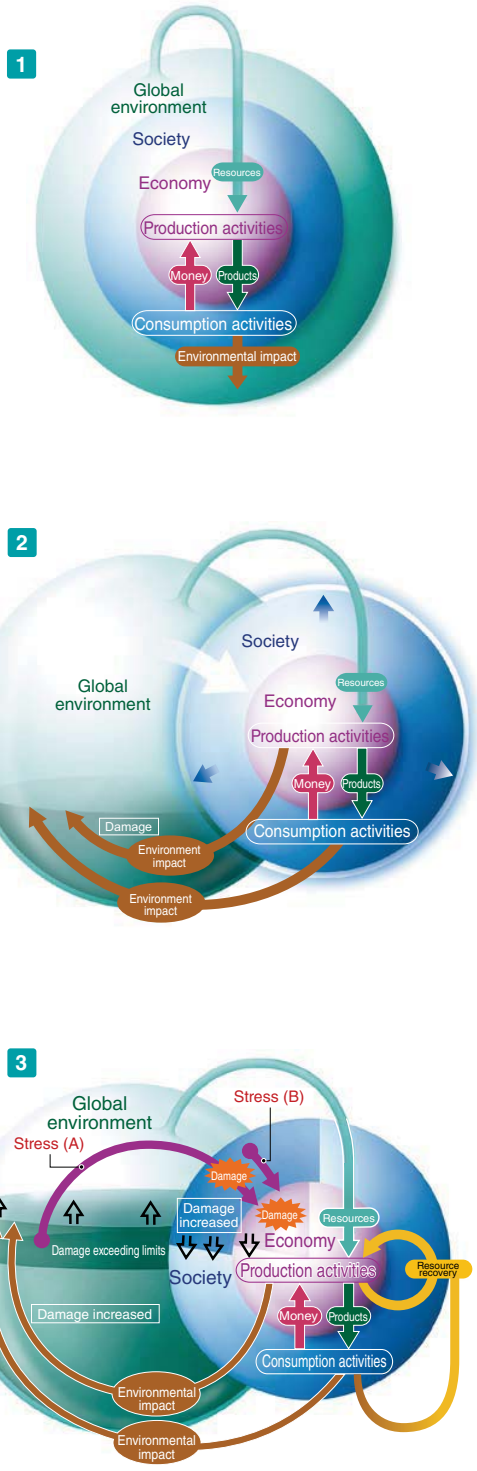
The Industrial Revolution started in 18th century England and spread around the world quite rapidly. Industrialization symbolized a rich society, and people shifted toward a new energy- and resource-intensive lifestyle. It was the beginning of an age of mass production, mass consumption, and mass disposal. The environmental impact resulting from such human activities has increased significantly.

The changes in society also brought with them some adverse consequences including pollution in many places around the globe. People had to face up to problems such as waste disposal along with air and water pollution. In retrospect, these early problems were a prelude to modern global environmental problems. In those days, however, the problems were handled locally, not globally.

3 Clarion call for the future of the global environment and humankind

At the end of the 20th century, it became evident that damage caused by the increasing environmental impact affected our lives on an international level, rather than merely on a local or national level. A growing number of people began to warn of environmental deterioration and its direct impact on our economic and social activities. People finally started to become mindful of the fact that our economic activities had inflicted greater damage to the natural environment than its self-recovery capacity could deal with; and this excessive strain on the global environment was the root cause of many problems, such as global warming and other climate change phenomena, resource depletion, environmental pollution, and a decrease in the biodiversity. It became widely recognized that if left uncontrolled, the environmental impact we are responsible for will become a serious threat to the future of humankind.

Three Ps Balance™: Representing the Relationship between the Global Environment and Society



4 Responses by businesses and society

Today, people are paying more attention to activities that reduce damage to the global environment, including recycling and prevention of global warming. Business entities, the mainstay of industrialization processes, cannot gain public support if they do not deal with environmental issues more seriously. Manufacturers face such challenges as promoting smaller products with longer lifecycles, energy conservation, and resource recycling, as well as providing the maximum benefit to society and companies with minimum resources. Global companies as well are expected to support and promote the awareness of environmental conservation in developing countries and regions so that they can achieve economic progress with minimum environmental impact. People have also started to recognize the importance of increasing the self-recovery capabilities of the global environment through such efforts as improving forest ecosystem conservation.

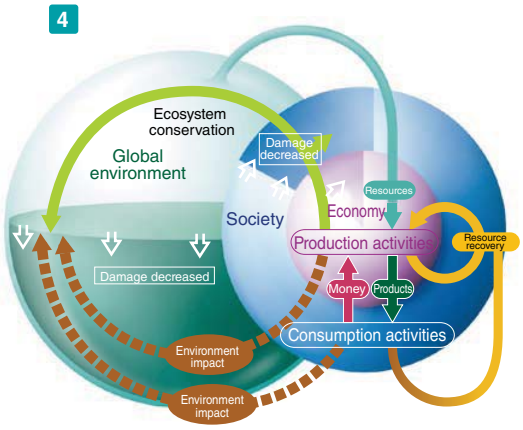
5 The Ricoh Group's efforts toward achieving the ideal society

Ultimately, our goal is to help build a society in which the impact on its environment is maintained at a level that never exceeds the Earth's self-recovery capabilities. To make this happen, more than merely implementing environmental conservation activities is necessary; society needs to formulate clear-cut long-term visions and goals that will guide the specific actions required.

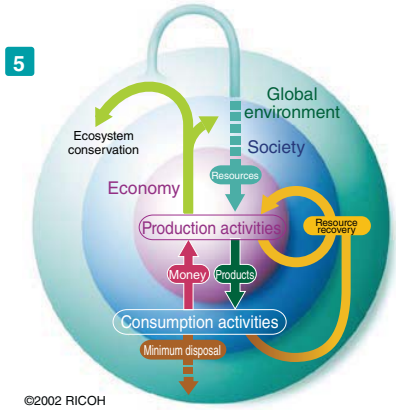
At the Ricoh Group, we have formulated the Year 2050 Long-Term Environmental Vision as a milestone on the path to attaining the ideal society. Based on this long-term vision, we have adopted the Mid-and Long-Term Environmental Impact Reduction Goals[1] and the Environmental Action Plans[2], and have been working in accordance with these policies. To preserve the global environment for future generations, the Ricoh Group is committed to taking action continuously with greater environmental awareness and clearer goals.

1. See page 17. 2. See page 19.

■ Status Quo



■ Pursuing the Ideal Society



Environmental impact remains within the self-recovery capabilities of the global environment.

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

For the Ricoh Group to become the type of organization we envision, not only does the Group need to realize change towards the creation of a sustainable society but society as a whole also needs to realize such change. In 1994, we established the Comet Circle as the basis to encourage such change. The Comet Circle expresses the greater picture of our environmental impact reduction scheme, which includes not only the scope of the Ricoh Group as a manufacturer and sales company but also the entire lifecycle of our products, including upstream and downstream of our business activities. Being well aware that product manufacturers like Ricoh, because of their involvement in the early phases of a product's lifecycle, can make the greatest contribution to reducing environmental impact, we engage in all business taking into account the Comet Circle.

Flow of the Comet Circle

Each circle in the chart below represents our partners that can help develop a sustainable society. The new resources harvested by the materials supplier from the natural environment (upper right) will be turned into a product through moving from the right to left along the upper route, finally reaching the users (customers). The used products will follow the route below from left to right.

(1) Identifying and reducing the total environmental impact at all stages of the lifecycle

To reduce the environmental impact throughout the entire product lifecycle, we must identify the degree of impact at each stage, from business process to transportation, by all involved parties—the Ricoh Group, suppliers, customers and recycling companies. Using the Sustainable Environmental Management Information System, which covers all of these stages, we identify the environmental impact to promote development of environmental technology and reuse and recycling of our products, thus striving to reduce the total environmental impact.

(2) Putting priority on inner loop recycling and promoting a multitiered recycling system

Resources have the highest economic value when they are manufactured into products and used by customers. The Ricoh Group puts priority on reusing and recycling products and parts, expressed as the inner loops of the Comet Circle, to return used products to their highest economic value. When a part cannot be reused in a product, we will recycle it as a material. In such cases, we make every effort to recycle the part into a material with a quality as high as possible or to recycle it in the closed loop recycling system, or a system which allows the recycled material to be used within the Group, thereby achieving the highest possible economic value. We also repeat recycling as many times as possible under the "multitiered recycling system" to reduce the need to use new materials and ultimately reduce the volume of waste generated.

● More economically rational recycling

In a sustainable society, used products should not be treated as waste but as valuable resources. That is, a recycling system must be developed in which products and money flow in opposite directions in the post-product-use stages as well as the original production and marketing stages. The Ricoh Group, making use of an upgraded design, has established a system to reuse parts repeatedly in production. In partnership with recycling companies, we have been working on quality improvement of recycled resources and minimization of energy used and costs needed for reuse and recycling. This way, we are promoting a more economically rational recycling system that has a smaller impact on the environment.

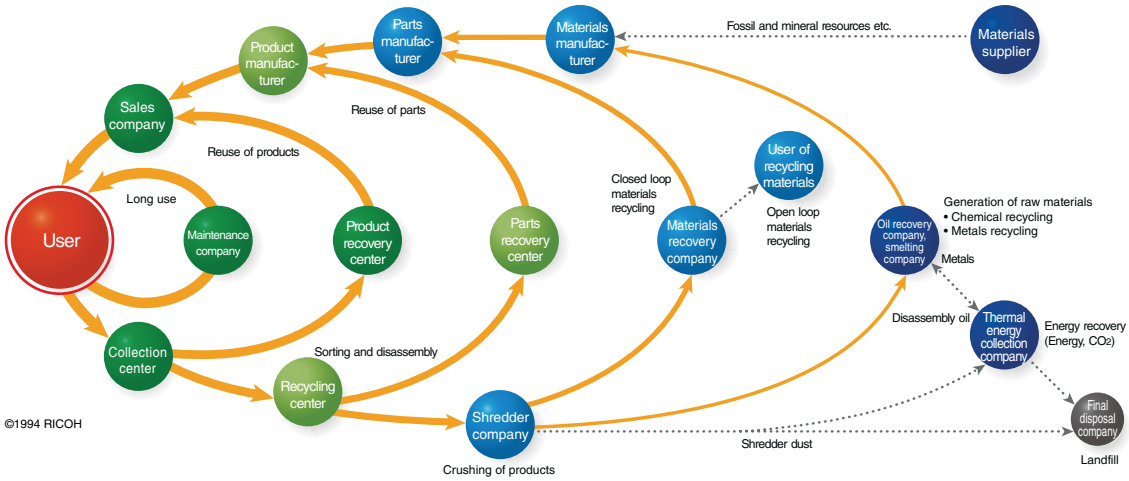
● Reducing the needs of new resources with greater use of recovered resources

Since the initiation of the Comet Circle in 1994, the Ricoh Group has built a system under which used products are recovered and reintroduced into the market, giving way to more efficient use of resources. Given the possibility that some mineral resources may be depleted in the near future, manufacturing styles cannot be said to be sustainable if they require large amounts of resources. The Ricoh Group will accelerate our shift to the new style of manufacturing, whereby the value of resources is maximized through recycling and use of new resources in production is greatly reduced.

(3) Establishing a partnership at every stage

To effectively reduce the environmental impact, close communication and information-sharing among partners is critical. The Ricoh Group strives to reduce its environmental impact in all of its business areas through partnerships with parties at all stages of the product lifecycle. The initiatives include the reduction of environmentally sensitive substances in cooperation with materials and parts manufacturers, improved efficiency in transportation, and green marketing. We also offer solutions to our customers to reduce the environmental impact of their offices. By disclosing information and know-how garnered through these activities and working with local communities, the Ricoh Group helps reduce the environmental impact of society as a whole.

Concept of a Sustainable Society: The Comet Circle™



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

Ricoh's Environmental Principles and "No Regrets" Policy

Ricoh's Environmental Principles

Based on its management philosophy, Ricoh established its Environmental Principles in 1992 and revised them in 1998, 2004, and 2008. The Principles clearly show the basic policy and action guidelines that the Group should follow for environmental conservation and represent the Group's commitment to sustainable environmental management, which makes environmental conservation and the creation of economic value compatible. In the initial version of the Principles, we clearly stated our commitment to environmental conservation for the global environment as one of our priority corporate activities and promised to make efforts towards environmental conservation from both the business operations and products aspects. In the subsequent revisions made to reflect the globalization of environmental problems and the progress of our Group's environmental activities, we added our ideas on sustainable environmental management, which makes environmental conservation and business management compatible, and described our commitment to the creation of a sustainable society. The ideas described in the present version (revised in 2008) can be summarized into three pledges, which are described on the right.

Basic Policy

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

Action Guideline

1. Achieve superior targets
   Complying with laws and regulations as a matter of course, we dutifully fulfill our environmental responsibilities, setting targets that go ahead of those that society currently requires, and by achieving these, create economic values.
2. Develop innovative environmental technologies
   We will take steps to develop and promote innovative environmental technologies that will give increased value to our customers and can be utilized by various people.
3. Encourage all employees to participate in environmental activities
   In all our business activities, we strive for awareness of environmental impact, thereby involving all Ricoh employees in implementing continuous improvements to prevent pollution, and use energy and natural resources more efficiently.
4. Be attentive to product lifecycle
   To provide our products and services, we spare no effort to reduce environmental effects in all stages of the product lifecycle, from procurement, manufacturing, sale, and logistics, to usage, recycling, and disposal.
5. Improve employees' environmental awareness
   We at Ricoh wish each employee to be attentive to a broader range of social issues and mindful of enhancing environmental awareness through proactive learning processes, designed to commit the employee to environmental conservation activities according to his or her responsibility.
6. Contribute to society
   By participating in and supporting environmental conservation activities, we will contribute to creating a sustainable society.
7. Optimize communication with stakeholders
   Ricoh Group will expand its environmental conservation activities with stakeholders. In addition, we will fully communicate and proactively cooperate with our stakeholders to reassure communities of our dependability and commitment to the environment.

Established in February 1992
Revised in February 2008

(1) We regard environmental conservation as a mission that we must fulfill as a global corporate citizen. We will set ambitious targets for global environmental conservation and implement them in addition to complying with legal requirements as part of our normal duty.

(2) We will reduce the environmental impact of our products throughout their lifecycles, including the manufacture of materials and parts and the use and disposal of products.

(3) We will work to develop innovative environmental technologies for wide use in society and will conduct improvement activities with the participation of all employees.

The Ricoh Group always conducts business based on the three pledges, which are incorporated in its Mid- and Long-Term Environmental Impact Reduction Goals. In 1992, when Ricoh's Environmental Principles were formulated, the United Nations Conference on Environment and Development (Earth Summit) was being held in Rio de Janeiro in Brazil and the Framework Convention on Climate Change and the Convention on Biological Diversity were adopted. In the same period, Ricoh included environmental conservation as a priority management target based on its "no regrets" policy. This policy was proposed by then President Masamitsu Sakurai of Ricoh (present chairman of the company) in 1998, one year after the Conference of the Parties to the Framework Convention on Climate Change (COP 3) was held in Kyoto. Through the "no regrets" policy, the Ricoh Group announced to the public its ideas on environmental conservation—"CO_2 emissions reduction activities will lead to cost reductions and help customers lead more fulfilling lives. The Ricoh Group will foster its environmental conservation activities in such a manner as to make the growth of its business and environmental conservation compatible. Even if CO_2 and other greenhouse gas emissions are proved not to be the cause of global warming in the future, we do not regret what we have done for the environment." At that time, there was still no scientific consensus with regard to the factors causing climate change and there were many who were skeptical about the impact of increases in greenhouse gases on global warming. However, Ricoh decided to reduce CO_2 emissions and include environmental conservation as one of its important business activities. It is natural for there to be arguments about global warming, which is a scientific issue, but if we wait until everything is proven beyond doubt, it may be too late to take action. If there are problems to be tackled now, we must make efforts to solve them to create new value. We never regret what we have done, regardless of what conclusion may be reached regarding the factors causing global warming. This is Ricoh's "no regrets" policy.

Establishing the Mid- and Long-Term Environmental Impact Reduction Goals based on the Year 2050 Long-Term Environmental Vision

Advanced nations need to reduce their environmental impact to one-eighth the fiscal 2000 levels by 2050. Based on this perception, the Ricoh Group has established the 2050 Environmental Impact Reduction Goals for the three key areas of energy conservation, resource conservation, and pollution prevention: A world first for business.

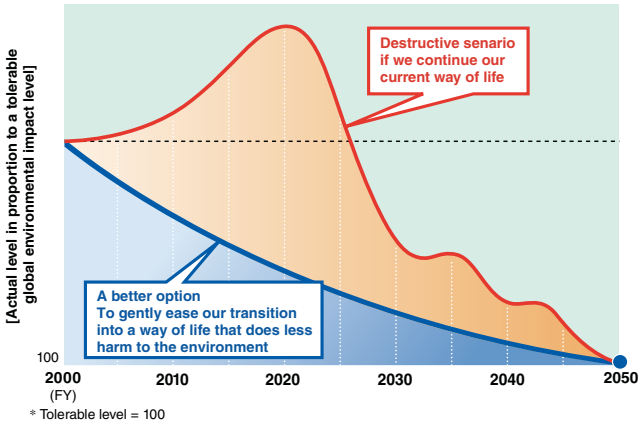
Importance of environmental conservation actions that are based on a long-term vision

To conserve the global environment and achieve a sustainable society, it is necessary to limit environmental impact to a level within the Earth's self-recovery capabilities. To meet this requirement, we must first envision an ideal society and global environment; then we must create a long-term vision to realize our ideals and aggressively promote environmental conservation activities. Global environmental conservation is a challenge for which there is no second chance, and we will never be able to realize our vision if we act on short-term goals. Recognizing this, the Ricoh Group has analyzed a variety of data collected from IPCC reports and a number of other sources. In 2050, the world's population will already have exceeded nine billion. It is possible that by this time fossil and mineral resources will have been depleted and our ability to use land in the way we would like will be restricted. At the same time, the world may have shifted from oil to alternative energy sources, which will have led to substantial changes in social and business models. But whatever changes the future may bring, what we know for sure right now is that if the corporations of the world stick to their business-as-usual approach and continue to increase their environmental impact, at some point the Earth's capacity to sustain us will take a sharp downturn and we will find ourselves heading down an irreversible path of destruction. With this in mind, the Ricoh Group formulated the Year 2050 Long-Term Environmental Vision in 2005. In doing so, we recognized that advanced nations need to reduce their environmental impact to one-eighth of fiscal 2000 levels by 2050 and concluded that it was necessary to set up specific action plans under this vision.

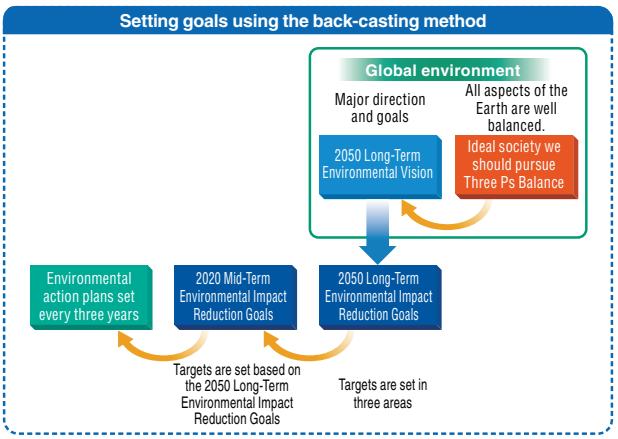
Setting targets using the back-casting method in the three areas

The Ricoh Group uses the back-casting method to set targets. In this approach, we first set final goals and then determine target values as milestones on the journey to these goals. We have set the Year 2050 Long-Term Environmental Vision based on the Three Ps Balance as our final goals, and in March 2009 we issued the Mid- and Long-Term Environmental Impact Reduction Goals to describe specific steps to realize this vision to further strengthen and accelerate our activities with clearly articulated targets. In the Goals, we set numeric targets for environmental impact reduction in three key areas—energy conservation and global warming prevention, resource conservation and recycling, and pollution prevention—using 2020 and 2050 as the standard years. As the major targets, we chose "CO_2 emission reduction throughout the product lifecycle," "reduction of new input of resources with prospects of resource depletion," and "management and reduction of chemical substances to minimize environmental risks." We use the numerical targets in the environmental action plans we issue every three years in order to develop highly effective actions to achieve the goals.

Two scenarios for reducing global environmental impact



Setting environmental targets



Measures to reduce environmental impact in terms of absolute value and to restore the Earth's self-recovery capabilities

With the Mid- and Long-Term Environmental Impact Reduction Goals, the Ricoh Group has become the first company to set a variety of specific environmental goals to be achieved for the three key areas. These goals encompass more than the reduction of CO_2 emissions. We have set these goals because we realize that global warming is not the only potential problem the world may face in 2050. If we set reduction of CO_2 emissions as the only goal for our activities, other types of impact, those caused by careless treatment of chemical substances or wasteful use of natural resources, for example, may occur in the process. If that were to happen, environmental impact reduction goals might be achieved in a defined area, but the environmental impact might increase more than the amount reduced in other areas or processes. Also, goals set based on units and factors alone, which are efficiency-based relative indices, might not be effective for environmental conservation in practical terms. Therefore, it is very important to acknowledge the total amount of environmental impact for the entire lifecycle of products and set goals using "absolute values." In addition, while reducing our impact on the environment, it is essential to maintain or restore the Earth's self-recovery capabilities. Based on this idea, we laid down the "Ricoh Group Biodiversity Policy" in March 2009 to articulate the measures we take in our business activities to protect biodiversity. With the new policy, we will expand our conservation activities for maintenance and recovery of nature's self-recovery capabilities to a wider range of environmental impact reduction measures, which correctly reflect the impact we have on biodiversity throughout all supply chains.

Major Ideas in the Ricoh Group Mid- and Long-Term Environmental Impact Reduction Goals

Mid- and Long-Term Goals		Concept	Major activities
Energy Conservation and Prevention of Global Warming	**Reduce the total lifecycle CO_2 emissions by the Ricoh Group (including emissions of the "five gasses" converted into CO_2) by 30%* by 2020 and by 87.5% by 2050 from the fiscal 2000 level.** * Equal to 34% reduction from the fiscal 1990 level (for domestic CO_2).	• Set targets for the entire lifecycle with the aim of achieving the reduction levels set for society as a whole based on the warnings of IPCC. • Reduce the CO_2 directly emitted from business activities by setting targets for each stage, including production and distribution. • Reduce electricity consumption of the products in an active manner by setting high targets. • Collaborate with suppliers at the procurement stage.	• Develop technologies that improve the environmental functions of products and facilitate the use of such products. • Make suggestions to customers to help them fully enjoy the environmental functions of our products. • Realize "low carbon manufacturing" through innovation of production processes. • Actively use solar power and other renewable energies for electric generation. • Reduce CO_2 emissions at the procurement stage by making products smaller and their lives longer and by recycling more products. • Support suppliers in their environmental impact reduction measures. • Obtain more accurate information on CO_2 emissions during the distribution stage, increase distribution efficiency, and promote a modal shift.
Resource Conservation and Recycling	**(1) Reduce the new input of resources by 25% by 2020 and by 87.5% by 2050 from the fiscal 2007 level.** **(2) Reduce the use of or prepare alternative materials for the major materials of products that are at high risk of depletion (e.g., crude oil, copper and chromium) by 2050.**	• Discourage new input of resources and promote efficient use of the limited resources in business activities. • Recognize that resource conservation measures directly reduce production costs and help avoid risks accompanied by possible increases in resource prices and ensure stable supplies of products in the future. Position the measures as a central part of management.	• Develop technologies to make products/parts smaller and lighter. • Develop technologies to improve reliability of products/parts, such as technologies to make product life longer. • Increase recovery rates of used products. • Increase recycling rates of products/parts/materials by developing technologies for recycling and efficient use of recycled items. • Reduce the use of materials at a high risk of depletion or replace them with other materials, such as biomass plastics and toner inks.
Pollution Prevention	**Reduce the impact of chemical substances on the environment by 30% by 2020 and 87.5% by 2050 from the fiscal 2000 level.**	• Implement risk management that covers not only impact on the environment but also impact on human health. • Carry out risk management taking information on consumption, emissions, hazards, and exposure of chemical substances into consideration. • Give priority to the high-risk chemical substances in reduction and replacement in order to prevent possible pollution.	• Increase the level of chemical substance management system to improve risk management. • Promote reduction and replacement of high-risk chemical substances.

* Targets are set based on the business areas and market share for fiscal 2000 (see the news release at http://www.ricoh.com/info/090501.html).

Environmental Action Plan up to Fiscal 2010 and the Results of Fiscal 2009

The Ricoh Group's 16th Environmental Action Plan (FY 2008-2010) * Target year is set for fiscal 2010 unless otherwise specified.

1 Using resources effectively to realize a resource-recirculating society

(1) Develop environmental technologies aiming to reduce the use of resources. Page 21

- Develop resource-saving technologies to reduce the input of new resources in business and society as a whole.

(2) Increase recirculation of resources and use resources effectively to reduce the use of new resources in products. Page 27

1) Promote the reuse of parts.

- Increase the use of reusable parts recovered from used products to 1,910 tons by fiscal 2010 (Japan).
- Increase the use of reusable parts recovered from used products to 6,000 tons by fiscal 2010 (outside Japan).

2) Promote PCMR (plastic closed material recycling) (Japan).

- Achieve the fiscal 2010 target for the quantity of recycled plastic used. Fiscal 2010 target: 750 tons.

3) Increase the amount of resources recirculated from used products (outside Japan).

- Increase the amount of resources recirculated from used products (the amount reused + the amount recycled) to 16,000 tons by fiscal 2010.

4) Use biomass resins for products.

- Commercialize biomass toners.

(3) Reduce waste generated by production activities. Page 41

1) Reduce waste of resources in the thermal media business.

- Reduce the amount of waste generated by 10%, compared to fiscal 2006 figures.

2) Reduce waste of resources relating to packaging materials.

- Reduce packaging material waste per production volume in the manufacturing of imaging products in Japan by 30% compared to fiscal 2006 figures.
- Reduce packaging material waste per production volume in the manufacturing of imaging products outside Japan by 30% compared to fiscal 2007 figures.

3) Reduce waste generated in the manufacturing of polymerized toners.

- Reduce waste generated per production volume by 17%, compared to fiscal 2007 figures.

2 Developing frontier environmental technologies to cope with climate change problems and promoting business activities that reduce energy consumption

(1) Develop environmental technologies for energy conservation Page 21

- Develop technologies to increase the energy efficiency of products and production processes that contribute to the reduction of CO_2 emissions from business and society as a whole.

(2) Improve the energy-saving performance of products. Page 24

1) Achieve Ricoh's energy-saving targets.

(3) Reduce greenhouse gas emissions in production activities. Page 37

- Reduce CO_2 emissions by 12% by fiscal 2010 (Ricoh and manufacturing subsidiaries in Japan) compared to fiscal 1990 figures.
- Reduce CO_2 emissions by 10% by fiscal 2010 (manufacturing subsidiaries outside of Japan) compared to fiscal 1998 figures.
- Reduce emissions of greenhouse gases other than CO_2 by 10% by fiscal 2010 (semiconductor business sector) compared to fiscal 1995 figures.

(4) Reduce greenhouse gas emissions in non-production activities. Page 48

- Reduce CO_2 emissions to a level that is below fiscal 2006 figures (Ricoh and non-manufacturing subsidiaries in Japan).

(5) Reduce CO_2 emissions in logistics. Page 53

- Improve by 1% or more by the basic quantity unit (compared to the previous fiscal year's figures).

(6) Expand CO_2 emission reduction efforts to involve suppliers. Page 35

(7) Contribute to the reduction of environmental impact at customers' sites. Page 50

1) Survey the frequencies of energy-saving and duplex copying functions used and raise their rates of use.

(8) Promote the use of environmental functions at the offices of the Ricoh Group. Page 48

- Promote the use of energy-saving functions at offices of the Ricoh Group.

3 Upgrading chemical substance control aiming at environmentally safer manufacturing and business activities

(1) Improve environmentally-friendly functions. Page 31

1) Promote measures to reduce chemical emissions.

- Observe Ricoh standards that cover such substances as ozone, dust, and VOCs.

(2) Upgrade risk management relating to chemical substances. Page 44

1) Establish a global system for management of risks from chemical substances.

2) Reduce environmentally sensitive substances.

- Reduce the amount of environmentally sensitive substances used by at least 30% (Ricoh production sites and manufacturing subsidiaries) compared to fiscal 2000 figures.
- Reduce environmentally sensitive substance emissions by at least 80% (Ricoh production sites and manufacturing subsidiaries) compared to fiscal 2000 figures.

3) Make estimations of environmental debt and reflect the result in the financial accounts.

- Make estimations of environmental debt associated with PCBs and asbestos available for the premises of Group companies covered by the consolidated accounting.
- Incorporate the environmental debt in the financial accounts of the Ricoh Group.

(3) Enhance the management of chemical substances contained in products. Page 31

1) Respond to the REACH Regulation.

- Upgrade systems for management and information transmission necessary for responding to the REACH Regulation.

4 Conserving biodiversity

(1) Promote ecosystem conservation activities to enhance the self-recovery capabilities of the global environment. Page 72

Progress Made in Fiscal 2009

	While developing technologies to downsize products and extend their lives, we began developing technologies to use recycled resources heading toward 100% reuse and recycling and to reduce the use of materials with high depletion risks and replace them with other materials.
	Weight of parts reused reached 1,703 tons.
	Weight of parts reused reached 6,934 tons.
	Amount of recycled plastic used reached 960 tons.
	Amount of resources recirculated reached 24,712 tons.
	We released the imagio MP 6001GP, a multifunctional digital copier using biomass toner onto the market in November 2009.
	Waste generation was reduced by 5.7%.
	Ricoh Gotemba Plant: Achieved a 24.4% reduction. Tohoku Ricoh Co., Ltd.: Achieved a 16.3% reduction. Ricoh Elemex: Achieved a 26.9% reduction.
	RIF: Reduced by 3.3% RPL: Increased by 5.6% REI: Reduced by 19.3%
	Reduced by 23.3%.
	We are developing technologies to make our products more user-friendly and more energy-efficient as well as a production process technology to maximize thermal use efficiency.
	Our copiers, multifunctional copiers, and printers all meet energy-saving goals.
	Total emissions were reduced by 13.5%. *Increases of CO_2 due to business growth through M&A and change of the electricity conversion factor were calculated based on CDM. Based on this idea, the emissions for Ricoh Printing Systems, Ltd. and Yamanashi Electronics Co., Ltd. are treated as increases due to business growth.
	Reduced by 9.2% for the boundary set for the 15th Environmental Action Plan (FY 2005-2007). Increased by 7.6% when emissions due to business growth (Ricoh Thermal Media) are included.
	Emissions of greenhouse gasses other than CO_2 were reduced by 47%.
	Total CO_2 emissions by non-manufacturing subsidiaries in Japan decreased 9.5%.
	CO_2 emissions per ton kilometer of transportation were improved by 2.6% from the previous year.
	We reduced CO_2 emissions in cooperation with model suppliers, specifically by setting targets for fiscal 2009 with our suppliers and providing them with in-house know-how.
	We made proposals to customers to encourage them to use the energy-saving mode. In fiscal 2010, we will continue to visualize the environmental impact of our products in use and make proposals to reduce their environmental impact both inside and outside Japan.
	We set targets for fiscal 2009 and achieved them. [Rate of continuous use of the energy-saving mode] •Machines that recover from energy-saving mode in 10 seconds (including those equipped with the 10-second recovery mode) Target: 100% Result: 100% •Other machines Target: 90% Result: 99%
	Emissions of environmentally sensitive substances from products were ensured to meet the Blue Angle requirements enacted in January 2007. Seventeen models of copiers, multifunctional copiers and printers released in fiscal 2009 meet the Ricoh standards for ozone, dust and VOCs.
	In the LCA-based manufacturing process, we established a global system to manage health risks to local residents.
	Achieved a 74% reduction by reducing the use of solvents, substituting them with substances with a lower enviornmental impact, and recycling wasted solvents.
	Achieved an 85% reduction through substituting with substances with lower environmental impact and the introduction of decontamination equipment.
	The group-wide environmental debt was estimated with the inclusion of companies newly added to the target of consolidated accounting and with consideration given to the removal and new installation cost imposed in and after fiscal 2008.
	The influences caused by asset retirement obligations were identified and analyzed, and checked in the accounting audit.
	Using the system we established in fiscal 2008, we communicated information on the REACH regulation and received the cooperation of our suppliers. We also provided key-person education in the Ricoh Group, with a view to increasing the speed and accuracy of information communication.
	All the Ricoh Group's targeted organizations (99) conducted biodiversity conservation activities.

Our aim is to bring about an "industrial revolution of the environment" through the development of innovative environmental technologies, thereby realizing a low-carbon society.

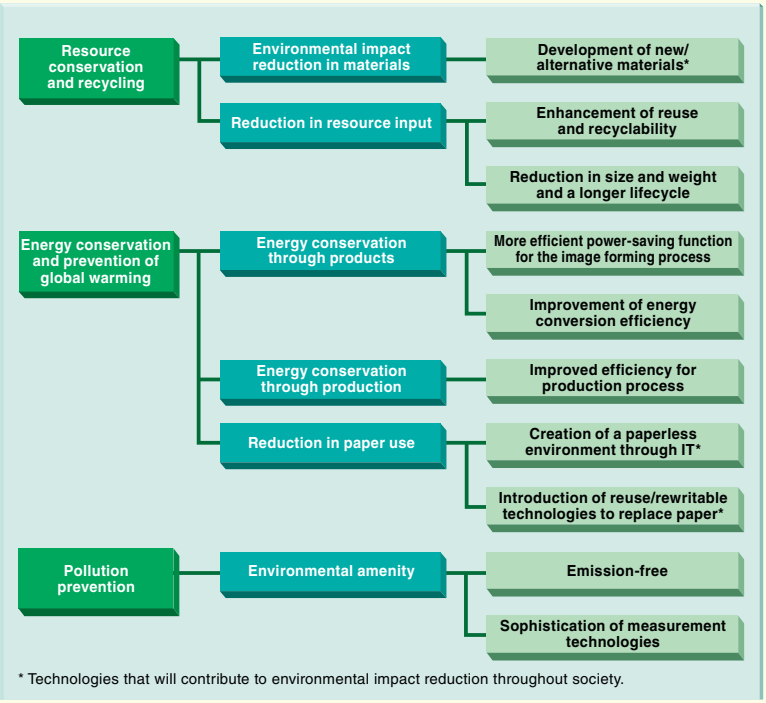
■ Concept of Product Development

The Ricoh Group develops products that—throughout their lifecycles—will keep their environmental impact below the limit at which the global environment becomes unsustainable. First, Eco Balance data on the environmental impact caused by overall business activities are identified and, based on the results, targets for products covered by the action plans are set (Plan). LCA-based designs are then drawn up, and production process technologies are developed to achieve the targets (Do). Results from these designs and process technologies are again reviewed alongside the Eco Balance data (Check) before being reflected in the next targets (Act). In addition to technological development directly related to products, we also work on technological development that will help reduce the environmental impact of society as a whole. We are promoting various activities—such as the development of new/alternative materials, creation of a paperless environment through information technologies, and introduction of reuse/rewritable technologies to replace paper—to further evolve Ricoh's core technologies into environmental technologies that can be applied in a wider variety of areas.

■ Target for Fiscal 2010

◎ Develop environmental technologies that will help reduce the environmental impact of business activities and of society as a whole.

Focused areas for environmental technologies

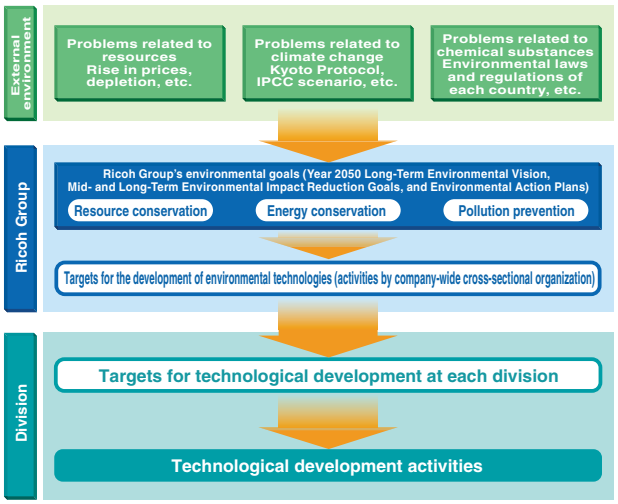


* Technologies that will contribute to environmental impact reduction throughout society.

Acceleration of development of environmental technologies

The development of environmental technologies is one of the most important efforts to realize sustainable environmental management. It is the basis for providing customers with products that are low in environmental impact throughout their lifecycle from the procurement of materials and use by customers to their recycling, as well as for simultaneously realizing both a reduction in environmental impact and the creation of economic value. The Ricoh Group is well aware that existing technologies are not sufficient for creating products that will help resolve the current problems of climate change and resource depletion, meet environmental laws and regulations, and expedite the realization of a low-carbon and resource-recirculating society. Ricoh's development of environmental technologies is based on this recognition. In fiscal 2009, we set targets for each stage of the product lifecycle in terms of technology development according to the Group's 2050 Long-Term/2020 Mid-Term Environmental Impact Reduction Goals and drew up technological strategies to achieve these targets. In fiscal 2010, our focus will be on enhancing the system that facilitates cross-cutting cooperation between different technology areas, aiming at more effective development activities concerning environmental technologies. In addition, looking at the 2020 mid-term goals, we will accelerate efforts to advance our environmental technology development, thereby increasing the potential for further reductions in environmental impact.

Ricoh's approach to the development of environmental technologies



Promotion of LCA-based design

LCA-based design is a process where targets are set to reduce the environmental impact of products throughout their lifecycles, and the PDCA cycle is used to achieve these targets. Ricoh developed the LCA calculation tool in fiscal 2006 to enable designers to carry out LCA-based design in a more efficient and effective manner. This tool is now actively utilized to conduct LCA for products in the process of development based on their specifications, and, in accordance with the results, set environmental impact reduction goals for each product.

Life Cycle Assessment (LCA)

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

Disclosure of information using environmental labels

It is important not only to develop environmentally-friendly products through the use of environmental technologies and LCA-based design, but also to disclose information in an easy-to-understand manner. Ricoh is actively engaged in introducing Type I environmental label certifications so that customers will understand that our products are environmentally friendly. We are also working to disclose our environmental information in accordance with Type III environmental declarations.

* For details on environmental labels, refer to our web site:
http://www.ricoh.com/environment/label/index.html

QREX—the industry's first Eco Leaf label product <Ricoh Elemex Corporation (Japan)>

QREX, a microprocessor-controlled LP gas meter from Ricoh Elemex Corporation (REX), was the first product in the industry to obtain certification under the Eco Leaf environmental label[1] program, when it was certified in July 2009. REX has been working to reduce its environmental impact in earnest since around 2005, primarily by discontinuing the use of lead and hexavalent chromium in its LP gas meter products; making these products lighter, smaller, and recyclable; and making the production area more compact. Leveraging these green features of the product to help raise environmental awareness in the LP gas industry, REX decided to apply for this eco-labeling program. In its pioneering efforts to become the first in the industry to receive certification, the company worked with the member companies of the Environmental Working Group of the Japan Gas Meter Industry Association to establish the necessary Product Category Rules (PCR)[2] criteria for calculating LCA data, and cooperated with relevant internal and external organizations to deal with other issues. The establishment of the PCR and REX's success in acquiring certification has spurred other companies in the industry to apply for or plan to apply for the Eco Leaf label certification. The high environmental performance of QREX is not limited to the product itself. The environmental impact of its packaging has also been lowered, for example, by minimizing the volume of waste raw materials unused in the production process and reducing the packaging box size. In recognition of these features, the packaging was selected as the winner of the WorldStar Sustainable Packaging Award sponsored by the World Packaging Organisation (WPO) in May 2008. REX will continue to contribute to industry-wide activities to build a resource-recirculating society by advancing its own efforts to reduce the overall environmental impact of its products throughout the product lifecycles.

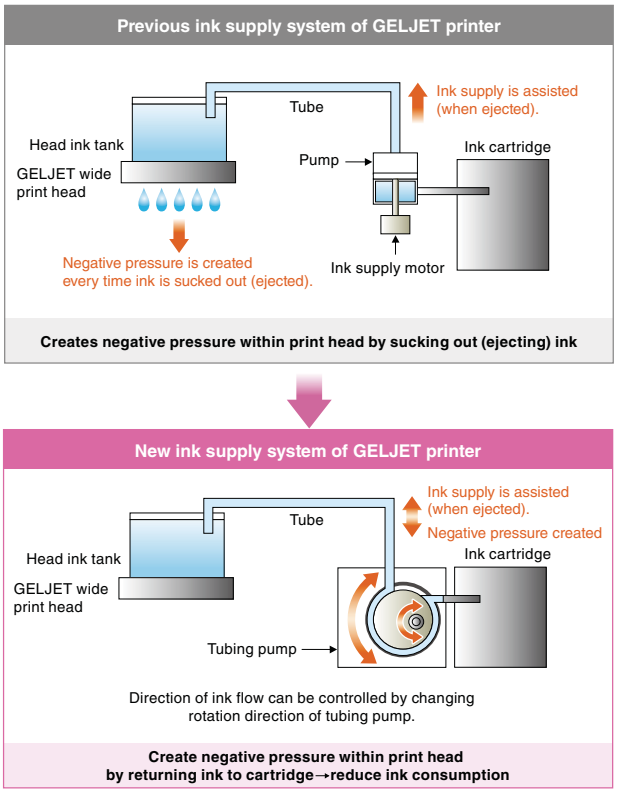
1. A Type III environmental labeling program administered by the Japan Environmental Management Association for Industry (JEMAI). To obtain certification for this label, environmental impact data for the product must be quantitatively assessed using the LCA method and disclosed throughout its product lifecycle from production through use to disposal.
2. Standards that define how LCAs are to be conducted, including the data to be analyzed, for different classes of products, and how the results are to be presented on the product label.

Reducing ink consumption of GELJET printer <Ricoh (Japan)>

Ricoh's GELJET printer features high-viscosity ink, developed to enable high-speed duplex printing on plain paper with high picture quality to support work at offices. Furthermore, to achieve high-volume continuous output, the print head and ink cartridges are separate from each other. To ensure stable printing performance with this layout and using a viscous ink, a state of negative pressure[1] needs to be maintained inside the print head. Previously, to create a constant negative pressure condition within the print head, the GELJET printer was designed to regularly eject ink, even when the machine was not in a printing operation, resulting in the unnecessary consumption of ink. Seeking solutions to this problem caused by the repeated ink ejection pattern, Ricoh developed a new technology to create a constant negative pressure condition within the print head. The key element is a newly developed pump that can convey ink in two directions between the head and the cartridge, as opposed to the conventional one that allows ink to flow only in one direction, from the cartridge to the head. The new dual-direction pump enables the printer to create and maintain a negative pressure status inside the print head by sucking ink from the head towards the cartridge, thus saving ink by eliminating the need for ejection while the printer is not in operation. The new method is also beneficial as it has remarkably improved ink usage efficiency, because less ink is consumed for printing the same volume. This benefit is particularly notable for low print volume users[2], for whom the frequency of the motion for creating negative pressure is relatively high in proportion to print volume. After the first mounting of the innovative pump on the IPSiO GX e3300 printer, released in May 2009, it was employed on the IPSiO GX e5500 series, which was launched in February 2010. Following this recent utilization, the new technology will be mounted on newer models rolled out in the years to come.

1. Refers to a condition of a given area in which gauge pressure is below zero (i.e., negative) compared with the ambient air pressure.
2. Users whose monthly print output ranges approx. from 50 to 100 pages.

Mechanism to create negative pressure within print head



Development of alternative materials using biomass resins

<Ricoh (Japan)>

As part of its efforts to develop alternative materials to realize a low-carbon and resource-recirculating society, Ricoh is working on the development of components and toners for copiers by utilizing biomass resins. Biomass resins have been receiving increasing attention recently as they are recyclable and contribute less to global warming than their petroleum-based counterparts. In 2002, we started development of biomass plastic for application in our copiers, and in 2005, rolled out the industry's first multifunctional digital copier equipped with biomass components (50% biomass content[1]) in its main unit. As collection and recycling of toners after printing is rather difficult, it is important to reduce the environmental impact of their components—currently, petroleum-based resins constitute the primary components. Ricoh has worked on the commercialization of biomass toners since[2] 2006, releasing them into market in November 2009.

imagio MP 6001GP

Ricoh plans to continue technical development toward improving biomass content and expanding the use of biomass resins. At the same time, Ricoh plans to search for possibilities toward commercialization of technology for effectively using limited resources in other materials as well by reducing use of resources that are highly likely to dry up and focusing on alternative resources.

1. Percentage of biomass resins included in components
2. Designed to be used for Ricoh products

History of Ricoh's biomass resin material development

2002	Began developing biomass plastic components as materials for copiers
2005	Became the industry's first to employ plastic with 50% biomass content in the main component of a multifunctional digital copier
2006	Began efforts toward commercialization of biomass toners
October 2008	Released the imagio MP C2200 model, which employs a newly developed plastic component with roughly 70% biomass content
November 2009	Released the imagio MP 6001GP, equipped with "for E Toner," and became the world's first manufacturer to employ a biomass toner (25% biomass content)

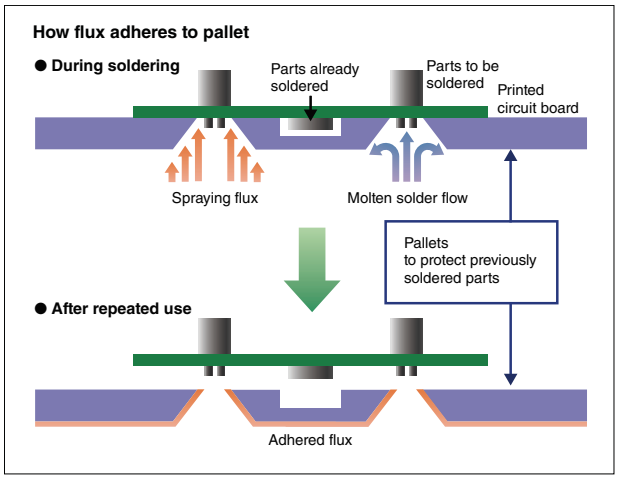
Development of Environmental Technologies at Business Sites

Dry washing technology for reduced environmental impact of production processes

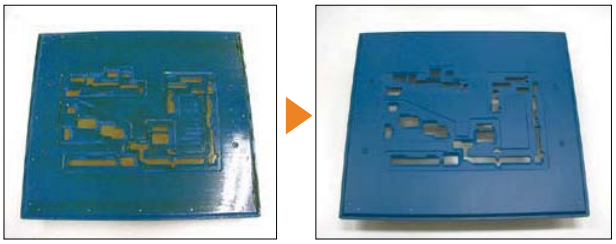
Recycling can never be labeled effective if it generates significant environmental impact in its process. Based on this recognition, Ricoh has been making solid progress in developing resource-recirculating production systems. The development of original dry washing technology is among the latest examples. To recycle parts stained with toner, we previously employed an ultrasonic cleaning process that required the use of water, which inevitably involved wastewater treatment and energy consumption to dry the washed parts. With the newly developed technology, which cleans to a quality as high as that of ultrasonic cleaning processes, toner stains are scraped off parts by blasting them with tiny sheets of film, rather than water, at high speed. This new technology has been in practical use since fiscal 2007, mainly in the organic photoconductor unit cartridge recycling process both in Japan and overseas, and it has led to considerably less operation time and less energy use than wastewater treatment and drying processes. In fiscal 2009, we succeeded in applying this dry washing technology for the removal of adherents on the mounting of electronic components.

In the automated soldering process for the production of semiconductor circuit boards, jigs called pallets are used to protect already soldered parts from heat. In this process, in order to remove oxidized coating from the joint surface, flux is sprayed onto the spots where parts are to be soldered. As the pallets are used repeatedly, flux residue will accumulate and become fixed on the pallets over time. This needs to be periodically removed. As flux removal with the use of organic solvent requires the treatment of liquid waste and burdensome manual labor, a new technology that could reduce the associated workload, environmental impact, and operational costs had been eagerly awaited. Application of the dry washing technology to pallet cleansing has resulted in: shortening the time needed from 120 minutes to 2 minutes; ending the need for treatment of liquid waste; and reducing CO_2 emissions by an estimated 50 to 90%. In fiscal 2009, the technology was introduced at the Ricoh Hatano Plant and at Shanghai Ricoh Office Equipment Co., Ltd. It is hoped this technology, which serves to create a resource-recirculating society, will be applied to a wide range of areas in the future. Ricoh will continue to advance this technology in anticipation of it being adopted by other companies and industries.

* "Ricoh technology: a special round-table talk by the developers of the dry washing technology" is available at: http://www.ricoh.com/technology/voice/f_runner/fr08/



Pallets before/after dry washing



Pallet with flux adhering

Pallet after flux washed away

Development of user-friendly and energy-saving technologies

■ Concept

Products that are not easy to use will not be chosen by customers, even if their energy-saving performance is solid. Such products can neither contribute to energy conservation nor help prevent global warming. Ricoh is further developing its unique energy-saving QSU (Quick Start-Up) technology*, which enables users to make copies as soon as they need to. We are also expanding the product lineup of QSU-equipped machines with a view to reducing recovery time from energy-saving mode to less than 10 seconds for all our models in the future. Meanwhile, reducing unnecessary paper consumption (indirect energy saving) is important since paper production consumes a lot of energy. Ricoh helps decrease the environmental impact caused by customers' paper consumption by offering highly productive duplex copying functions, digitization, and by promoting sales of recycled paper.

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

■ Target for Fiscal 2010

◎ **Achieve Ricoh's energy-saving goals.**

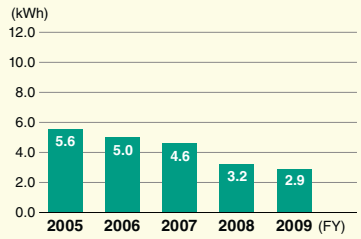
■ Review of Fiscal 2009

In the field of high-speed multifunctional color copiers, we launched the imagio MP C7501/ C6001 series equipped with our original energy-saving Color QSU technology to offer both user-friendliness and upgraded energy conservation features. The new models achieved Typical Electricity Consumption (TEC)[1] of 8.42 kWh[2] by reducing both recovery time from energy-saving (sleep) mode and electricity consumption, as well as through quicker switch to energy-saving mode after operation. In addition, sales of copiers using QSU technology with a recovery time of less than 10 seconds from energy-saving mode are steadily increasing,

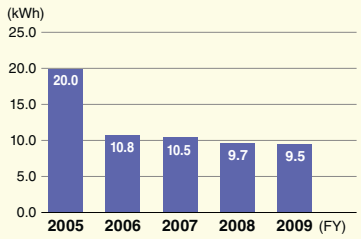
<Japan>

Changes in energy consumption

❶ Monochrome copiers and multifunctional copiers



❷ Color copiers and multifunctional copiers



◎ Energy conservation values are calculated as follows:
∑(<Energy consumption when recovery time is 10 seconds (kWh) [1]> × Annual number of units marketed)/∑Annual number of units marketed

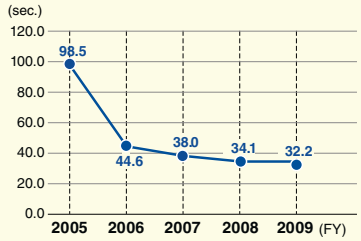
1. Energy consumption when recovery time is 10 seconds: Based on TEC measured for models with a 10-second recovery time from energy-saving mode in accordance with the method defined by the International ENERGY STAR Program. (Electricity consumption in standby mode was measured for models with a recovery time of more than 10 seconds.)

* Graphs ❶ and ❷ were compiled based on the number of units marketed in Japan.

<Global>

Changes in recovery time from energy-saving mode

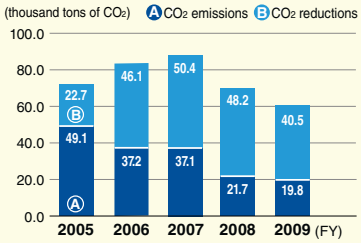
❸ Color copiers and multifunctional copiers



◎ Energy conservation values are calculated as follows:
∑(<Recovery time from sleep mode (sec.)> × Annual number of units marketed)/∑Annual number of units marketed

Effect of QSU technology

❹ Reduction in CO_2 emissions through the use of QSU technology



* A + B : CO_2 emissions generated if there had been no QSU-equipped models
A : Actual CO_2 emissions
B : CO_2 emissions reductions realized by the QSU-equipped models

thus reducing CO_2 emissions by approximately 40,500 tons a year (see graph ❹).

1. The measuring procedure is defined by the international ENERGY STAR Program.
2. Indicates the value for imagio MP C7501SP. Values for other models: imagio MP C7501: 15.79 kWh; imagio MP C6001SP: 6.78 kWh; imagio MP C6001: 14.94 kWh.

■ Future Activities

We will further improve QSU technology, so that more customers will use energy-saving mode, and pursue user-friendliness (shorter recovery time from energy-saving mode) and energy-saving for color copiers.

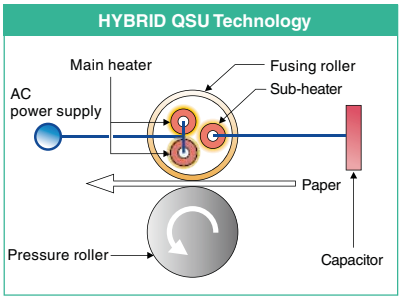
Evolution of energy-saving technology QSU

QSU (Quick Start-up), Ricoh's original energy saving technology, was developed to achieve effective energy conservation for copiers. It enables quick recovery from the energy-saving mode, allowing users to make copies whenever they need to. According to a customer survey, the longer it takes to recover from energy-saving mode, the less the energy-saving mode is used. Ricoh focused its efforts on developing QSU technology in a way that satisfies both user-friendliness and energy conservation so that our customers will use the energy-saving mode more often. In 2001, we launched the imagio Neo 350 series, the first multifunctional monochrome copiers equipped with QSU, and received the Minister of Economy, Trade and Industry Prize, the highest prize of the Energy Conservation Grand Prize presented by the Ministry. Following that, we introduced HYBRID QSU, an integration of traditional QSU technology and capacitors (electric storage devices), in high-speed multifunctional monochrome digital copiers, and have since reinforced the lineup of QSU-equipped products[1]. In fiscal 2006, Ricoh developed Color QSU technology, which adopts the IH[2] fusing system and successfully reduces recovery time from the energy-saving mode for multifunctional color copiers, which had been a difficult challenge. The imagio MP C4000 released in June 2008 features Color QSU technology and new color PxP toner that facilitate a recovery time from the sleep mode[3] of less than 15 seconds. This new color PxP toner has been introduced in a growing number of our copiers, including the imagio MP C7500SP/C6000SP, which was launched in December 2007. These multifunctional digital full-color copiers, whose energy consumption is almost 50% lower than conventional counterparts, received the Chairman Prize of (ECCJ) under the Energy Conservation Grand Prize in fiscal 2008. Such substantial improvement of energy efficiency is made possible by a combination of the new color PxP toner and higher thermal conductivity of the fusion system. In addition, we also developed energy-saving printers that use our GELJET technology, including the IPSiO GX e2600 series launched in December 2009, which boasts a very low power requirement: average power consumption in operation of less than 36 watts, equivalent to the energy consumption of a fluorescent light; and power consumption in energy-saving mode of less than 1.4 watts.

1. Capacitors are incorporated only in the 100V machines marketed in Japan.
2. IH stands for "Induction Heating," a technology that heats metal instantly with the magnetic force generated by an electric current passing through a coil. This technology is also widely incorporated in electric rice-cookers and stoves.
3. A type of energy-saving mode See Page 26.

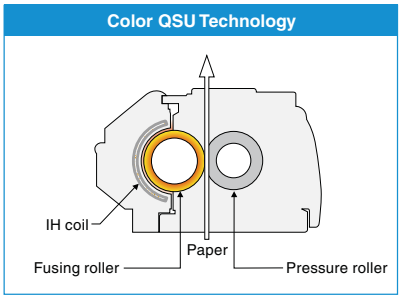
● HYBRID QSU Technology

Traditional QSU technology is combined with a capacitor (electric storage device) to store electricity while in standby mode so that it can be used for start-up and printing operations. This technology is adopted in high-speed type multifunctional copiers.



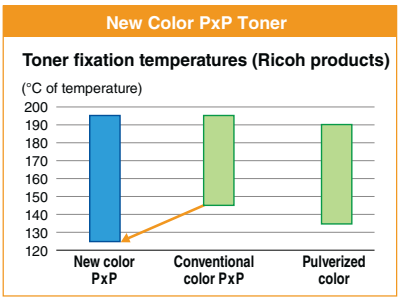
● Color QSU Technology

This technology is based on IH (Induction Heating), which uses magnetic force to produce heat, and has been further improved in such a way to cause the fusing roller itself to generate heat. With increased heat efficiency, this technology shortens warm-up time, thus enabling color copiers to both be user-friendly and energy-saving.



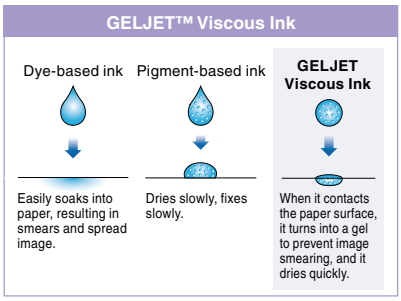
● New Color PxP Toner

Using newly developed polyester-resin particles of a smaller and uniform size, this toner is designed to fuse at a temperature 20 degrees lower than conventional polymerized toners. This new toner realizes a shortened warm-up time, faster continuous output, and less energy consumption when in use.



● GELJET Viscous Ink

GELJET Viscous Ink is a pigment-based ink with high viscosity and high penetration, which enables high-speed duplex printing on plain paper with a picture quality as high as that of laser printers. Its low energy consumption also allows users to save running costs.



Efforts to realize a more user-friendly energy-saving mode and a recovery time of 10 seconds

Our assessment of the impact of our products on global warming shows that, while there are emissions of greenhouse gases (GHG) directly from Ricoh Group operations such as production, transportation, marketing, and maintenance, a significant level of CO_2 emissions is also generated while the products are used at customer sites[1]. The energy-saving mode is automatically activated to minimize power consumption when products are left in standby mode for a certain period of time, and thus it contributes to energy conservation for customers who use Ricoh copiers. To maximize energy-saving effects, it is necessary to set the time of the shift to a higher energy-saving mode to be as short as possible (see table on next page). According to a customer survey, many customers feel that the waiting time is too long when the recovery time from the energy-saving mode exceeds 10 seconds. Therefore, to encourage customers to use the energy-saving mode without the stress of waiting, Ricoh is committed to technological development aimed at reducing the recovery time from the energy-saving mode to less than 10 seconds. For monochrome multifunctional copiers,

we achieved a recovery time from the sleep mode[2] of less than 10 seconds[3] when we released the imagio Neo 350 in February 2001, and we have since introduced this feature to many other models. In terms of color multifunctional copiers, imagio MP C4000 has achieved the recovery time from the sleep mode to less than 15 seconds[3]. For models whose recovery time from the sleep mode still exceeds 10 seconds, the "preheating level 2" button is provided to realize a recovery time of 10 seconds while allowing customers to save energy—although not as much as when in sleep mode—to the maximum extent possible. In this way, Ricoh is offering its customers a way to promote energy conservation without sacrificing user-friendliness.

1. See page 51.

2. A type of energy-saving mode. See the table on right.
3. When used at a room temperature of 20°C. This figure may vary depending on the conditions and history of use.

Energy-saving mode levels and their effects

Setting mode	Displayed term	Description	Energy-saving effects
Preheating	Panel Off	A ready-to-use status, but only with the control panel display cleared.	Small
Low power consumption	Energy Saver	A status where the temperature of the fusing heater, which consumes most electricity, is lowered to save energy; takes longer to recover than from the preheating mode (only for some models).	Medium
Sleep	Auto Off	Power to the fusing heater is turned off to save most energy. If the machine cools down to room temperature, the recovery time may take as long as the warm-up time.	Large

* See the manual for each model for specific energy consumption information and other data related to each setting in the energy-saving mode.

Preventing Global Warming through Reduced Paper Consumption

RECO-View RF Tag Sheet—capable of displaying data on rewritable RF Tags

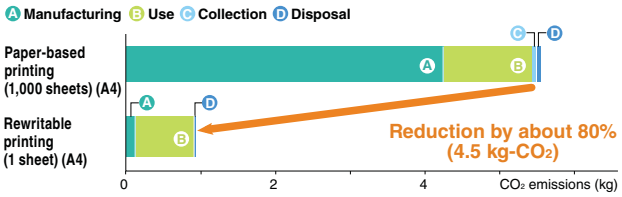
<Ricoh (Japan)>

In fiscal 2003, Ricoh developed the RECO-View RF Tag Sheet by combining RF tags with Ricoh's own rewritable technology, making the RECO-View RF Tag Sheet capable of rewriting and displaying data written on cards or sheets. This sheet displays digital data recorded on a tag, and the display changes as the tag is rewritten. A sheet is capable of being rewritten approximately 1,000 times*, making it possible to cut CO_2 emissions by 80% across its lifecycle compared to paper-based printing. This tool also helps prevent human error, as operators are able to visually check information on the management of operation processes written on RF tags, and it is currently utilized in a wide variety of areas, including logistics, medical care, and office work.

* This number may vary, depending on the condition of use.
* Visit http://www.reco-view.com for further details of the RECO-View RF Tag Sheet.

See page 39 for introduction of the tag sheet to a Ricoh plant.

CO_2 emissions during 1,000 printing operations



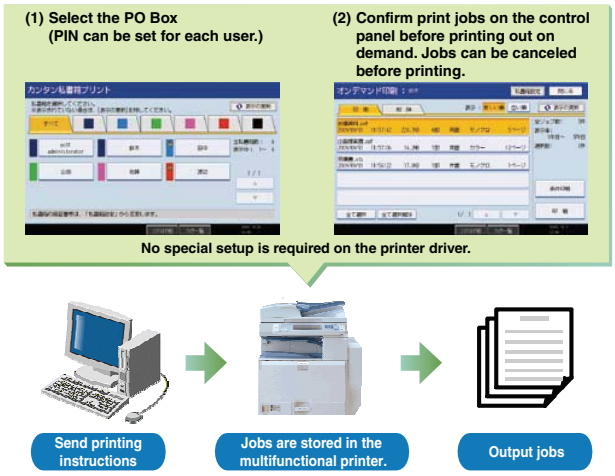
[Data coverage] ■ Manufacturing: materials and manufacturing processes ■ Use: RW printer (calculation based on electricity consumption)/laser printer (calculation based on electricity consumption and toners) ■ Collection: 100-km of transport by a 4-ton truck from the usage site ■ Disposal: waste disposal (with thermal recovery)/waste disposal (w/o thermal recovery)/landfill/collection of used paper (for paper-based only)
[Source] ■ Paper: JLCA Database by Japan Environmental Management Association for Industry (JEMAI) ■ Rewritable sheet: on materials, JLCA Database by Japan Environmental Management Association for Industry (JEMAI), Materials Database (4000ss) by the National Institute for Material Science (NIMS); on manufacturing process, Electricity & gas, data from the Japanese Ministry of the Environment ■ Laser printer: Data on IPSiO NX810 (publicly available from the JEMAI Ecoleaf program) ■ Collection and disposal: Japan Tappi Journal 55(6) 838- 852(2001)

imagio Easy PO Box Printing

<Ricoh (Japan)>

In October 2009, Ricoh released the "imagio Easy PO Box Printing Type A," which prevents the user picking up someone else's printouts by mistake or forgetting printouts while generally reducing wasteful printing in the office. This application automatically stores each print job in the "PO box" of the individual user, enabling the user to confirm print jobs on the multifunctional printer's control panel to print out on demand. Print jobs can be canceled before printing if the wrong instructions have been given—such as more copies than intended, color copies instead of black-and-white, single-sided printing instead of double-sided printing, or other incorrect settings. It also offers security in that documents will not be mistakenly picked up by another user if the printouts are left uncollected for some time after the instructions were given. This gives users a sense of security, allowing them to feel safe about printing confidential documents without the risk of top-secret contents being revealed to others. Moreover, because there is no need for user registration or setup on the PC, this application is user friendly, can be installed at low cost, and requires little time for management or training. These features enable immediate use.

A similar system was installed at Ricoh's Head Office (where 2,200 employees work). Calculations show that the system has helped prevent around 2.8 million pages being printed in error, which constitute roughly 24% of all printouts. This has greatly helped reduce both costs and environmental impact.



Global promotion of use of recycled resources based on the "Comet Circle"

■ Concept

Based on the concept of the Comet Circle that puts "Priority on Inner Loop Recycling," the Ricoh Group is working on recycling materials with less environmental impact and higher economic efficiency by finely prioritizing reuse and recycling processes. As resource depletion becomes an ever pressing issue, the development, design, procurement, production, and collection/recycling divisions at Ricoh are cooperating in such activities as "reduction in size/weight of products and a longer product lifecycle," "enhancement of reuse and recyclability," "promotion of closedloop material recycling," "increasing production and sales of recycled copiers" and "reduction of packaging materials" as part of efforts to pursue effective utilization of resources and minimize the use of non-recycled, virgin resources in production. We are also striving to invent alternative materials, such as biomass resin, as a measure against the risk of resource depletion, and develop recycling process technologies with lower environmental impact.

■ Targets for Fiscal 2010

◎ Increase the quantity of reused parts obtained from used products to 1,910 tons by fiscal 2010. (Japan)

◎ Increase the quantity of reused parts obtained from used products to 6,000 tons by fiscal 2010. (Outside Japan)

◎ Accomplish the fiscal 2010 target quantity of recycled plastics used. (750 tons in Japan)

◎ Increase the quantity of resources collected from used products and recirculated (quantity of reused resources + quantity of recycled resources) to 16,000 tons by fiscal 2010. (Outside Japan)

◎ Commercialize biomass toners.

■ Review of Fiscal 2009

The quantity of reused parts obtained from used products was 1,703 tons in Japan (Graph ❶), down from the level of the previous fiscal year, which is attributable to an overall decline in sales due to the economic downturn continuing from 2008. Meanwhile, the figure for overseas sites grew to 6,934 tons, exceeding the target for fiscal 2010 (Graph ❷). The quantity of recycled plastics used in Japan increased to 960 tons, while the quantity of resources collected from used products and recirculated overseas increased to 24,712 tons, both of which considerably exceeded the respective target quantity for fiscal 2010 (Graphs ❸ and ❹). The quantity of used toner cartridges collected saw a decline in terms of weight in spite of an increase in the number of collected copiers, which is due to the weight reduction in the cartridges used in each copier (Table ❺). Another feature of resource-conservation effort made in this period was the November 2009 release of the imagio MP 6001GP, a multifunctional digital copier that uses biomass toner.

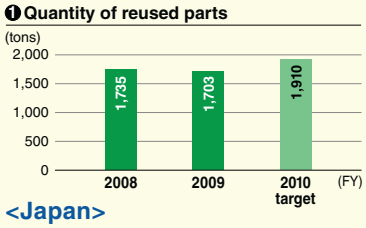
See page 23.

■ Future Activities

We will continue to effectively use recovered resources by increasing production and sales of recycled copiers as well as through extended use of recycled parts and materials, and thus provide our customers with products with less environmental impact and higher economic efficiency. For this purpose, it is important to improve resource recycling technologies, and increase the collection rate and collection quality of used products. By effectively utilizing collected resources while minimizing the use of virgin natural resources, Ricoh will contribute to creating a sustainable society.

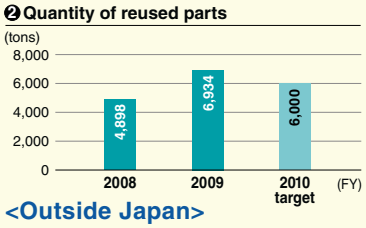
<Japan>

❶ Quantity of reused parts



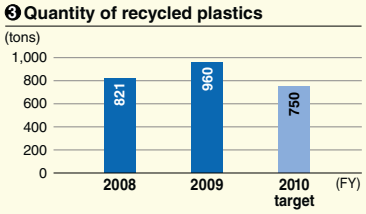
<Outside Japan>

❷ Quantity of reused parts



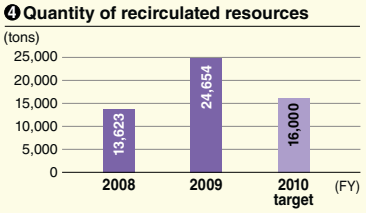
<Japan>

❸ Quantity of recycled plastics



<Outside Japan>

❹ Quantity of recirculated resources



<Global>

❺ Collection results and recycling rates for copiers and toner cartridges

	Amount of used products collected			Recycling rate
	Fiscal 2007	Fiscal 2008	Fiscal 2009	Fiscal 2009
Copiers	319,643 units	264,899 units*	305,365 units	98.6%
Toner cartridges	993.5 tons	982.6 tons	951.8 tons	99.5%

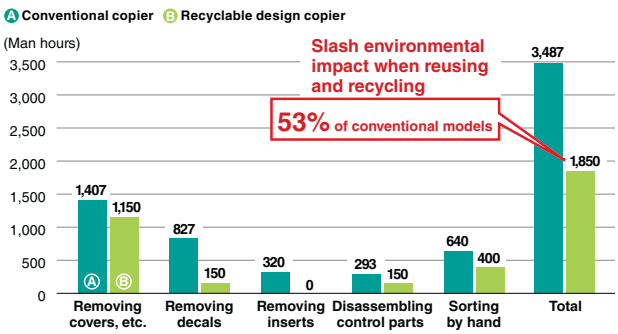
* The number of used copiers collected and the recycling rates in fiscal 2008 shown above do not include data for the Americas due to a system failure there.

Recyclable design

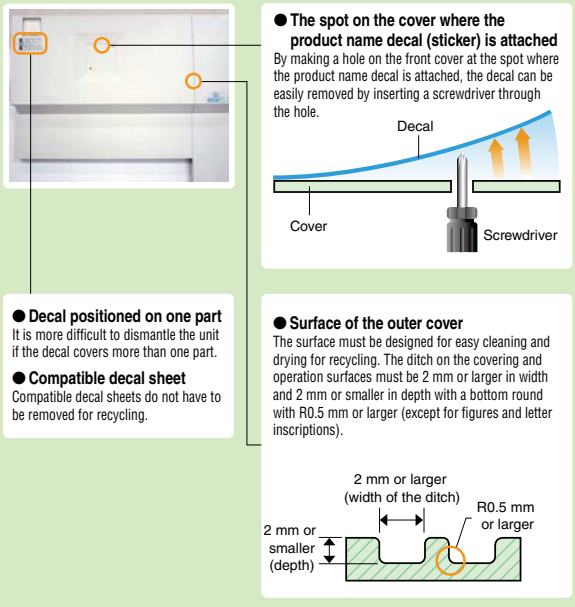
<Ricoh (Japan)>

Recyclable design is an essential approach to promoting resource conservation and product recycling. To introduce recyclable design, an organization that is now known as the Recycling Technology Workshop was established in 1993. The workshop formulated the company's first recyclable design policy based on the Comet Circle, and has built up know-how in various areas, such as grading of material, strength design considering future reuse as well as the reduction of packaging materials, reuse of high value-added parts, recycling of high-quality materials, and improvement in the ease of disassembling and sorting. After designing copiers and printers, designers carry out recyclable design self-assessments to make necessary improvements, and in this way, the consideration of designers to recycling has already become a part of their core design process. In addition, we hold a recyclable design seminar twice a year to discuss how to deal with revised rules and new laws and regulations. The participants include designers of not only Ricoh's design division but also of its Group companies, and in fiscal 2009, seminars were held in February and August, attracting about 60 attendees in total.

Effects of recyclable design



Recyclable design front cover

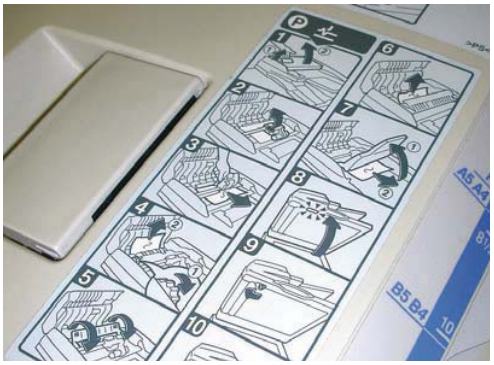


Providing free access to patents in order to boost the efficiency of home appliance recycling

<Ricoh (Japan)>

As part of its measures to manufacture recyclable design products, Ricoh developed compatible labels which do not compromise the quality and purity of recycled plastics even when parts are dissolved and reused with the labels still on. We have been using these labels as decal sheets for products such as multifunction copiers and printers, as well as fax machines, since 1994.

In order to promote the use of compatible labels for other home appliances, Ricoh signed a contract with the Association for Electronic Home Appliances in October 2009 to allow the association and its member firms free access to the relevant patents Ricoh owns. By having these compatible labels used in many home appliances, and by displaying the materials used in the labels, home appliance recycling plants can now eliminate the conventional process of removing product labels manually or punching them out by machine. This boosts the efficiency of the recycling process, and enables the recycling of high-quality materials. Ricoh expects that highly efficient plastic recycling using these the compatible labels will take root in Japan, and will contribute to the building of a recirculating society.



Reducing waste-processing time and cost by using compatible labels

The deployment of compatible labels has enabled us to eliminate the roughly 14-minute process of removing labels when recycling copiers (in the case of widely used models) and the need to separately dispose of the labels, thereby boosting work efficiency at the recycling stage and reducing processing costs. Due to these efforts, we first introduced products equipped with parts composed of more than 20% recycled plastic content in 1999. Building upon this achievement, we have since continued increasing the use of recycled plastics.

Improvement of recycling quality with recycling information system

<Ricoh Group (Japan)>

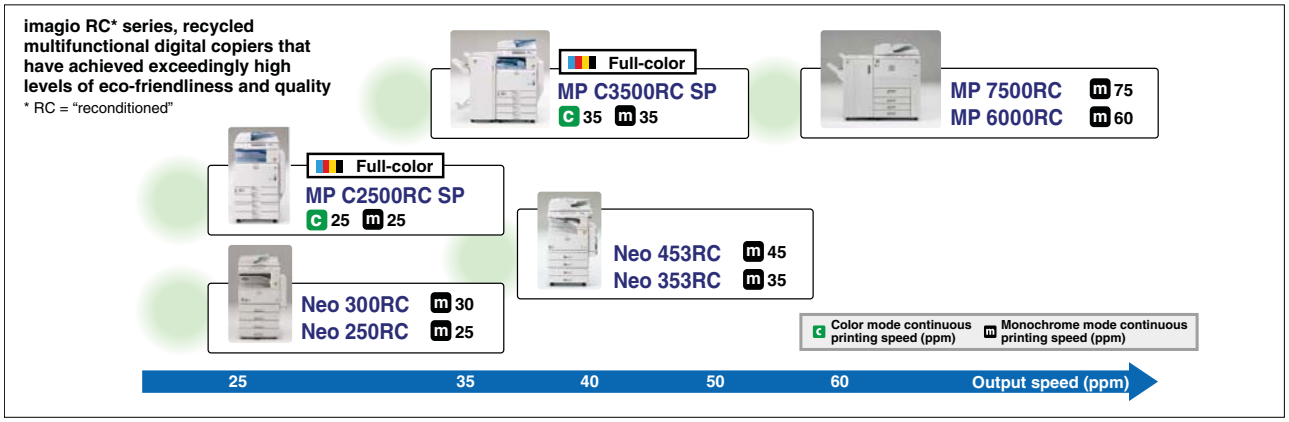
In addition to product information from the procurement of materials to sales, the Ricoh Group also controls information on each of office equipment unit after sales using the recycling information system. Ricoh's recycling information system is an original traceability system designed specifically for collection and recycling purposes, whereby each unit collected is bar-coded to trace its status throughout the process. The conditions of copiers used by customers are also recorded in the monitoring database within the system. The system allows efficient production and quality improvement of recycled products due to its ability to manage on an individual unit basis, enabling identification of which collected items are currently going through which process. Used copiers are first collected by Ricoh's local sales subsidiaries/dealers or our Green Centers located in 11 cities across Japan, and sorted by model and quality level at Aggregation Centers to determine whether each collected machine will be recycled or dismantled for parts reuse or material recycling. Only products that have passed rigorous inspections are finally sent to recovery centers. At recovery centers, used products are examined again to note their condition (quality, deterioration, etc.), and then disassembled, cleaned, and washed. Data stored in the hard disc is also erased. In the assembling process, deteriorated parts and supplies are replaced with new ones. Assembled products then go through paper feeding tests, fine-tuning, and a finishing process before being shipped to ensure they meet the same standards as those for regular products. The finished recycled products are provided with the same quality warranty as that for new products.

Promotion of recycled copier business

<Ricoh Group (Global)>

Ricoh copiers are offered mainly for lease in Japan, and every leased copier is placed under our management. This system facilitates the collection of used machines, and allows us to effectively utilize resources. The know-how accumulated through this practice is also made available in countries where the business model differs from that of Japan to help develop their recycling system. However, the collection of used machines requires energy- and cost-consuming transportation, and therefore, if collected products are not effectively utilized, collection will only create substantial losses. Ricoh has adopted resource conservation and recycling as one of the pillars of its environmental conservation activities since the early 1990s, and has been working on the recycling of collected copiers, laser printers, toner cartridges, and supplies. More than 200,000 units of our used products are collected each year, and fully recycled* or reused. Furthermore, in order to continuously promote recycling, it is also necessary to create economic value from recycling. Ricoh therefore has been engaged in recycling copiers in Japan by collecting used machines from the market and relaunching them back into the market. Since the release of its first recycled copier in 1997, Ricoh has expanded its lineup more actively than any other company to offer a wide variety of recycled machines with a copying productivity ranging—as of fiscal 2009—from 25 to 75 pages per minute. In 2009, Ricoh also released its first recycled full-color copier, the imagio MP C3500RC/C2500RC series. With this new series launched in the market, Ricoh's recycled copiers are now capable of meeting a variety of customer needs with a wide selection of monochrome and color models.

* The recycling rate of copiers is more than 99.5%.



Release of recycled digital full-color copiers, imagio MP C3500RC/C2500RC series

<Ricoh (Japan)>

In September 2009, Ricoh released the imagio MP C3500RC/C2500RC series, Ricoh's first recycled digital full-color copiers. The average rate of used parts in the production of the series stands at 80% in weight, and we have reduced CO_2 emissions during manufacturing by roughly 93% from the original model (produced as new units). The CO_2 emissions reduction over the total lifecycle of imagio MP C3500RC and imagio MP C2500RC is estimated to be roughly 27% and 20%*, respectively.

* The environmental impact was calculated per year over a five-year lifecycle (original model); the lifecycle was 10 years for the recycled model (five years each for the original and recycled models).

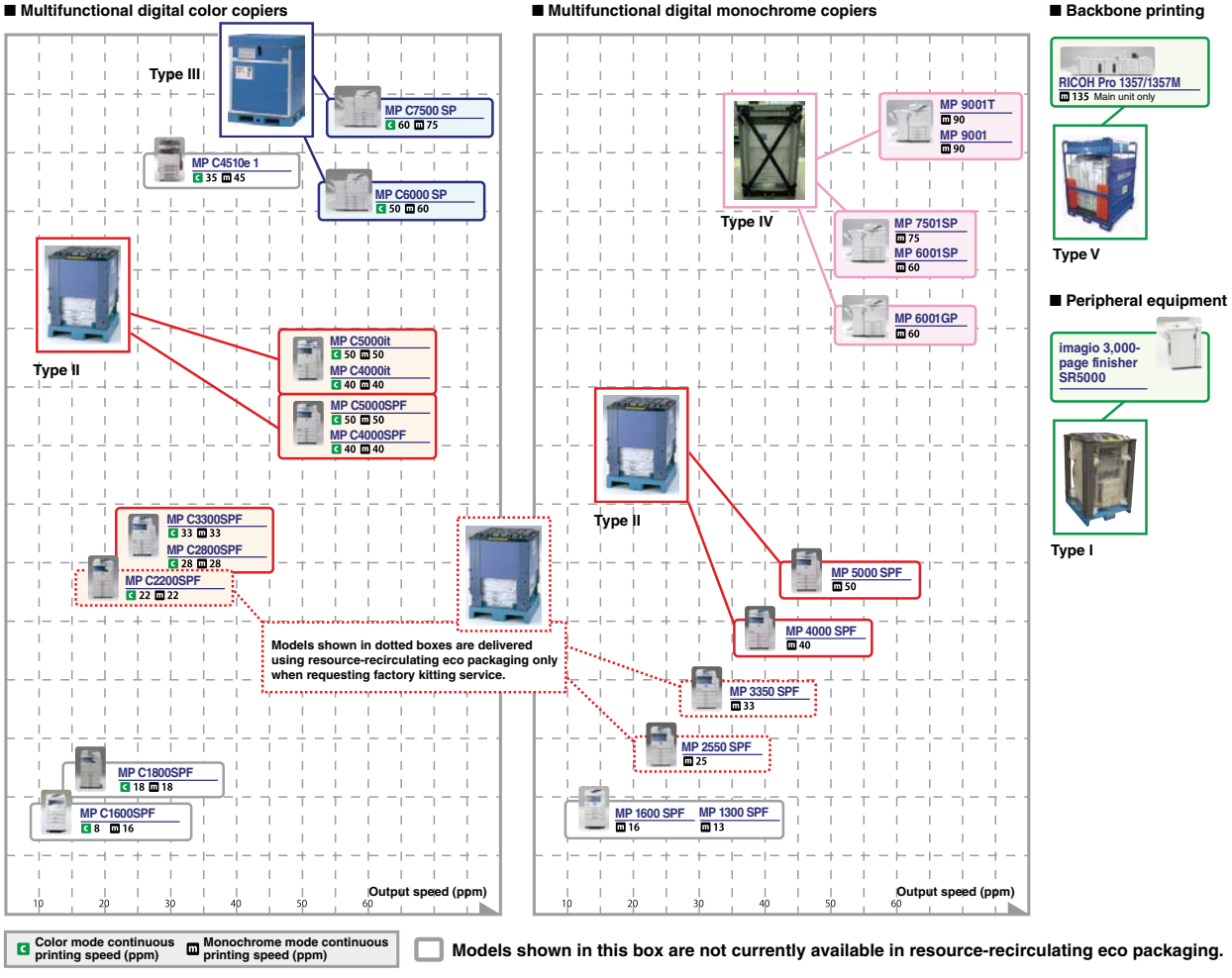
imagio MP C3500RC

Promoting "resource-recirculating eco packaging"

<Ricoh Group (Japan)>

Ricoh has long been working to reduce the use of packaging materials. In 1994, we started "eco packaging" which uses less cardboard. In 2001, we introduced further advanced "resource-recirculating eco packaging" materials to the market. As of fiscal 2009, about 60% of our copiers—or 46 models out of a total of 60—shipped within Japan have been packaged in these resin-based materials that can be used repeatedly. In addition, we are engaged in activities in which we deliver products simply wrapped in damage-protection film direct from the factory to customers. Through these efforts, we are reducing consumption of packaging materials by some 990 tons each year, equivalent to about 1,300 tons of CO_2 emissions. From fiscal 2009, resource-recirculating eco packaging has been used not only for copiers but also for related peripheral (optional) equipment. An example is finishers produced by Ricoh Elemex Corporation, for which packaging materials previously used for earlier models are reemployed.

List of products shipped with resource-recirculating eco packaging



We offer products that are kind to the environment and people by reducing and strictly managing environmentally-sensitive substances.

■ Concept

Aiming to reduce the impact on the global environment and enhance end-user comfort and safety levels, the Ricoh Group is tackling important issues by establishing a strict management system for environmentally-sensitive substances contained in its products, reducing ozone, dust, and volatile organic compounds (VOCs) emitted when products are used, and ensuring that its supplies are safe. Environmentally-sensitive substances contained in products will affect the environment when the products come to the end of their lifecycle and are improperly disposed of. An ecobalance assessment shows that reducing the use of these substances will ultimately lessen the environmental impact a product has during its lifecycle and reduce recycling costs to a great extent. The Ricoh Group is making efforts to reduce environmentally-sensitive substances and create a reliable management system that covers the entire manufacturing flow, including suppliers.

■ Targets for Fiscal 2010

◎ Observe Ricoh standards that cover such substances as ozone, dust, and VOCs.

◎ Strengthen the system for management and communication to comply with the REACH Regulation.

■ Review of Fiscal 2009

Concerning emissions of environmentally sensitive substances generated by products, Ricoh was able to quickly satisfy the Blue Angel requirements, which came into force in January 2007. All the 17 series' copiers, multifunctional copiers, and printers launched in fiscal 2009 meet Ricoh standards for ozone, dust, and VOCs.

■ Future Activities

We will continue our efforts to further reduce the use of environmentally sensitive substances in products.

<Global>

● **Achievement of standards for environmentally-sensitive chemical substances**

	Ricoh standards (mg/h)[1] (Blue Angel requirements enforced in January 2007)		Models that achieved the standards[2]
	Color	Monochrome	
Ozone	3.0	1.5	17
Dust	4.0	4.0	
Styrene	1.8	1.0	
Benzene	< 0.05	< 0.05	
TVOC	18	10	

1. Ricoh standards also meet the Blue Angel requirements.
2. Figures indicate the number of product series, including copiers, multifunctional copiers, and printers, launched in fiscal 2009 that achieved these standards.

Controlling the use of environmentally-sensitive substances

<Ricoh Group (Global)>

Ricoh set original standards for environmentally sensitive substances that could be used in its products in 1993 as an indication of its determination to reduce these substances. Since then, the company has regularly reviewed the standards to incorporate the latest regulations and scientific knowledge into them, and has controlled chemical substances accordingly. In addition, all the divisions engaged in production (design, procurement, manufacturing) have worked together to improve the chemical substance control system. By the end of March 2006, a chemical substance management system (CMS)[1] for suppliers was created on a global basis. At the same time, the chemical substance control system within the Ricoh Group was strengthened, completing the management system for chemical substances contained in products within Japan. We completed a system for use outside Japan in July 2006.

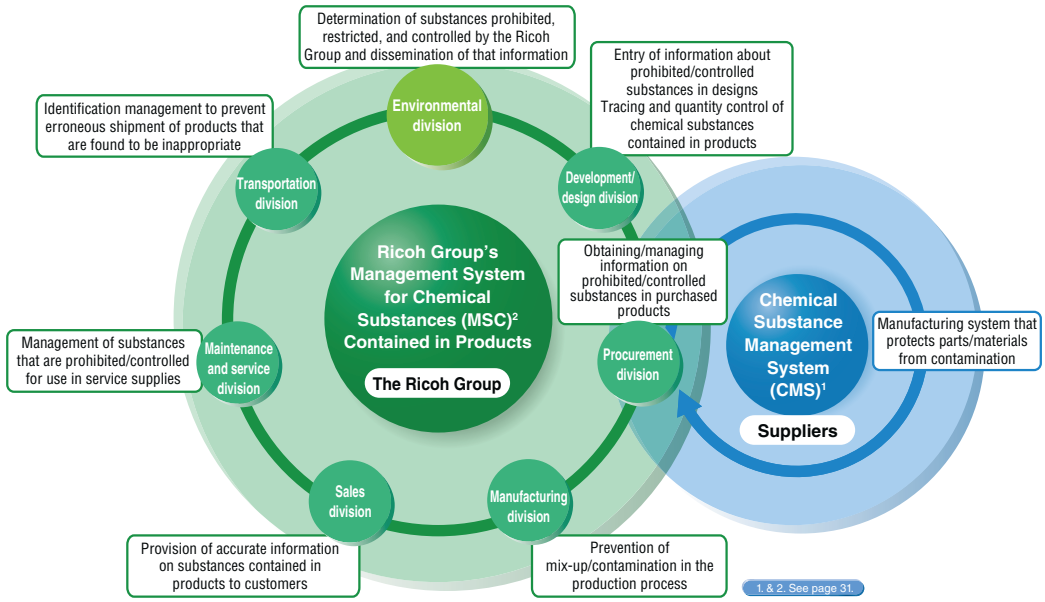
Ricoh is currently working on upgrading the management system for chemical substances (MSC)[2] contained in products by establishing a "first response flow" in case any harmful chemical substances should find their way into products. The MSC is designed to prevent the expansion of pollution (shipment of parts or products) and the recurrence of such an accident. In addition, in fiscal 2007 Ricoh also began—as part of its risk management—to review the list of chemical substances controlled by the Group to tighten the restrictions on and control of the use of chemical substances that can potentially cause harm to the human body and the environment, and expanded the list in fiscal 2008. To comply with the REACH Regulation[3], we have been working since fiscal 2007 on the establishment of a communication system to ensure that chemical substance information is communicated to every corner of the supply chain.

In fiscal 2009, we also started to operate a quantity control system that keeps track of which chemical substances controlled by Ricoh are contained in which part of our equipment in what quantities. With this quantity control system in place, we are now well-positioned to take prompt action in the event of permission to use currently approved chemical substances being withdrawn due to regulatory change.

1. A manufacturing system to prevent the contamination of parts/materials by environmentally sensitive substances; the Ricoh Group supports suppliers' CMS efforts by providing relevant information and verifying their CMS.
2. A system to manage the substance groups whose use in equipment is prohibited, restricted, or controlled by the Ricoh Group, as well as to trace and control the quantities of other chemical substances contained in products.

3. See page 32.

Framework for chemical substance control (MSC and CMS)



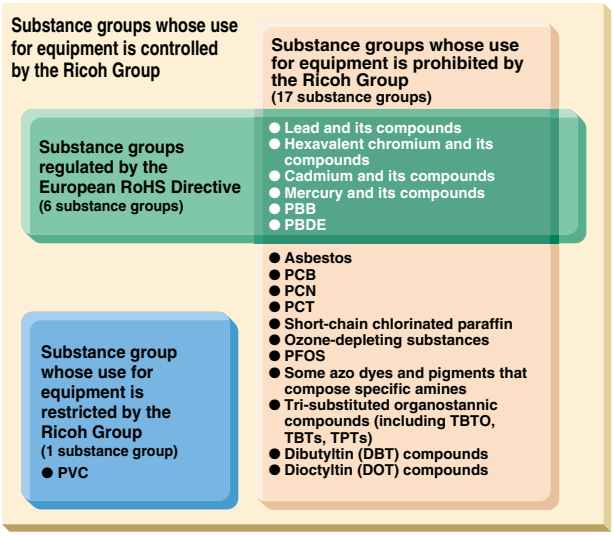
Compliance with the REACH Regulation

<Ricoh Group (Global)>

Under the REACH Regulation[1], a European regulatory framework on chemical substances, producers and importers of substances, preparations and articles (i.e., products, parts, etc. that are given shape during the manufacturing processes, such as the main units of equipment, electronic parts, paper, and packaging materials) produced in, or imported into, the EU are required to register and give notice of all chemical substances included in their products whose quantity is above certain threshold levels. The producers and importers are also required to fulfill their duties to communicate information regarding designated substances contained in products[2] to customers and general consumers. It is anticipated that the number of chemical substances subject to this regulation will eventually exceed 1,500. The Ricoh Group established the REACH Compliance Working Group with 180 attendees from the production division (including the general sales division) in February 2008 to solidify Ricoh's REACH compliance system. The core mission of the working group is to develop a system that will allow us to collect and manage chemical substance information accurately and efficiently from partners both upstream and downstream in the supply chain, including manufacturers of materials, chemicals, and parts, as well as Ricoh Group production facilities, and to provide the information to customers upon their request.

As one of the founders of the Joint Article Management Promotion-consortium (JAMP)[3], Ricoh worked to develop an information communication system on chemical substances for the consortium's use. Based on the JAMP system, the Ricoh Group formulated common rules regarding and developed a database for the communication of chemical substance information in fiscal 2008. We then held explanation meetings for some 1,200 Japanese, Chinese, and Korean suppliers. In fiscal 2009, the system started operation, allowing us to take stock of existing and potential issues and improve the level of our efforts in this area. To ensure the accuracy and completeness of our information collection on chemical substances, we have conducted training sessions targeting employees in procurement and quality management divisions and others, and approximately 120 employees have been certified as

The relationship among substance groups whose use for equipment is either prohibited, restricted, or controlled by the Ricoh Group and substance groups regulated by the European RoHS Directive



"leaders" of our chemical substance information management efforts. We have also developed and provided to our suppliers easy-to-understand manuals and guidance materials explaining how to access the information on chemicals contained in Ricoh products using JAMP tools. From October 2009, the information on SVHC in products for the European market has been made available on our website[4]. The Ricoh Group is fully able to comply with REACH requirements and is ready to respond promptly to future development of the regulations.

1. REACH Regulation
   This is a new EU regulatory framework for the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH). It requires the registration and management of all chemical substances used in businesses in accordance with their conditions of use to ensure safe assessment of chemical substances. It came into force on June 1, 2007, and the regulations have been gradually enforced since June 1, 2008.
2. Called "Substances of Very High Concern (SVHC)," these are substances on the European Chemicals Agency's candidate list for eventual inclusion in Annex XIV.
   3. See page 33.
4. On the Health & Safety Information page of Ricoh Europe's website, see REACH FAQs, Q3 "SVHC – Machines" (http://www.ricoh-europe.com/environment/reference-material/health_safety_information/index.xhtml)

Collaboration with JAMP

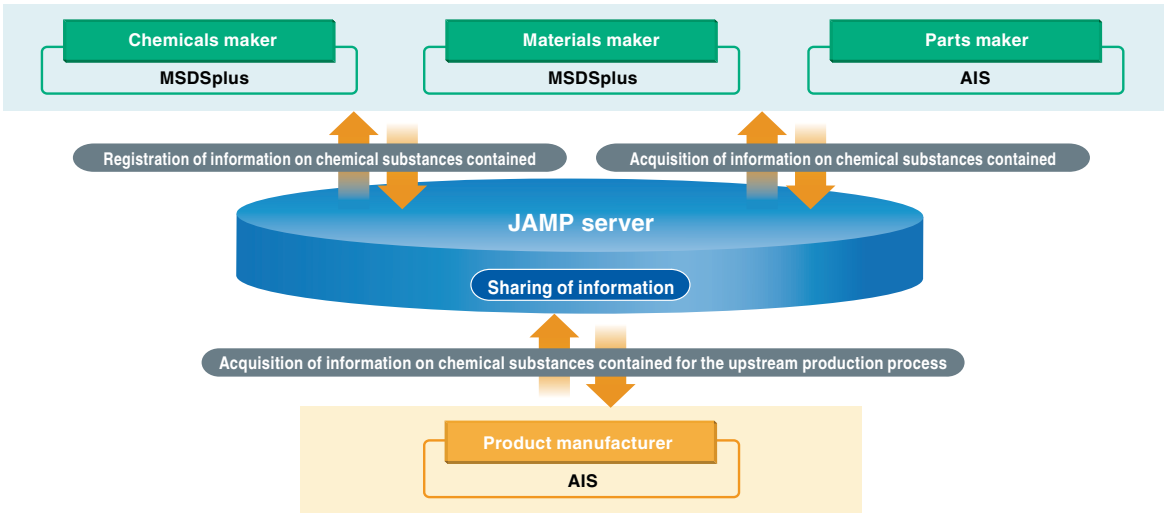
<Ricoh Group (Global)>

In accordance with the REACH Regulation, all manufacturers exporting products to Europe now need to get ready for full compliance. Since this regulation is being applied across the entire supply chain, manufacturers of materials, chemicals, and parts in the upstream and middle-stream must provide information on chemical substances used by them to each client they deal with. To ensure this information is communicated and disclosed efficiently and smoothly, it was recognized in the industry that there was a need to develop common rules, formats, and a database that can be shared by all manufacturers. Based on this recognition of the need to develop and disseminate the common industry-wide communication system to share information on chemical substances contained in articles[1] to enhance the competitiveness of the industry, the Joint Article Management Promotion-consortium (JAMP) was established in September 2006. Under the leadership of 17 promoter companies, including manufacturers of electrical machinery, chemicals, and precision machinery, JAMP is said to be the world's first industry-wide organization of its kind. One of the major missions of JAMP is to create the Material Safety Data Sheet plus (MSDSplus) and the Article Information Sheet (AIS)[2], which are basic sheets used for the communication of information on chemical substances contained in products. JAMP has developed JAMP-GP, a global portal system that enables manufacturers to register their chemical substances information in the JAMP server and share it among members. Launched in June 2009, this system can eliminate the need for individual manufacturers to develop their own communication systems, and enables them to meet the requirements of the REACH Regulations efficiently. The joint consortium signed a memorandum for cooperation in the field of chemical substances management with a Korean government agency in December 2009, and Thai and Malaysian government agencies in March 2010. This move is expected to promote global use of JAMP-GP and help supply chains to meet global standards appropriately.

Ricoh, agreeing with the purpose of JAMP, joined the consortium as a promoter company. Ricoh has played an important role in JAMP since its inception as a member of both the Project Planning & Implementation Committee and the Internationalization Planning & Implementation Committee, aiming to support the administrative work for the operation of the organization and to improve the international harmonization of the system. In December 2009, the Ricoh Group announced that it may use JAMP-GP as a group communication infrastructure, in combination with RaVender-Net (Networking for Venders and Ricoh), the Group's information communication network for suppliers[3]. Through these measures and activities, Ricoh will continue working to contribute to the realization of a society in which the impact of chemical substances on the environment is minimized.

1. Defined as "objects that have a shape and whose size is measurable," including manufactured goods and components designed to have specific forms. More specifically, "articles" refer to equipment and devices, electronics parts, paper products and packaging materials.
2. The basic communication sheets recommended by JAMP to provide information on chemical substances contained in products.
3. For more details, please refer to the page at: http://www.ricoh.com/environment/info/2009/jampgp.html

Communication system developed by JAMP to communicate information on chemical substances contained in articles



AIS (Article Information Sheet)

AIS is a communication sheet that JAMP standardized for providing information on chemical substances contained in articles. JAMP recommends using the sheet to deliver to downstream manufacturers data related to articles, including mass, material, and part (in which part of the article the chemical substance is used). Data on regulated substances should also be included if contained in articles, including content level, name, content amount and concentration.

The downstream manufacturers receive MSDS or MSDSplus, which are also JAMP communication sheets, from upstream manufacturers that include information on chemical substances involved in their processes. The downstream manufacturers process the obtained data, reflecting changes in substances caused by their manufacturing process, and convey the revised data using an AIS to the manufacturers further down the stream. An AIS for an article built up of multiple components can be prepared by integrating every AIS for each component. The purpose of the AIS is to convey information on regulated substances that might remain in finished articles above the permissible level, along the entire supply chain from upstream to downstream. This is a key tool—combined with MSDSplus and component AIS, which can be integrated into one for an article consisting of multiple components—to complete the chemical substance information communication system proposed by JAMP for extended usage across industries and business types.

Chemical substance control for supplies

<Ricoh Group (Global)>

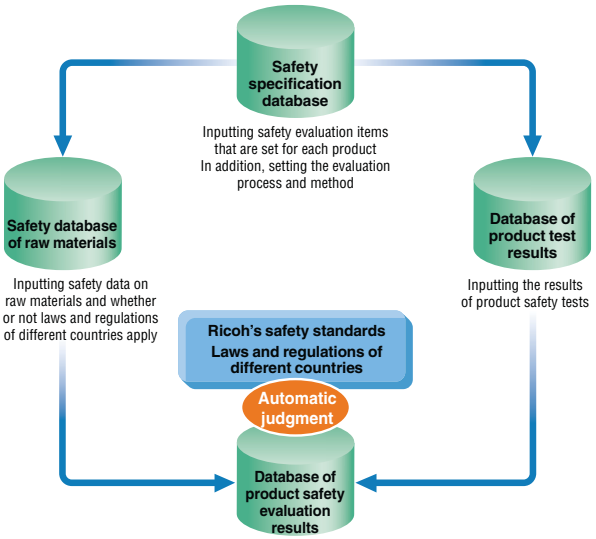
Various chemical substances are used in supplies, including toner and developer. Based on the belief that "product safety is a basic condition for customer satisfaction," the Ricoh Group ensures the safety of its supplies through appropriate chemical substance controls. We use an information system called RECSIS[1] to evaluate safety. Depending on the type of product, we set items for which safety should be confirmed, create MSDS[2], evaluate new chemical substances, check on the method of treatment and disposal, consult the relevant laws and regulations, and prepare safety specification data for products. RECSIS can also be used to make automatic safety judgments by referring to the laws and regulations of different countries as well as Ricoh's standards for the chemical substances contained in supplies.

Using the RECSIS raw material database, we started the pre-registration process under the REACH Regulation[3] in fiscal 2008. The system will be used to comply with future regulations that could require tracking of the quantity data of each applicable chemical substance. Since fiscal 2008, using this system's raw material database, we have continued to take additional steps to satisfy the REACH Regulation, for which a preregistration process commenced in June 2008.

1. Ricoh Environmental & Chemical Safety Information System
2. Material Safety Data Sheet

3. See page 32.

Safety evaluation system for supplies

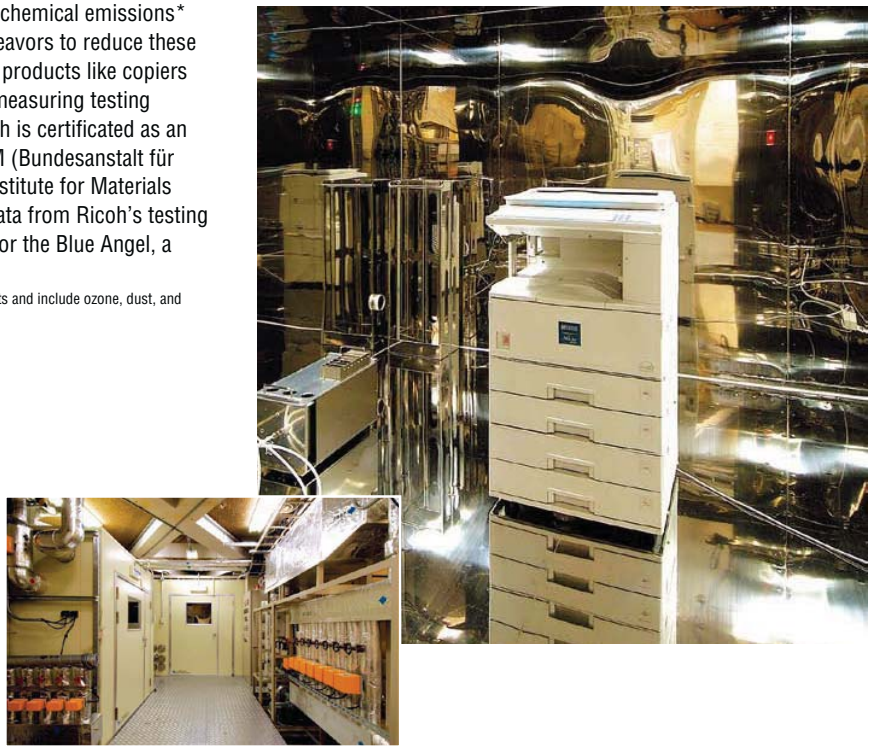


Reduction in environmentally-sensitive substances generated while in use

<Ricoh (Japan)>

Ricoh has established its own standards on chemical emissions* generated by products while in use and endeavors to reduce these emissions. Chemical substances emitted by products like copiers and printers are measured at the emission-measuring testing laboratory located within the company. Ricoh is certificated as an official testing laboratory by Germany's BAM (Bundesanstalt für Material-forschung und -prüfung; Federal Institute for Materials Research and Testing), and measurement data from Ricoh's testing laboratory will be recognized in registering for the Blue Angel, a German environmental label.

* Chemical emissions are chemical substances emitted by products and include ozone, dust, and volatile organic compounds (VOCs).



Emission-measuring testing laboratory
(Ricoh Ohmori Office)

We strive to reduce the environmental impact of our products across their lifecycle by creating solid partnerships with suppliers.

■ Concept

The Ricoh Group promotes green procurement activities that place emphasis on partnerships with suppliers. Green procurement refers to the procurement of raw materials, parts, and products with less environmental impact. Parts and products so designed are manufactured in plants that are advanced in environmental conservation. The purpose of green procurement is to reduce the environmental impact over the entire lifecycle of Ricoh products and to reduce the costs to the Ricoh Group and its suppliers by using resources and energy effectively. Moreover, by establishing these activities, we aim to contribute to global environmental protection and reinforce management practices of the Ricoh Group and its suppliers. The basic policies for our activities until fiscal 2010 are to reduce the environmental impact of procured parts; to maintain and update the chemical substance management systems (CMS); and to collect information on the environmental impact in order to comply with the REACH Regulation. We have also introduced our own paper procurement standards and rules regarding the composition ratio of recycled pulp, and we perform procurement activities by paying full consideration to biodiversity conservation.

■ Target for Fiscal 2010

◎ Work with suppliers to reduce their CO_2 emissions.

■ Review of Fiscal 2009

Activities for reducing CO_2 emissions contribute not only to the prevention of global warming but also to reduction of costs, leading to the reinforcement of suppliers' management practices. Based on this recognition, Ricoh is actively working with its suppliers to upgrade their operational processes and reduce CO_2 emissions. In fiscal 2009, Ricoh's procurement division cooperated with Ricoh Engineering Co., Ltd. (REC), a Ricoh Group company providing facility management services, to assist model suppliers with their efforts to reduce CO_2 emissions. We also formulated the Regulations of Ricoh Group Products Made of Wood to develop a system for preventing the procurement of timber to be used in manufacturing our products—not limited to paper products—from forests with high conservation value from the viewpoint of protecting biodiversity.

■ Future Activities

Based on the know-how and experience accumulated through the joint activities with model suppliers, we will compile guidelines on how suppliers can improve their processes to reduce CO_2 emissions. Through these guidelines, we can be even more active in accumulating information and sharing it with suppliers in order to help them continue with their efforts to reduce CO_2 emissions.

Establishment of Regulations of Ricoh Group Products Made of Wood

<Ricoh Group (Global)>

In February 2010, the Ricoh Group established the groupwide Regulations of Ricoh Group Products Made of Wood. The new rules were developed based on the 2003 Environmental Standards for Paper Product Procurement to expand control over the procurement of wood raw material beyond that used in paper products. And they were to be applicable to the entire group.

These wood raw material procurement rules apply to two groups related to products under the Ricoh or Ricoh Group company brands, namely, paper products (plain copier paper, heat-sensitive paper, etc.) and articles/materials made from wood (manuals and instructions, packaging materials, cushioning materials, pallets, etc.) provided along with any lines of products[1]. Through this application, the rules aim to help protect HCVFs[2], or forests with significant and critical value in terms of global environment and biodiversity conservation, by avoiding the use of wood sourced from these critical forests as material for the Ricoh Group products. The rules mainly provide for the prohibition of the use of wood sourced from HCVFs as raw material and for requirements to be met by suppliers, including provision for the suspension of business with non-compliant suppliers. The Ricoh Group will use these new rules to exert control over wood material procurement for products made from wood, mainly paper products, thereby ensuring that the Group's procurement process contributes to the conservation of HCVFs.

1. Recycled materials, including used paper, leftover wood material and wood chips, are excluded, as it is difficult to trace the original sources of such materials.
2. High conservation value forests (HCVFs), as defined here, fall under any of the following categories: • Old growth forests; • Primary forests/virgin forests; • Natural forests containing habitats of endangered species; or • Forests for which multiple environmental groups claim protective measures need to be taken mainly from the perspective of biodiversity.

* For the outline of Procurement Rules Regarding Wood Raw Material for Ricoh Group Products, please refer to the specific section of our website at: http://www.ricoh.co.jp/ecology/biodiversity/pop01.html

Green procurement activities in partnership with suppliers

Ricoh's support for suppliers' environmental conservation activities is provided in three areas: resource conservation and recycling, pollution prevention, and energy conservation and prevention of global warming. As part of this support, we have assisted suppliers in building the foundations of their environmental conservation activities, namely environmental management systems (EMS) and chemical substance management systems (CMS), since fiscal 1998. However, the results of analysis of greenhouse gases generated during the lifecycle of Ricoh products show that the emissions during upstream production, including in the production of materials and parts, account for a large share of total emissions.

Because of this, the Ricoh Group began to support and encourage suppliers to practice CO_2 reduction activities in fiscal 2007 by utilizing the know-how acquired by Ricoh through its efforts to reduce CO_2 emissions during the production process.

Establishing CMS at suppliers

<Ricoh Group (Global)>

To help establish a chemical substance management system (CMS)* across its entire supply chain, the Ricoh Group commenced a program to train and certify suppliers' employees as CMS examiners in fiscal 2005. In addition to internal audits facilitated by their own companies, certified examiners will conduct audits upstream at second- and third-tier suppliers that deal with important processes involving environmentally sensitive substances and will support them in establishing a CMS. As of the end of March 2010, there were 1,262 certified CMS examiners at 695 suppliers and CMS was in place at 2,271 sites of 902 first-tier suppliers, as well as at 207 second- and third-tier suppliers with important processes involving environmentally sensitive substances. The suppliers' CMS is checked every two years for certification renewal, and in fiscal 2009, 415 suppliers completed the renewal procedure.

* See page 32.

Using RICO2RET—a tool for calculating CO_2 emissions during parts manufacturing

To reduce the environmental impact of its products effectively, Ricoh has developed the Ricoh CO_2 Reduction & Evaluation Tool (RICO2RET) to calculate and visualize the CO_2 level emitted during the manufacturing process for parts, and is promoting the use of this tool at suppliers' sites to expedite a reduction in CO_2 emissions. With this tool, the volume of CO_2 emissions can be obtained for each process or for the manufacture of one single part or for each separate facility used for processing, by simply entering the required information, such as the type and quantity of parts materials or manufacturing supplies, and the amount of energy consumed by the use of production equipment, air conditioners, and lighting fixtures. By visualizing the CO_2 level emitted at each stage of the parts production process in this way, the tool allows suppliers to quickly identify any necessary improvement points in the production process.

TOPIC

Supporting CO_2 Reduction Activities at Suppliers

The Ricoh Group and its suppliers are working in unison on CO_2 emission reduction projects.

Chiyoda Integre Co., Ltd., a supplier for the Ricoh Group and manufacturer of OA equipment and PC components, introduced RICO2RET in late 2007. "This tool enabled us to clarify the substantial environmental impact that non-production equipment such as lighting and air conditioners have. Based on these findings, we quickly established a CO_2 reduction target of 6% down from the August 2006 level by the end of February 2011, and started to develop specific action plans," said Mr. Hiroshi Oguchi, Manager of the Quality and Environmental Management Department of the Development Center.

To achieve the goal, an internal project was launched to promote the company's CO_2 reduction activities in July 2008, and Ricoh's Procurement Control Center and Ricoh Engineering Co., Ltd. have been providing support for this.

"Recognizing that reducing CO_2 emissions will contribute to process improvements, cost reductions, and quality enhancements, we have introduced a wide range of activities in quick succession, including measures to improve yield rates, equipping inverters with compressors, and reducing the number of fluorescent lights in use. Notable successes include a reduction in the environmental impact of our clean room. With the support of the Ricoh Group, these efforts have brought considerable benefits: annual reductions in CO_2 emissions of 200 tons and in operational costs of 8 million yen. Air conditioners operating 24/7 in a clean room that produces precision machinery such as hard drives is the industry norm. However, our measurements have proved that turning off the air conditioners during non-operating hours, such as at night and on holidays, and turning them on again 20 minutes before production starts can maintain the same level of cleanliness in the clean room as the conventional method." said Mr. Satoshi Yamamoto.

Toshiaki Nakamura of REC who supported this project said: "Generally speaking, new machinery is introduced following a carefully thought-out plan to meet quality requirements. But once the installation is complete, it is rare for an environmental or energy assessment to be carried out at the production site without revealing worrying problems. However, effective energy-saving activities require onsite evaluation, measurement, and analysis to identify where waste can be eliminated and to reveal the causes of waste. These form the most import element in these activities. We are delighted to see that Ricoh's internally developed solutions have helped achieve successful results at our partner company. I have personally learned a lot from this project, which has allowed me to support activities on a different type of shop floor from Ricoh's."

Initially implemented in the branch and factory in Tokyo, the company has expanded the project since 2009, encompassing its branches and factories in Toyohashi and Osaka. "As the next step, we are planning to develop a standard manual for CO_2 reduction activities to make them part of our everyday operations," said Mr. Takashi Aoki.

Toshiaki Nakamura
General Manager,
Business Expansion Division
Management Headquarters,
Ricoh Engineering Co., Ltd.

Mr. Takashi Aoki
Chief

Mr. Hiroshi Oguchi
Manager

Mr. Satoshi Yamamoto

Quality and Environment Management Department
Development Center, Chiyoda Integre Co., Ltd.

Under the improved arrangements, the air conditioners come on again 20 minutes before the start of the day and the cleanliness level is then verified

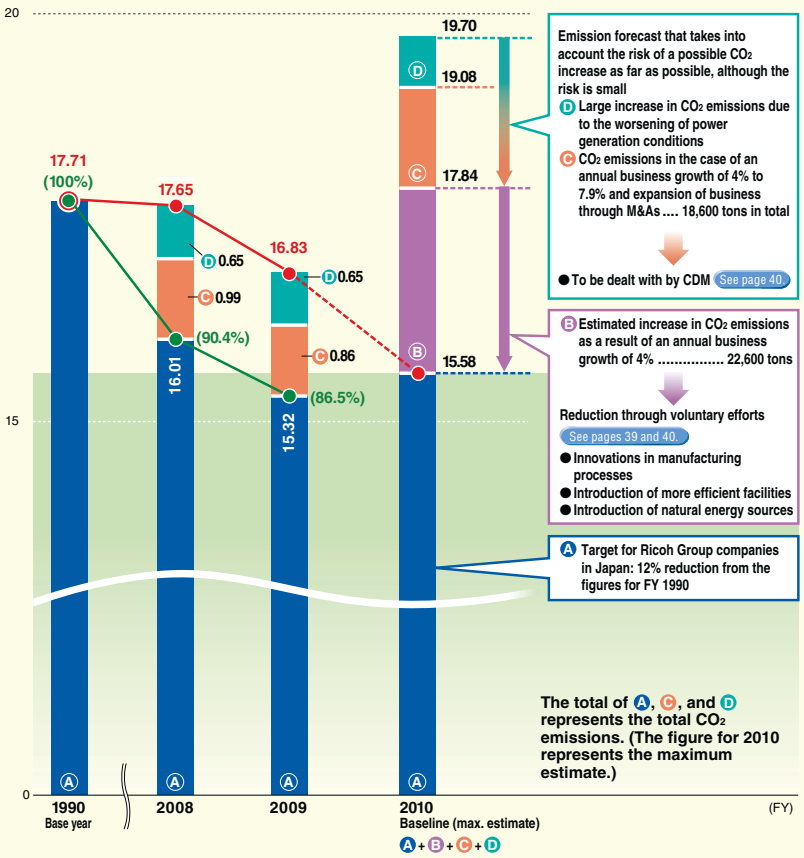
We will reduce total CO_2 emissions by 12% by the end of fiscal 2010 to help prevent global warming.

■ Concept

The Ricoh Group has set goals that it wants to achieve by the end of fiscal 2010, aiming to lead effective efforts to prevent global warming. Since a reduction in total CO_2 emissions is important in preventing global warming, the Ricoh Group companies in Japan have set a higher goal of reducing total emissions by 12% over the fiscal 1990 figure by the end of fiscal 2010, compared with the goal for Japan of a 6% reduction as set out in the Kyoto Protocol. Our Group companies are striving to reduce global warming under this goal, which has been set in anticipation of an expansion in the scale of business. In addition, the Group is making preparations for the Clean Development Mechanism (CDM)[1] project as a scheme to prepare, as far as possible, for a rapid expansion of business through M&As and, although unlikely, increased CO_2 emissions due to worsening of power generation conditions. Efforts will also be made to reduce greenhouse effect gases other than CO_2 by 10% over the fiscal 1995 level by the end of fiscal 2010. In March 2009, the Group also set mid- to long-term goals of reducing total lifecycle CO_2 emissions by 87.5% by 2050 and 30% by 2020 from the fiscal 2000 level[2].

1. See page 40. 2. See pages 17 and 18.

Scenario for reductions in total CO_2 emissions for Ricoh Group (Production) in Japan up to fiscal 2010



* Figures for B and C on the FY 2010 baseline were revised based on previous sales results.
* Figure for D on the FY 2010 baseline was revised based on previous electricity conversion coefficients.
* The figures for fiscal 2008 and the following years include the results for Ricoh Printing Systems, Ltd. and Yamanashi Electronics Co., Ltd., while those for the preceding years have been adjusted accordingly (included in C).

■ Targets for Fiscal 2010

◎ Reduce CO_2 emissions by 12% (Ricoh and manufacturing subsidiaries in Japan, compared to fiscal 1990 figures) by fiscal 2010.
◎ Reduce CO_2 emissions by 10% (manufacturing subsidiaries outside of Japan, compared to fiscal 1998 figures) by fiscal 2010.
◎ Reduce greenhouse gas emissions (except CO_2) in the semiconductor business division by 10% (compared to fiscal 1995 figures) by fiscal 2010.

■ Targets for Fiscal 2020 and 2050

	Target for fiscal 2020	Target for fiscal 2050
Ricoh Group Total lifecycle CO_2 emissions (including emissions of the five gasses converted into CO_2)	30% reduction* (compared to fiscal 2000 figures) *Equivalent to a 34% reduction compared to the fiscal 1990 level (CO_2 emissions in Japan)	87.5% reduction (compared to fiscal 2000 figures)

■ Review of Fiscal 2009

CO_2 emissions at production sites decreased 5.0% in Japan from the fiscal 1990 level and increased 8.3% outside Japan over the fiscal 1998 level (see graphs ❶ and ❸). This suggests that efforts to reduce CO_2 emissions, particularly those to innovate production processes, have brought steady results, in consideration of business growth since fiscal 1990. In real terms, this represents a 13.5% reduction over fiscal 1990 levels, exceeding the goal set for fiscal 2010 as Ricoh will introduce CDM to cope with any increase in CO_2 emissions due to changes in CO_2 emissions conversion coefficients (see Ⓐ, fiscal 2009 results, in Scenario for reductions in total CO_2 emissions for Ricoh Group (Production) in Japan up to fiscal 2010, on Page 37). The CO_2 emissions reduction achieved 8.6% even when including the results for Ricoh Printing Systems, Ltd. and Yamanashi Electronics Co., Ltd., which both joined the Ricoh Group after the 1990 base year (see Ⓐ + Ⓒ, fiscal 2009 results, in the Scenario). As for greenhouse gases other than CO_2, the semiconductor business division achieved a 47% reduction, and the entire Ricoh Group, a 40% reduction, over fiscal 1995 levels (see graph ❹).

■ Future Activities

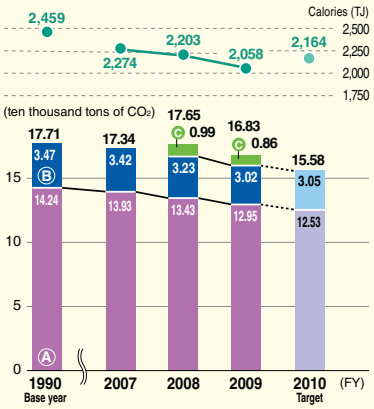
Ricoh will continue working to reduce CO_2 emissions at production sites with a focus on innovating production processes to reduce energy consumption in manufacturing in fiscal 2010 and thereafter. Reduction efforts will be focused on CO_2 emissions that are expected to increase due mainly to the supply sector and the parts business in China, which have shown marked growth. Regarding the introduction of high-efficiency equipment and new energy sources, we will take a cost-effective approach by seeking alternatives with high cost-benefit performance and studying the most effective usage of such systems. Also, we are preparing for the introduction of CDM in order to realize a 12% reduction over fiscal 1990 levels in total CO_2 emissions in Japan, taking into consideration the maximum possible increase in CO_2 emissions, in case the increase surpasses the more likely forecast.

<Japan>

Energy consumption
(CO_2 conversion and calories)

❶ The Ricoh Group (Production)

Ⓐ Ricoh Ⓑ Ricoh Group manufacturing subsidiaries
Ⓒ Ricoh Printing Systems + Yamanashi Electronics



Breakdown of major energy consumption

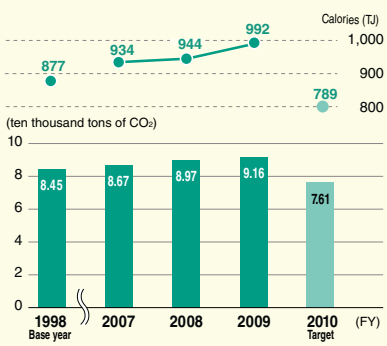
❷ The Ricoh Group (Production)

	FY 2006	FY 2007	FY 2008	FY 2009
Kerosene (kℓ)	1,525	1,389	1,404	1,398
Heavy oil A (kℓ)	2,730	2,706	2,945	2,194
Town gas (1,000 m³)	15,899	15,789	14,059	12,678
Natural gas (1,000 m³)	7,219	7,257	6,450	6,374
Electric power purchased (1,000 kWh)	291,276	296,150	313,902	309,490

<Outside Japan>

Energy consumption
(CO_2 conversion and calories)

❸ The Ricoh Group (Production)



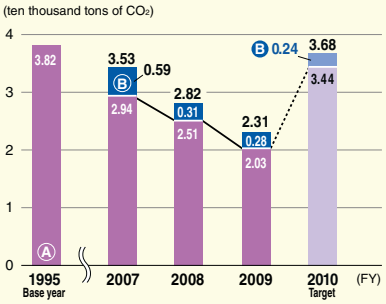
* Results for fiscal 2008 were revised.

<The Entire Ricoh Group>

Greenhouse gas emissions other than CO_2* (CO_2 conversion)

❹ The Ricoh Group (Production)

Ⓐ Semiconductor business Ⓑ Businesses other than the semiconductor business



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

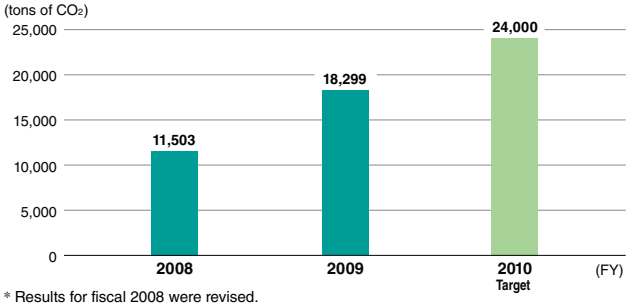
* For CO_2 emissions coefficients and global warming coefficients used in the graphs above, the relevant authorities are shown below:
❶ : Electric power purchased: Guidelines for accounting and reporting of greenhouse gas emissions from industrial commercial sectors (draft); Fuels: Greenhouse gas emissions accounting and reporting manual (ver. 1.1). Both by the Japanese Ministry of the Environment.
❸ : Electric power purchased: Official data released by respective governments; Fuels: GHG Protocol
❹ : Global warming coefficients: Order for Enforcement of the Japanese Act on Promotion of Global Warming Countermeasures

Setting a target for CO_2 reduction through improvements in business activities

<Ricoh Group (Japan)>

In its activities, the Ricoh Group gives priority to innovations in production processes and the introduction of high-efficiency equipment and natural energy so that it can achieve the goal of reducing total CO_2 emissions in Japan by 12% by fiscal 2010 from the fiscal 1990 level. To ensure that we achieve this goal, it is necessary to make systematic reduction efforts. In 2003, Ricoh estimated growths in business up to 2010 (4% annually), and set a target for CO_2 reduction of 61,000 tons through voluntary efforts such as improvements in business activities without relying upon the Clean Development Mechanism (CDM). Of that amount, the Group aims to reduce 24,000 tons in the period between fiscal 2008 and 2010. By clarifying a mid-term reduction target, activities can be implemented systematically, although it may be a long time before the effects start to appear. In fiscal 2008 and 2009, CO_2 emissions were reduced by about 18,299 tons through sustained efforts, including innovations in production processes.

Total reduction in CO_2 through improvements in business activities



* Results for fiscal 2008 were revised.

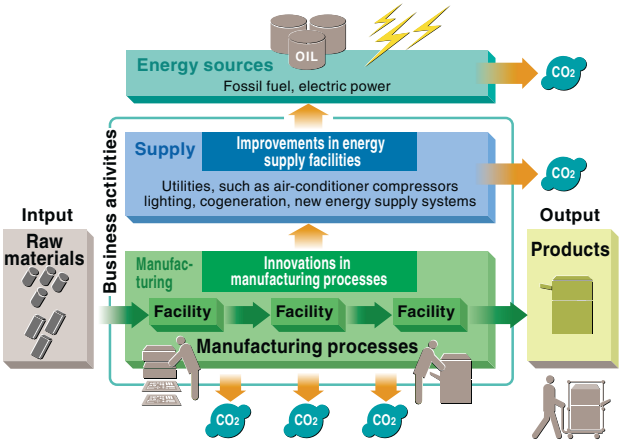
Innovations in Manufacturing Processes, Introduction of High-Efficiency Equipment, Introduction of Natural Energy

Innovations in manufacturing processes to achieve the goal of CO_2 reduction

<Ricoh Group (Global)>

To achieve the goal of reducing CO_2 emissions in Japan by 12% of the fiscal 1990 level by fiscal 2010, the Ricoh Group's energy-saving production process committee, which is made up of people in charge of the Group's major production sites in Japan, checks the manufacturing processes of those production sites, identifies energy losses, and assigns a quota to each for reducing CO_2 emissions. Focusing on innovations in manufacturing processes may save energy at downsized production lines and also have a spillover effect on associated equipment, such as air conditioners and air compressors, at production lines. To date, downsized production lines for organic photoconductors have been put in operation, while the size of toner filling devices has been dramatically reduced. In addition, innovative processes have been realized, including changes in the toner crush lines and thermal sheet painting methods. These technologies are being successively introduced into production lines outside Japan, with the aim of achieving the ambitious goal of reducing total CO_2 emissions by 10% (compared to the fiscal 1998 level) at manufacturing subsidiaries outside of Japan.

Energy-saving manufacturing process and spillover effects



Introducing RECO-View RFID tag sheet to optimize parts management

<Ricoh Gotemba Plant (Japan)>

In August 2009, Ricoh Gotemba Plant introduced Ricoh's original RECO-View RFID* tag rewritable sheet, in pursuit of efficient parts management and environmental impact reduction. The plant uses the innovative sheet for process management concerning manufacturing sites, as well as for management of parts received from and shipped to Atsugi Plant, which delivers parts and units on shelf carts to Gotemba's copier assembly lines. Information about deliveries, such as item name and quantity, stored in a RECO-View tag sheet, is picked up in the form of RF signals by each gate-type antenna installed at multiple check points along the delivery routes as the cart with the tag sheet attached passes by. This tool supports efficient management of delivery information, including receiving/shipping times, item name, quantity, and destination, by reducing the manual operations involved in receiving/shipping, which typically involves reading bar codes. In addition, the tool is capable of providing visual data regarding inventory status, in particular inventory period, thus assisting users to efficiently control processes and reduce inventory. Information stored in a RECO-View tag sheet is also available in printing on the sheet surface to allow visual checks, which contributes to smooth operations at Gotemba. The Plant anticipates that these efforts will reduce the man-hours required for receiving/shipping by 75% and the average inventory period of the parts by 40%. An additional benefit from the introduction of RECO-View is the reduced consumption of paper, previously used for identification tags and instructions/manuals. The resulting effects overall are equivalent to 8.8 tons of CO_2 emissions reduction.

* Radio Frequency Identification (RFID) generally refers to authentication technology using radio frequencies. Recently the term has commonly been used for "non-contact smart cards (chip card)."

RECO-View RFID tag sheets attached to carts

Introduction of highly efficient humidifying systems
<Ricoh Microelectronics Co., Ltd. (Japan)>

Ricoh Microelectronics Co., Ltd. (RME), a manufacturer of electronic circuit modules, has been working to improve the energy efficiency of its energy-intensive humidifying systems in the middle and long term. In fiscal 2009, four steam humidifiers on the first floor of its factory were replaced with highly efficient evaporative humidifiers. Air conditioning is necessary on the first floor throughout the year due to the heat from the manufacturing machines. The introduction of these evaporative humidifying systems has eliminated the need to use energy to generate steam, and has taken much of the load off the air conditioning due to lower room temperatures achieved through the power of vaporization. In addition, one of the four air conditioners has been equipped with an inverter that minimizes the air volume to control the factory temperature when it is not operating. These measures are expected to reduce the consumption of Bunker A fuel oil by 35.4 kℓ, or approx. 30% of the annual amount used and annual electricity consumption by 118,787 kWh.

These improvement activities became eligible for a fiscal 2009 subsidy from NEDO* for business operators working to improve the efficiency of energy use.

* NEDO: New Energy and Industrial Technology Development Organization

Installing an inverter compressor and improving the control method reduces energy consumption
<Ricoh RS Division (Fukui Plant) (Japan)>

Ricoh Fukui Plant has had energy monitoring systems installed since 2000 to measure the energy used on the production line and by the processes on a real time basis. The data obtained is used to identify and prioritize areas for improvement, enabling the plant to carry out energy-saving activities effectively and efficiently.

When producing toners, compressed air is used to crush the raw materials against the panel to produce the toner particles. The air compressors used for this purpose account for approximately 45% of the total CO_2 emissions in the toner production process.

To reduce CO_2 emissions, the plant replaced one of the air compressors used in toner production with an inverter controlled model. Mainstream compressors usually operate with an on-off control system, which inevitably involves unnecessary energy consumption when adjusting the pressure to the change in the airflow requirements. In January 2009, the plant installed an inverter controlled compressor based on the result of an elaborative calculation. The introduction of this one inverter compressor unit improved the compressor control system, optimized the number of compressors in action, and thus eliminated 98% of the energy lost under the existing system.

As a result, the Fukui Plant reduced its annual power consumption by 888.7 MWh, CO_2 emissions by 335.9 tons, and related costs by approximately 12 million yen.

Construction of environmentally friendly plant
<Ricoh Manufacturing (Thailand) Ltd. (Thailand)>

The production plant of Ricoh Manufacturing (Thailand) Ltd. (RMT), a new manufacturing subsidiary which started operation in September 2009, boasts a number of environmentally friendly designs and facilities in various parts of the building, including in the manufacturing area, the warehouse, the administrative office, and the cafeteria. Examples of the green equipment installed include natural lighting and ventilation systems, a highly efficient air-conditioning system utilizing water-cooling freezers, an insulated roof, heat-reflective glass panels, highly efficient ballast for HF lamps, and occupancy sensors. The annual CO_2 emissions reduction is expected to exceed 250 tons.

Manufacturing area in which natural daylight is used

Approach for CDM Project

Approach for CDM project

Ricoh has been preparing for and is implementing Clean Development Mechanism (CDM) projects in order to offset the possible increase of its CO_2 emissions that could be caused by a rapid business expansion resulting from M&A transactions or by other external factors. Under the CDM scheme, if businesses in advanced nations reduce greenhouse gases through projects in developing countries, they may have that reduction reflected in their own CO_2 reduction goals under certain rules, and ultimately such reduction is used by the governments of their countries to meet national targets. Developing countries benefit from this mechanism as well since they are given opportunities to receive investments and technology transfers. During fiscal 2009, a 42,547-ton credit for emissions regarding wind power generation projects in India was transferred to Ricoh's account, resulting in aggregate credit from the projects totaling 73,179 tons.

We are making every effort to reduce discharged matter and alleviate the waste of resources at our global sites.

■ Concept

The Ricoh Group is working globally to maximize resource productivity, primarily by limiting the amount of matter generated that will be discharged, reducing water consumption, and reducing paper consumption. Since fiscal 2008, new reduction efforts have been promoted. These focus on resource waste reduction in the thermal media business, the packaging materials used in production, and transportation between sites inside and outside of Japan, as well as the discharged matter generated during the production of polymerized toners. In addition, we introduced an audit system for waste disposal service providers in Japan to upgrade and expand appropriate waste disposal methods. To enhance this system, in October 2009 we began a scheme to recognize excellent service providers.

■ Targets for Fiscal 2010

◎ Reduce the amount of discharged matter in the thermal media business by 10% from the level in fiscal 2006.
◎ Reduce the amount of discharged matter from packaging materials by production volume in the manufacture of imaging systems by 30% from fiscal 2006 levels inside Japan, and from 2007 levels outside Japan.
◎ Reduce the amount of discharged matter per production volume in production of polymerized toners by 17% from the level in fiscal 2007.

■ Review of Fiscal 2009

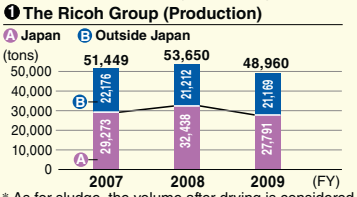
In fiscal 2009, the Group's total amount of discharged matter decreased by 8.7% compared to the previous fiscal year (Graph ❶), indicating that improvements have been steadily made in the three priority areas. Discharged matter in the thermal media business was reduced by 5.7% over fiscal 2006. To reduce packaging materials used in production and for transportation between sites inside and outside of Japan, individual sites are striving to achieve the targets set for fiscal 2010. In the area of discharged matter generated during the production of polymerized toners, reduction per production volume reached 23.3% compared to the fiscal 2007 level.

■ Future Activities

We need to step up improvement efforts to meet the targets set for fiscal 2010, which falls on the final year of our 16th Environmental Action Plan. As for discharged matter in the thermal media business and polymerized toner production, the production, development, and design divisions will co-operatively select improvement themes and continue to make efforts to reduce wastage of resources. As for packaging materials used in production, steady efforts will be made to implement the measures introduced.

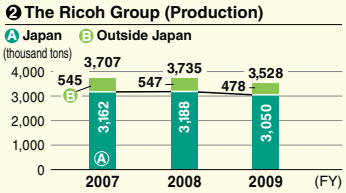
<The Entire Ricoh Group>

Total amount of discharged matter generated
❶ The Ricoh Group (Production)



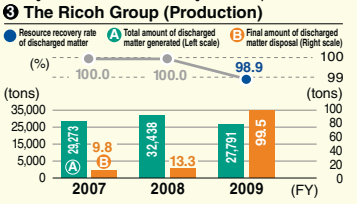
* As for sludge, the volume after drying is considered as its volume.

Volume of industrial water used
❷ The Ricoh Group (Production)



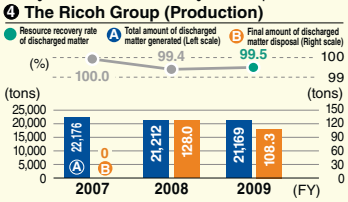
<Japan>

Resource recovery rate of discharged matter/Total amount of discharged matter generated/Final amount of discharged matter disposal
❸ The Ricoh Group (Production)



<Outside Japan>

Resource recovery rate of discharged matter/Total amount of discharged matter generated/Final amount of discharged matter disposal
❹ The Ricoh Group (Production)



* Final amount of discharged matter disposal in fiscal 2008 consists of sludge in the private sewerage systems of Shanghai Ricoh Digital Equipment Co., Ltd., used in landfills, and part of the sludge used in landfills as a result of Ricoh Thermal Media (Wuxi) Co., Ltd. coming on line.

Resource recovery rate of discharged matter:
Amount of resource recovered/amount discharged
Amount of water removed by dehydration, drying, or deacidification is excluded from the calculation for the fiscal 2009 rate.

* Graphs ❶ to ❹, above, include data for Ricoh's non-production sites.
* Residue left after intermediate treatment is included in the calculation of the amount of resources recovered and final disposal amount for fiscal 2009 (Graphs ❸ and ❹). Amount of residue from refuse incineration is included in the final disposal amount, even if energy is recovered from the incineration process. Increases in the final amount of discharged matter disposal in Japan in fiscal 2009 is attributable to this change in the calculation basis.

Auditing waste disposal service providers

<Ricoh (Japan)>

Ricoh has been making efforts to enhance the audit of waste disposal service providers since 2005 so that waste generated by the company will be disposed of properly and appropriately by reliable partners. We established uniform audit standards for the Ricoh Group, conducted auditor training for employees engaged in waste disposal at respective business sites, and certified them as auditors. Ricoh currently audits all the service providers that have business relations with the Group's production sites. In the event that any non-compliance is detected, the service provider is requested to make improvements, and provided with assistance to carry them out. After a few days, a confirmation audit is conducted. In fiscal 2009, we revised our standards for service arrangements with waste disposal providers based on our audit standards. The revised standards have now been incorporated into the Ricoh Group Standards, a set of internal standards for entering new or renewing existing contracts with business partners. In addition, a Certification Program for Excellent Waste Disposal Service Providers has started, and we recognized the first certified vendor under this program in February 2010. As the next step, we are working to ensure that waste generated from our sites will be disposed of by a smaller number of excellent waste management partners in order to better manage the risks associated with illegal waste disposal. At the same time, we will also work more closely with our waste management partners so that they all will be able to meet the quality requirements for certified waste disposal service providers.

TOPIC

Certifying Excellent Waste Disposal Service Providers

Matsuda Sangyo becomes the first certified provider.

On February 10, 2010, Ricoh presented a certificate to Matsuda Sangyo Co., Ltd. (Sayama Plant, Environmental Division; and Musashi and Iruma Factories, Product Division) at the Matsuda Sangyo headquarters in Shinjuku, Tokyo to recognize the company as the first Excellent Waste Disposal Service Provider for the Ricoh Group. Matsuda Sangyo operates food, precious metal, and environment businesses.

Matsuda Sangyo's Senior Managing Director Tsuneo Tokunaga (center) and Director Ryuichi Yamazaki (center right) holding the certificate. Presenters of the certificate: Ricoh's General Manager of Corporate Environment Division Tatsuo Tani (center left) and Auditor Tomoko Yuuki (far left)

Its Environmental Division has a nationwide network for material recovery that takes advantage of the company's proprietary high-quality technologies in the fields of precious material recycling for the recovery of silver from used photosensitive materials and waste liquid processing. The company has been working hard to build a sustainable society through its corporate philosophy aimed at reducing the environmental impact and the effective use of non-recyclable resources.

Mr. Tsuneo Tokunaga, Senior Managing Director Product Division said, "We are honored to become a certified partner of an environmental leader like Ricoh. I believe that our constant commitment to the motto, 'All our businesses must be of benefit to customers' has led to our certification." Mr. Ryuichi Yamazaki, Director Environmental Affairs Division, also said, "We are pleased with this recognition of our uncompromising efforts to meet the increasingly severe regulatory requirements of this decade. We are also grateful to Ricoh for the objective advice we received during the audit of our start-up Sayama Plant. Their input was really helpful."

"Matsuda Sangyo is a reliable and diligent partner. I saw its staff members perusing Ricoh's detailed documents in a waiting room before they picked up recyclable materials from our plant. They often provide us with specialized knowledge and the latest information. Through my day-to-day interaction with them, I can tell that the company takes pride in what they do. Strong and reliable partners like Matsuda Sangyo make the valuable activities of recourse recycling by manufacturers like Ricoh possible," said Tomoko Yuuki, auditor at the Ricoh Atsugi Plant, who recommended Matsuda Sangyo to be the first certified vendor.

R&D Center (top) and Sayama Plant (bottom) at Matsuda Sangyo

Full use of a Production Loss Tree to achieve enhanced quality, reduced costs, shorter delivery time, and greater environmental friendliness

<Ricoh Thermal Media Company (Global)>

Ricoh Thermal Media Company (TMCo) aims to eliminate resource waste from its operations by using the "Production Loss Tree" chart. Previously, improvement activities were conducted individually in line with the areas of concern: quality, costs, delivery, and environment. The chart, which was introduced in 2006, visibly demonstrates how much of a resource is wasted at which point of the production process on a factor-by-factor basis. In the chart compilation system, the information about a single type of waste is registered with the information about its causal factors, financial value, and resulting discharge as a focal area of improvement activity so that TMCo can simultaneously assess the potential of different activities to reduce the amount of discharged matter, improve quality and cut costs. The company can then determine the level of importance of difficult or process design-related issues otherwise unaddressed. Problematic yet uncared-for preconditions and bottlenecks are revisited to determine if they have been corrected and to ascertain possible benefits if corrected. Based on the reevaluation, such problems previously uncared for because the manufacturing function alone was unable to overcome them are now subject to joint improvement activities with other departments. In this way, the overall quality of the improvement activities has been enhanced. Since fiscal 2008, the company has rolled out the activities in its four production regions (France, the U.S., China, and Japan) and been operating a "Cost Reduction and Environmental Information Database" and other information disclosure tools to share the progress of the activities and related challenges in each region, in order to help achieve business and environmental goals on a global scale. Such a sustainable environmental management approach that considers environmental impacts as part of business costs and aims for even higher quality has penetrated Ricoh's thermal media facilities around the world.

Wastage reduction efforts by identifying the causes of paper out

<Ricoh Thermal Media Company, Ricoh Industrie France S.A.S. (Global)>

Thermal paper products, the flagship products of Ricoh Thermal Media Company, are manufactured by applying layers of chemicals that generate color when exposed to heat. These manufacturing processes involving repetitive coating and drying of chemicals require long production lines—100 meters long (base paper travels 370 meters)—and are equipped with more than 200 paper conveying rollers. A single occurrence of paper out in the production lines entails a massive amount of waste chemicals and base paper, as well as time and labor for cleanup and recovery. To minimize the occurrence of paper out, Ricoh Industrie France S.A.S. (RIF) identified its major causes in fiscal 2009 based on analysis of the Production Loss Tree and took rectifying measures such as: (1) optimizing the timing of paper refilling by assessing the causes of defective refilling identified by high-speed cameras installed at automatic refilling points, and (2) introducing crease-prevention measures to winders. The corrective activities have led to the reduction of paper-out conditions by some two-thirds and an annual waste discharge reduction of 450 tons year-on-year. The key to such success was in-depth analysis and action. Higher yield rates, lower costs, and greater operational efficiency have also been achieved by these improvement efforts. In fiscal 2010, RIF started to monitor and analyze the determining factors of wastewater levels, in order to reduce wastewater discharge, which accounts for a large portion of the company's total waste.

Automatic refilling process to transfer a 200-cm-wide roll paper to another rolling conveyer. The optimized operational timing prevents paper out caused by failed refilling.

Closed-loop recycling of solvents used for producing PxP toners (polymerized toners)

<Ricoh RS Division (Ricoh Numazu Plant) (Japan)>

At Ricoh RS Division, recycling of the solvents used in manufacturing PxP toner, which was previously outsourced to external contract vendors, is now done on site. To achieve this level of onsite closed-loop recycling, the division worked to identify a toner material formula and manufacturing technologies that were more recycling-friendly. It was a challenge because the solvent used influences the shape of the toner particles, an important determinant of the quality of PxP toner, and conventional solvents, which are made from several different chemicals, are difficult to recycle. After intensive research, Ricoh's RS Division successfully developed a new technology that retains high-quality particle shapes, even when the solvent used during the manufacturing process is changed from the conventional mixed type to a single chemical solvent.
The new technology has enabled us to avoid operational losses related to the washing of the production equipment that is required before manufacturing a different toner model. The recycling made possible by this technology has resulted in reduction in discharged matter as well as an approx. 90% reduction in solvent consumption and the associated cost reduction. To leverage this success, Tohoku Ricoh Co., Ltd. has decided to adopt this new technology at its new mass production facility for PxP toner that is scheduled to start operation in 2010. The company is also going to establish a higher resource-productive manufacturing system.

Reducing packaging waste in transportation between global production sites

<Ricoh Group (Global)>

All the parts and units transported from Ricoh Asia Industry (Shenzhen) Ltd. (RAI) to production sites throughout the world used to be placed in corrugated cardboard boxes, which were then carried in containers. Waste materials are recycled by the business sites accepting the goods as corrugated cardboard, but recycling does cause some environmental impact and wastage of resources, which ultimately made it necessary to reduce used packaging materials. In light of this, returnable racks that can be used repetitively were introduced in fiscal 2007 for the transportation of some parts including scanner units from RAI to the Ricoh Gotemba Plant. In fiscal 2008, such racks were introduced for the transportation of ADF units from Ricoh Elemex Corporation (Shenzhen) to the Ricoh Gotemba Plant. From fiscal 2009, use of this green packaging has been expanded globally, including for the transportation of items from RAI to Ricoh Industrie France S.A.S. (RIF). We have also worked to improve the load-carrying efficiency, which has led to the simultaneous realization of an annual reduction of packaging material waste by an amount of about 500 tons and an annual ¥45-million cost decrease.

Transportation by returnable rack

Efforts are being made on a global scale to reduce the amount of chemical substances used/discharged, based upon the idea of risk management.

■ Concept

The Ricoh Group is engaged in risk management of chemical substances by applying a risk evaluation method in compliance with the Strategic Approach to International Chemicals Management (SAICM) to minimize the risk throughout the lifecycle of chemicals and to share related information. All the chemical substances used, discharged, and disposed of in the manufacturing processes of Ricoh products are controlled under this management. We will establish a global scheme by fiscal 2010, whereby chemical substances will be reduced and managed after risk evaluation considering the hazard levels [1] and exposure/used amount (or discharged amount), and information on such evaluation will be shared. As a measure against chemical substances contamination of business sites and underground water, we have established a system where respective sites make efforts for prevention in compliance with the uniform standards of the Group. In case of contamination, it can be promptly detected and purified under the system. As for soil and underground water contamination, PCBs, and asbestos, the Group promptly makes efforts to understand environmental liabilities[2] that could affect its financial accounting.

1. Harmfulness to human beings and the environment

2. See page 46.

■ Targets for Fiscal 2010

- ◎ Establish a chemical substances risk management system on a global scale.
- ◎ Reduce use of environmentally sensitive substances by more than 30% compared to the fiscal 2000 level (Ricoh's production sites and manufacturing subsidiaries).
- ◎ Reduce the amount of environmentally sensitive substances discharged by more than 80% compared to the fiscal 2000 level (Ricoh's production sites and manufacturing subsidiaries).
- ◎ The environmental liabilities of PCBs and asbestos in land owned by the consolidated Group companies can be estimated.
- ◎ The environmental liabilities are reflected in the financial accounting of the Ricoh Group.
- ◎ Chlorine organic solvents used by the Group, including companies that become new members of the Group, are completely eliminated.

■ Review of Fiscal 2009

We made further discussions about the scheme to assess risk management. The use of environmentally sensitive substances was reduced 74.3% from fiscal 2000, while the amount emitted decreased 85.2% from fiscal 2000 (Graph ❶). As part of the environmental liabilities survey, we completed a global pre-survey of the Ricoh Group concerning PCBs and asbestos covering the consolidated companies and calculated environmental liabilities reflecting the results. As for chlorine organic solvents used, we formulated a plan to completely eliminate the use of such solvents and started activities to achieve the goal by fiscal 2011.

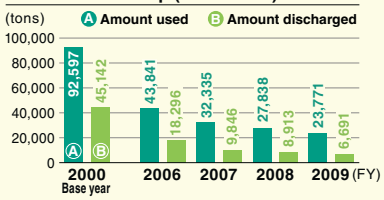
■ Future Activities

We will actively promote the establishment of a risk management system and its upgrading, aiming to realize new global management of chemical substances by the Ricoh Group.

<The Entire Ricoh Group>

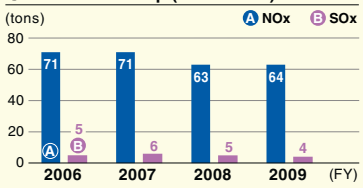
Changes in the amount of environmentally sensitive substances used and discharged[1]

❶ The Ricoh Group (Production)

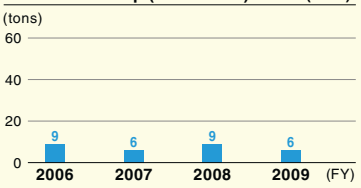


Changes in the amount of NOx, SOx and BOD

❷ The Ricoh Group (Production): Air



The Ricoh Group (Production): Water (BOD)[2]



1. Data for the substances specified in the environmental action plan, which consists mainly of the substances covered by the PRTR Law and includes other chemical substances used by the Group in large quantities.
2. Represents total emissions directly released into public-use water areas.

* Graph ❷ does not include data for Shanghai Ricoh Digital Equipment.

Establishment of the Standard on Environmental Risk Management with Respect To Assets

<Ricoh Group (Global)>

The Ricoh Group established and enforced the Standard on Environmental Risk Management with Respect to Assets in December 2009*. The purpose of this standard is to identify major risks entailed in the acquisition/sale/lease of property and minimize their impact on business. The new standard applies to all acquisitions, sales, and lease of property within the Ricoh Group (all the group companies subject to the consolidated accounting). Risk management under the new standard follows three key principles: (1) to identify significant environmental risks related health risks when acquiring, selling and/or leasing property, including cases involved in M&A; (2) to develop plans to manage and reduce the identified risks and implement appropriate measures according to the plan; (3) to provide related parties with important information on the identified environmental/health risks at the time of acquiring, selling and/or signing a lease contract for property. If risks concerning contaminated soil, PCBs, asbestos, or other substances subject to environmental regulations are identified, the division in charge and the Environment Division will discuss and estimate the cost for future measures before deciding whether to finalize

the property transaction under negotiation. At a total of 1,022 global non-production sites of the Group, soil investigation of owned and leased land was completed by September 2006. With this completion, the Group began to keep soil contamination risk fully under control—risks identified and appropriately managed—at all production and non-production sites. Having launched this new management standard to enhance this risk control status, the Group has a system in place to identify and manage environment/health risks related to land and buildings to be acquired or leased in the future.

* Until the establishment of these standards, regulations of environmental risks related to property, mainly soil contamination, were provided under related rules and regulations.

Chemical Substance Control

Establishment of a chemical substance risk management system

<Ricoh Group (Global)>

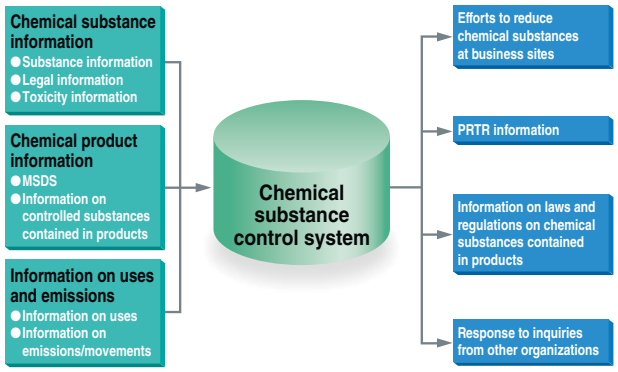
The Ricoh Group is promoting the establishment of a chemical substance risk management system across the Group based upon the concept of risk management. The Ricoh Group is seeking to establish a risk management system that will satisfy the following four requirements: (1) assure safety regarding chemical substances used in the manufacture of Ricoh products and discharged/emitted into the environment, by identifying and managing the amounts used and discharged; (2) evaluate the lifecycle risks of chemical substances that have the potential to affect local residents and/or local ecosystems; (3) eliminate risks that exceed acceptable levels through management and reduction efforts; and (4) effectively share information on risks obtained through such evaluations with related parties. Based on this plan, in fiscal 2009, we established a Group-wide system to manage risks that may impact local residents in relation to the chemical substances used in the manufacturing processes.

Chemical substance control and information disclosure

<Ricoh Group (Global)>

The Ricoh Group uses its chemical substance control system to monitor data on chemical substances used, discharged, and disposed of at business sites. The system is designed to promote the reduced use of chemical substances, to prepare materials for PRTR reporting, and to speedily respond to inquiries received from around the world.

Chemical substance control system



Schedule of activities for establishment of risk management system

March 2009
- Material balances of processes are made clear for chemical substances used in large quantities.

March 2010
- A risk management system covering human beings and the environment is established and put into operation.

March 2011
- Risk management and reduction activities are being carried out through the introduction of green and sustainable technology.
- Information on risks is shared with the related parties through good communication.

Hazard indicator	Hazard classification in GHS*
Environmental risk of chemical substances	Risk = hazard class x exposure amount
Evaluated substances	Chemical substances used for industrial (manufacturing) and/or laboratory (research) purposes
Managed group	Global (Ricoh Group)
Action	• Clarification of material balances (PRTR calculation method) • Registration of MSDS (including GHS hazard classification) • Establishment of risk evaluation procedures (scenario setting, hazard evaluation and setting reference value for evaluation, exposure evaluation, risk rating) • Development of a system to manage/reduce risk • Realization of risk communication

* GHS (Globally Harmonized System of Classification and Labeling of Chemicals): System to classify chemical substances in accordance with the internationally standardized rules according to types and level of hazardousness, and to label chemicals with their classified hazard information and provide material safety data sheets.

Efforts for the complete elimination of chlorine organic solvents

<Yamanashi Electronics Co., Ltd. (Japan/Thailand)>

Chlorine organic solvents are used for the production of organic photoconductors (the imaging components of copiers and printers). Recognizing the possible considerable risks of these chemical substances affecting the environment and human beings, the Ricoh Group completely eliminated the use of the solvents for the production of its products in fiscal 2005, including those produced by companies outside the Group on consignment. After this, however, we discovered that Yamanashi Electronics Co., Ltd., which joined the Group in November 2006, used chloroform and dichloromethane as chlorine organic solvents. To remedy this problem, Yamanashi Electronics has been striving to reduce the amounts of these solvents used and discharged since the latter half of fiscal 2006. Furthermore since fiscal 2008, the company has been working to develop a solvent formula that does not use chlorine organic solvents. Due to its ongoing efforts, the total removal of the hazardous solvents from production processes at its plants in Thailand and Japan is expected to be realized by the end of fiscal 2010 and 2011, respectively.

Efforts Concerning Soil and Underground Water Contamination, Asbestos, and PCBs

Asbestos and PCBs

<Ricoh (Japan)>

As for asbestos used at Ricoh's business sites and facilities, a survey was conducted on sprayed asbestos. Measures to prevent dispersal, such as containment and enclosure, have been taken at all relevant sites and the substance has been confirmed at a level that will not negatively affect human beings, people in adjacent neighborhoods or employees. We will continue our systematic efforts for improvement and removal of asbestos. In the meantime, Ricoh has surveyed all the PCB-containing products held by the company, and has managed them and completed notification in compliance with the relevant laws and regulations. In fiscal 2008, related measures were introduced at three business sites. Ricoh plans to introduce similar measures at other sites successively and complete their disposal by fiscal 2016.

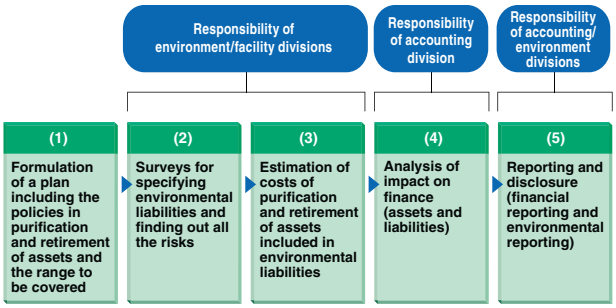
Understanding environmental liabilities

<Ricoh Group (Global)>

Companies are responsible for environmental contamination and anything that can lead to environmental contamination, whether caused by their past, current, or future business activities, and they must therefore make efforts into the future to prevent contamination or its expansion. They must also take all necessary measures such as purification and repair if and when contamination occurs. In fiscal 2007, the Ricoh Group began to examine sites for soil/underground water contamination, asbestos and PCBs. Ricoh takes its responsibility to recover sites to their original state seriously, with the accounting, environment, and facility divisions cooperating to appropriately reflect the impact on corporate performance of fulfilling the obligation that should be assumed by companies (environmental liabilities) in financial accounting. In light of assessments of our facilities, the Group estimated (1) the amount of asset retirement obligations[1] calculated in compliance with the accounting standards, (2) the amount that could become liabilities in financial accounting in the future in compliance with laws or contracts, and (3) the costs of purification the Ricoh Group will carry out according to its own policies, although such purification is not required by laws or contracts. The estimated future expenditure for asset retirement obligations of the Ricoh Group to dispose of asbestos and PCBs and to return buildings and land to their original state was ¥1,230 million[2] as of the end of fiscal 2009. In addition, the Group provided ¥970 million in reserves for soil purification. See page 47.

1. Payment obligation required by laws or contracts concerning the future retirement of fixed assets. This obligation includes that for the retirement of harmful substances contained in fixed assets, as well. In Japan, the Accounting Standard for Asset Retirement Obligations will be introduced in fiscal 2010.
2. Asbestos: ¥945.1 million; PCBs: ¥8.3 million; returning buildings and land to their original states: ¥280.4 million

Implementation flow and roles of the environmental liabilities calculation project



Views held by employees

INTERVIEW

Improving the Precision of the Disclosure and Tracking of Environmental Liabilities

Kenji Takegami
Senior specialist
Accounting Section
Accounting Department
Finance and Accounting Division

We participated in a project to disclose and track environmental liabilities.

Activities through the partnership between Accounting, General Affairs, and Environmental Divisions

We have been participating in an internal project with the goal of improving the precision of the disclosure and tracking of environmental liabilities since fiscal 2007. This project team consists of the accounting, general affairs (in charge of facilities), and environment divisions as well as external specialists. The team estimated the costs for purification, and other appropriate measures, of facilities based on the results of soil and building tests, and calculated the amount of asset retirement obligations (costs required to recover the original states as well as costs for purification or processing of pollution). Asset retirement obligations are a new component of corporate accounting. The accounting standards for them have been disclosed but their calculation flow has not yet been established. There were very few precedents regarding what exactly to cover or how to make estimates. Therefore, this project worked to "specify environmental liabilities" from scratch. In addition, regarding the "identification of pollution risks" and "estimate of asset retirement costs"—which are considered the most time-consuming of all the calculation processes—we were able to largely reduce the time required for the task because as of 2007 we had completed the calculation of costs for the examination and purification of soil and underground water contamination on a global basis and had finished testing asbestos and PCBs in Japan.

Extremely smooth cooperation between divisions

Due to the project activities, the Ricoh Group has been able to disclose its environmental liabilities since the end of fiscal 2007. We still continue to cooperate with the other divisions and conduct examinations of the small amounts of asbestos contained in flooring material, etc., with the goal of boosting the level of calculation precision. The accounting division has been able to learn that we could confirm with very high accuracy not just soil and underground water pollution, but also the amount of asbestos and PCBs in facilities. Although until recently we had little interaction with other divisions, and this was our first participation in this kind of project, I believe we were able to interact well with other divisions. On the other hand, the asset retirement obligations calculated during this project were not very significant in terms of affecting the financial statements. However, we felt that the numbers were very meaningful in that tracking and appropriately disclosing asset retirement obligations shows one aspect of our corporate responsibility and our stance toward environmental issues.

Management of the contamination risk of soil and underground water

<Ricoh Global (Global)>

The Ricoh Group addresses the issue of soil and underground water contamination from the three viewpoints of social responsibility, environmental risks, and financial risks. With this recognition, the Group established the Standards for the Management of Risks Related to Soil and Underground Water Contamination and has been working in conformity with basic policies set under the standards. At sites where contamination has been detected, appropriate measures are underway according to the specific scenario that each site has drawn up for complete purification. These contaminated sites estimate the costs that will be required before purification is completed, aiming to ensure optimized costs in the medium and long term for all necessary work. The cleanup status is checked on a regular basis, and if unexpected discoveries are made, the purification plan is reviewed without delay and revised as appropriate.

Pollution cleanups are often costly, and there is a good likelihood that a cleanup may cause a heavy loss to business. Ricoh sets aside adequate reserves for possible future losses from repairs of environmental damage based on reasonable cost estimates. As of March 31, 2010, Ricoh had set aside ¥970 million in reserves for soil purification.

The Ricoh Group's Basic Policies Concerning Soil and Underground Water Contamination

(1) Top priority is given to preventing health hazards.
(2) Efforts will be made to carry out surveys and measures to cope with contamination caused by the Ricoh Group's business activities.
(3) Laws, regulations, and ordinances set by national and local governments shall be observed.
(4) Efforts will be made to establish risk communication with local governments and residents.
(5) Soil is checked for contamination when land is purchased/transferred or rented/returned.

Survey results for underground water pollution and purification efforts at Ricoh Group production sites (average for fiscal 2009)

	Business site	Pollutant	Survey result (mg/ℓ)	Standard value in Japan (mg/ℓ)
Japan	Ricoh Optical Industries	1,2-dichloroethylene	0.077	0.04
		Trichloroethylene	0.35	0.03
		Tetrachloroethylene	0.59	0.01
	Ricoh Elemex, Okazaki Plant	Trichloroethylene	3.4	0.03
		Vinyl chloride monomer	0.0024	0.002
		Hexavalent chromium	2.8	0.05
		Cadmium	0.065	0.01
	Ricoh Elemex, Ena Plant	1,2-dichloroethylene	0.14	0.04
		Trichloroethylene	1.0	0.03
		Vinyl chloride monomer	0.066	0.002
		Carbon tetrachloride	0.0034	0.002
		Hexavalent chromium	0.68	0.05
		Fluorine	5.8	0.8
	Ricoh Keiki	Vinyl chloride monomer	0.027	0.002
Outside of Japan	Ricoh Electronics Inc., Irvine Plant (U.S.A.)	1,2-dichloroethylene	0.27	
		Trichloroethylene	0.16	
		Tetrachloroethylene	2.6	
	Ricoh Industrie France S.A.S. (France)	Tetrachloroethylene	0.17	
	Ricoh UK Products Ltd. (U.K.)	1,2-dichloroethylene	12	
		Trichloroethylene	2.1	
		Tetrachloroethylene	16	
		Vinyl chloride	0.85	

* The highest yearly-averaged densities recorded at the monitored spots are shown in the above survey results.

We are promoting the renovation of the working style aiming to create an office environment with less environmental impact and higher operational efficiency.

■ Concept

Non-production sites of the Ricoh Group carry out energy-saving and discharged matter reduction activities using the PDCA cycle, adopting the same concept as production sites. They quantify the environmental impact of air-conditioning facilities, lighting, disposal of waste, etc. to see which part of the offices causes a higher environmental impact. Based upon the quantified data, systematic efforts are made to carry out measures with greater effects. The Ricoh Group promotes measures for improvement incorporating even the revision of employees' working styles and workflows, including how to manage documents and use of telephones and computers, so that environmental impact can be reduced and operational efficiency improved to a greater degree. We will continue to engage ourselves in sustainable environmental management of offices through the renovation of working styles.

■ Target for Fiscal 2010

◎ Control CO_2 emissions in non-production activities so that they will not exceed the emissions in fiscal 2006 (Ricoh and non-manufacturing subsidiaries in Japan).

■ Review of Fiscal 2009

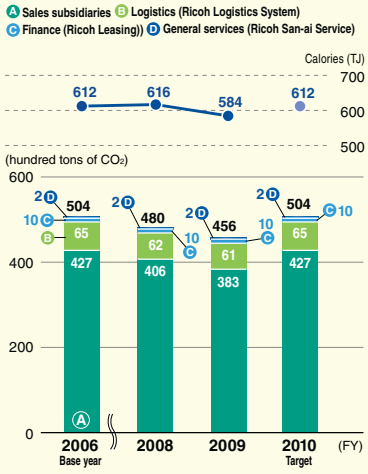
CO_2 emissions in offices were reduced by 9.5% from fiscal 2006, as a result of improvement activities incorporating the revision of working styles and workflows. Activities participated in by all employees were also continued, including a campaign to have all employees leave the office without working overtime on particular days. This all-hands activity was carried out more strictly and with increased campaign days, and has produced continuous and growing results. Activities to promote the use of energy-saving features in Ricoh products in our own offices—including reviewing the settings for energy-saving modes—are also being conducted, leading to reduced environmental impact. The information obtained is also being used as know-how that can be referred to when we recommend such features to customers.

■ Future Activities

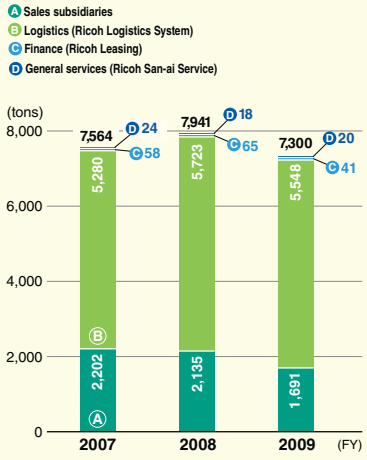
Particular efforts will be made for the reduction of CO_2 emissions, mainly through the improvement of operations. The know-how obtained will be shared within the Group, while being accumulated as know-how to be used in the office solution business as well as in recommendations to be provided for our customers.

<Japan>

Energy consumption
(CO_2 conversion and calories)
❶ The Ricoh Group (Non-Production)



Total amount of discharged matter generated
❷ The Ricoh Group (Non-Production)



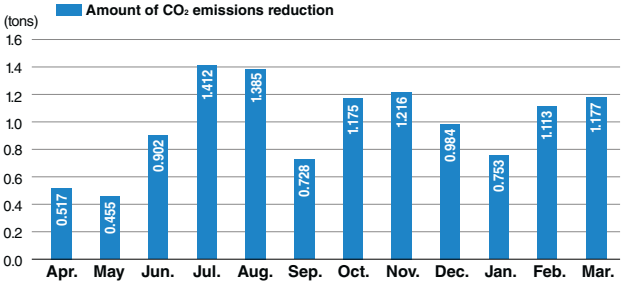
* Increases for Ricoh Logistics System (fiscal 2008) in the graphs above are due to the expansion of the area of data collection.

CO_2 reduction effect of Super Fresh-up Day

<Ricoh (Japan)>

Ricoh designates two days per week as "Super Fresh-up Days," for the prevention of excessive overtime work by employees, the promotion of physical and mental refreshment, and the reduction of environmental impact at business sites. On a Super Fresh-up Day, employees are supposed to leave the office and put out lights by 18:30. Our calculation of the effects of this measure at the Head Office, where 1,736 employees work, showed that CO_2 emissions were reduced by about 0.15 tons on average on a Super Fresh-up Day, or a total of about 11.8 tons per year.

CO_2 emissions reduction due to "Super Fresh-up Days"
Head Office: 1,736 employees, April 2009–March 2010



Internal use of the energy-saving mode to promote the practice at customer sites

<Ricoh Group (Global)>

The Ricoh Group is promoting the use of the energy-saving mode to help customers reduce their environmental impact. Before urging our customers with confidence to use the energy-saving mode, we needed to know the effects of the mode as well as the possible inconveniences or dissatisfactions from the customer's perspective. Between February 2009 and March 2010, we conducted a survey on a total of 1,500 copiers used at Ricoh offices and manufacturing subsidiaries worldwide to verify the benefits and to identify possible issues with the energy-saving mode.

As a result, we discovered that unless there is a special work-related reason for not using energy-saving mode, we could use it without any problems. We were able to gather proposals and information from employees for improvements aimed at persuading customers to use the energy-saving mode. In addition, after this internal use of the energy-saving mode, we found that reduction in CO_2 emissions and energy consumption totaled roughly 17 tons and 45 MWh per month, respectively. The Ricoh Group plans to continue internal testing and looking for ways of reducing CO_2 emissions during product use, and we will incorporate the results of these activities into suggestions for customers on how to effectively use the energy-saving mode at their sites.

Green Certification and Internal Energy Saving Program: leading by example in creating a low-carbon office

<Ricoh Europe B.V., all Ricoh Group companies in Europe (Europe)>

Ricoh Europe B.V. (RE) and all Ricoh Group companies in Europe have been implementing two internal initiatives to support the Group's new "PPP (pay per page) Green Marketing strategy*," a strategy to provide customers with a solution to reduce their costs and environmental impact.

Under these programs, employees will gain a better understanding of the environmental impact and cost reduction effects of Ricoh products by actually using the excellent energy-saving functions of our copiers, including the optimum equipment layout, energy-saving mode, and double-sided printing for reduced paper consumption.

The first initiative, the Green Certification Project, was launched in May 2009 at all Group companies in Europe. The participating companies evaluate their office equipment usage (covering all office equipment in use, whether Ricoh equipment or not), and determine the total cost of ownership (TCO), including the environmental impact and operating costs. Then a detailed analysis of usage history and TCO is conducted with the use of a consultation tool. Based on the analysis results, participants will find an optimal solution to reduce the number of equipment units in use and minimize their environmental impact, while improving their productivity and usability. The solution developed will be applied in the office to reduce CO_2 emissions and operational costs. A Green Certificate will be issued for the reduction achieved, bearing the signature of the top management of RE. In March 2010, the first Green Office Certificate was awarded to Ricoh Industrie France S.A.S. (RIF). This was followed by the certification of Ricoh Europe (Netherlands) B.V., RE headquarters in Amstelveen, in April. Similar efforts are underway in all Ricoh Group companies.

The second initiative is the Internal Energy Saving Program. An example of this initiative is the four-month project organized by RE headquarters in London, starting in September 2009. Under this project, a survey was conducted on the usage status of energy-saving features of Ricoh's products in use at the headquarters office, in order to obtain ideas for effective use of these features as well as identify issues to be improved. The project was designed to use findings from survey results for enhancing marketing activities, in particular, emphasizing to customers the advantages of Ricoh's energy-saving features.

For the purpose of promoting energy-saving modes, the survey was carried out in two steps: (1) install an electric power meter on units to be surveyed to monitor changes according to operational mode and verify effects of energy-saving modes; (2) conduct employee interview surveys on the use of the energy-saving modes, with reference to the electricity consumption survey results, to seek optimal usage and implement improvements. The electricity consumption survey was conducted at two levels of the energy-saving mode, namely, the Ricoh standard mode (factory default) for the first two months and an increased energy-saving mode for the remaining two months. The results showed a further reduction of approximately 13% in the second half of the period compared to the first.

In order to promote paper usage reduction, another object of the internal project at the London headquarters, measures were taken to promote use of the double-sided printing feature. Specifically, these measures consisted of two elements: (1) take every opportunity to encourage employees to use the double-sided printing function and raise awareness of this issue among them; (2) hold interview sessions for employees who are less aware of the use of the double-sided printing function, in which details of their work methods are discussed so that the energy-saving potential of such functions can be shared.

Also as part of the project, the double-sided printing function was set by default in all units used in the London headquarter office, and use status on these units was monitored. The result showed no remarkable increase in use of the duplex feature, which proved to be credited to employees already possessing high awareness of this issue (average use rate had already reached approximately 70% prior to the survey).

RE will continue these internal improvement initiatives to make use of findings to develop better measures and to provide customers with more effective solutions to support their environmental impact reduction.

* A marketing strategy for Europe based on the Ricoh Group's global strategy: Total Green Office Solution (TGOS).

Tom Wagland, Manager of the Environment Division, RE, checking the usage status of a multifunctional copier in RE headquarters

The first Green Office Certificate, awarded to RFR

We are carrying out activities in cooperation with our customers aiming to reduce environmental impact.

■ Concept

The Ricoh Group believes that the Group should make positive efforts for reducing not only the environmental impact caused by its business activities but also, in cooperation with our customers, the impact generated when our products are used by our customers. Based upon this concept, the Group has upgraded and expanded functions to control energy consumption and the volume of paper used and striven to upgrade the environmental efficiency of our products. We, however, believe it essential that these features are fully utilized so that environmental impact reduction efficiency can be raised even further. Accordingly, we are promoting activities to propose ideas while visualizing the environmental impact caused by use of our products. Such proposals are not limited to those related to the use of Ricoh products. We also introduce and propose various efforts for reducing environmental impact as carried out in Ricoh's offices.

■ Target for Fiscal 2010

◎ Understand how far energy-saving features and double-sided printing are used and improve usage rates.

■ Review of Fiscal 2009

In Japan, active efforts to encourage ideas for raising the usage rate of energy-saving modes at our customer's sites, started by Ricoh Technosystems Co., Ltd. (RTS) in 2008, have continued, mainly by RTS. Also, we use our @Remote maintenance service tool to propose effective ways to use our products. This is done by taking data collected by the environmental impact (CO_2 emissions equivalent) tool when the customer uses our products, and providing them with visual environmental impact data. This proposal-making approach has become a fixed part of our sales activities. We began to make similar proposal-making efforts outside of Japan in 2009. Using @Remote or other tools for the visualization of environmental impact data as in Japan, we proactively make proposals and recommendations to help customers to improve environmental impact reduction at their sites.

■ Future Activities

We will continue activities for raising the use rates of energy-saving modes and double-sided printing functions by customers both inside and outside Japan, while continuing to make efforts to deliver products and services that are even more user and environment-friendly.

Environmental impact reduction activities in cooperation with customers

<Ricoh Group (Global)>

The Ricoh Group supports customers in their reduction of environmental impact through its sales activities in three key areas: (1) offering products/services with less environmental impact, such as recycled copiers, and kitting* products in plants in Japan ("purchasing"); (2) visualizing CO_2 emissions and proposing ways to reduce the environmental impact of the use of Ricoh products as well as offering, through sales subsidiaries, our know-how for environmental impact reduction based on our Group's internal efforts and experience ("use"); and (3) offering an end-of-life product and packaging recovery service to achieve effective use of resources and reduce environmental impact ("returning for recycling").

* Products are shipped from plants in Japan after being customized with options ordered by customers, and delivered directly to them.

Products and services that support customers in their efforts to reduce environmental impact (TGOS[1])

Customers' activities	Customers seek to:	Ricoh's products/services and solutions
Purchasing	Select environmentally friendly products	• Equipment with high energy-saving features, recycled MFP[2], biomass toner • Resource-recirculating eco-packaging to reduce packaging materials
	Centrally manage data on electricity consumption and paper use	• @Remote for visualized data on equipment usage and resultant amount of CO_2 emissions produced
Use	Reduce amount of paper used	• Double-sided printing, scan-to email or folders, paperless facsimiles • Digital on-demand printing to reduce inventory of printed materials
	Reduce electricity consumption	• Energy-saving modes
Returning for recycling	Recycle used products	• Collection of used toner containers and ink cartridges for recycling • Collection of used units for recycling

1. Total green office solution. See pages 51 and 52.
2. Multifunction printer

Supporting sustainable environmental management of our customers through the Total Green Office Solution (TGOS)

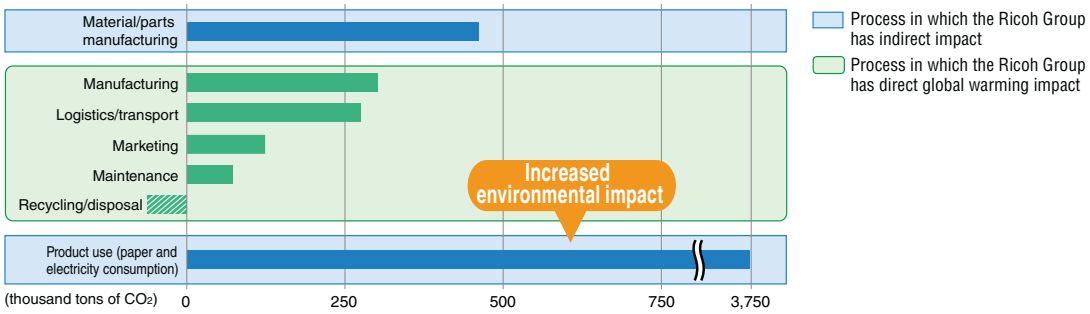
<Ricoh Group (Global)>

Our assessment of the impact of our products on global warming shows that more greenhouse gases (GHG) are emitted from energy consumption and paper use as a result of product use by customers than by Ricoh Group manufacturing operations. Therefore it is essential that we help our customers to efficiently control paper use and reduce electricity consumption of equipment while it is in use.

The sales and service divisions of the Ricoh Group share their experience in sustainable environmental management activities with customers around the world to help them establish their own systems. They do this at points of customer contact, such as when making sales proposals and when negotiating or closing sales contracts. With these activities, which are called the Total Green Office Solution (TGOS), we assess how customers use our office equipment and use the assessment results to support customer efforts to simultaneously reduce the Total Cost of Ownership (TCO) and the Total Environmental impact of Ownership (TEiO)* through improved energy efficiency and reduced paper consumption. Specific solution proposals under TGOS include the replacement of multiple existing printers and fax machines with a single MFP to reduce the number of document devices as well as increased use of energy-saving mode and double-sided printing. Companies using Ricoh products, also benefit from our monthly usage reporting service, which allows customers to easily monitor CO_2 emissions and paper consumption, and in turn make continuous progress toward their reduction.

* In the Japanese market we offer solutions for reducing TEiO as an extension of TGOS.

CO_2 emissions over the lifecycle of Ricoh products



Green Partner Get-together and CO_2 offset program

<Ricoh Hong Kong Limited (Hong Kong)>

Ricoh Hong Kong (RHK) held a Green Partner Get-together on July 11, 2009 that was attended by 16 guests from 12 corporate customers. During the meeting, the guests learned about Ricoh's TGOS concept and RHK's offset program*. The guest speaker from the Leo Group, an RHK MA customer talked about how companies in the group had reduced carbon emissions from their offices. After the get-together, a green tour was conducted to give the guests a demonstration of Ricoh products and services in the real office settings at RHK.

* A tree planting program running since December 2008 to support customer CO_2 emission reduction, in which RHK plants a tree every time a customer prints 100,000 pages using a Ricoh product.

@Remote usage reporting service to make customer CO_2 emissions visible

<Ricoh Group (Global)>

To encourage customers to increase the use of the environmental impact reduction features of Ricoh products, we offer a service that assesses customer office equipment usage, and visualizes and presents possible CO_2 reduction solutions. In this usage reporting service, customers can receive information regarding their electricity consumption and paper use and the corresponding CO_2 emissions produced. This calculation is based on data collected through @Remote*, the Group's original remote support service. We are also promoting activities to propose effective ways to use product features and solutions obtained through our efforts at the Group's offices, referring to this data.

* With this system, we carry out remote diagnosis of use of equipment through telecommunication lines including over the Internet to prevent accidents and automatically deliver toner. This system also allows us to monitor CO_2 emissions.
(http://www.ricoh.com/remote/)

Ricoh Canada, Inc. (RCI) supports the holding of sustainable Olympic Games

<Ricoh Canada, IKON Canada, Ricoh Americas Corporation and IKON USA (Canada)>

The 2010 Olympic and Paralympic Winter Games were held in February 2010 as a sustainable Olympics with a focus on the environment, society and the economy. In the IT area, the Games aimed to send accurate information to 15,000 media outlets all over the world with the minimum environmental impact. In support of this idea, Ricoh Canada (RCI) cooperated as an official supporter to reduce the environmental impact caused by the copiers and printers used in the Olympic Games.

RCI and other Ricoh group companies in North America started working on this project in 2006, making recommendations to the Vancouver Organizing Committee (VANOC), including advising on the efficient location of equipment, constructing a system and designing a post-Olympic Games product-recycling program. In preparation for the Olympics, they installed equipment and established operation and management programs. About 2,300 pieces of equipment, including MFPs, printers and fax machines were installed, and these produced about 17 million copies during the Games (including pre-Games). During the Olympic Games, about 250 support engineers were engaged in on-site maintenance work at the three Olympic venues to maintain the information system that instantly transmitted the excitement of the Olympics to the world. RCI managed to hold down CO_2 emissions to less than 2.7 kg per week, by using the remote monitoring system @Remote for the maintenance of I/O equipment and the control of paper and energy consumption.

For this project, RCI was awarded a "Sustainability Star," a prize given to innovative activities contributing to the holding of a sustainable Olympic Games. VANOC evaluated the reductions achieved by RCI highly, and will use the technology to create a baseline for output control for future Olympic Games.

TOPIC

Offering the Total Green Office Solution (TGOS) globally

Our TGOS approach for environmental impact reduction helps a municipal government office go carbon neutral.

At Ricoh Nederland B.V. (RNL), a sales subsidiary in Europe, a series of TGOS-based sales activities ranging from assessing office equipment usage and proposing solutions to implementation and reporting have been well-received by customers. One major example of this was evident when the company won a contract to replace the office equipment of a Dutch municipal government over the period from fiscal 2007 to 2009. With 14 departments and approximately 8,000 staff members, the City aims to become completely carbon neutral by 2010. Reflecting this, the selection criteria for the contract placed a priority on the quality of the supplier, including its vision of sustainability, placing more emphasis on this (40%) than on either price (35%) or after-sales service (15%). RNL stood out among the six bidders not only for its proposals for improving operational efficiency and reducing costs through equipment replacement but also for its consultative proposal to improve the prospective customer's print environment by, for example, reducing their TCO and CO_2 emissions by the use of Ricoh products.

By implementing RNL's proposed solution, the municipal government has consolidated its fleet of printing devices of varying types and models, which had previously been managed in a fragmented manner by each department. These consolidated machines are now centrally managed using @Remote, which has resulted in a reduction in related administrative work and costs, and ultimately provided greater operational efficiency.

City Hall in the Netherlands, where Ricoh's office equipment was introduced

Quantitatively, the customer can expect the following benefits from the introduction of Ricoh products:

Reduction in energy and resource use and cost, expected to be achieved by introduction of Ricoh's equipment

Number of machines in use	735, down from 1,970 (reduction of 62.7%)
TCO reduction (for five years)	2.7 million euros (reduction of 32.8%)
Annual power consumption reduction	77,000 kWh (reduction of 75.3%) or 33.3 tons- CO_2eq
Annual paper consumption reduction	4.88 million pages (reduction by 10.3%) or 87.7 tons-CO_2eq

The Ricoh Group is working to reduce CO_2 emissions and costs from transportation by global optimization of SCM.

■ Concept

To achieve a sustainable society, one of the most important issues is to reduce CO_2 emissions from logistics. For this purpose, it is essential to optimize efficiency of logistics by minimizing wasteful operations and wastage related to transportation generated in supply chains. In our approach to this challenge, visual presentation of logistical flows are provided, data linking logistical costs and CO_2 emissions obtained, bottlenecks identified, and improvement measures undertaken. To strengthen the effects of these improvement efforts, we work to ensure that activities and related information are shared across the company. Specifically, giving priority to such issues as direct delivery to customers, modal shifts, and cargo-carrying efficiency, we are making concerted efforts at all the divisions involved, from product planning to customer contacts, aiming to further reduce environmental impact.

■ Target for Fiscal 2010

◎ Reduce CO_2 emissions from logistics by 1% or more over the previous year (per ton kilometer).

■ Review of Fiscal 2009

We established a system to obtain data on CO_2 emissions during transportation in Japan from transport information, and put this system into operation in fiscal 2006. In fiscal 2008, the area for visualization using the system was expanded to cover transportation among bases such as ports and airports in different countries. As a result, logistical information between bases is linked with information on CO_2 emissions and we can now deal with cost reductions and CO_2 emissions reductions within the same framework, which helped accelerate improvement. In fiscal 2009, to improve information accuracy, we developed a segmented data collection system, and collected more accurate data on truck transport. As a result of improvements based on measures—including the new system—CO_2 emissions in fiscal 2009 decreased by 2.6% by the ton kilometer compared to the previous fiscal year.

■ Future Activities

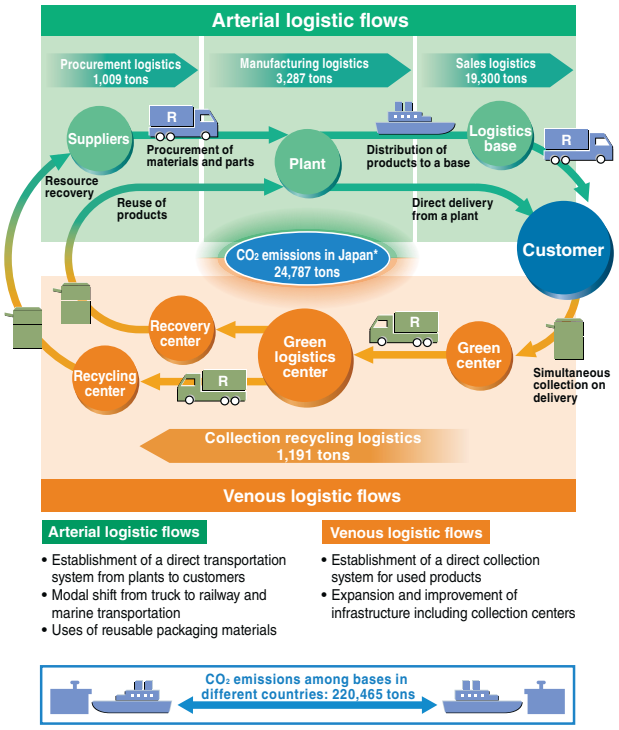
We will not only promote direct delivery to each customer and modal shifts but also use collected data for improvements that are expected to lead to higher logistics efficiency, in order to realize the best conditions for the entire Group on a global scale. To collect data on CO_2 emissions at global bases, efforts will be promoted to collect information in Ricoh's business area outside Japan.

Efforts for reducing environmental impact via the supply chain as a whole

<Ricoh Group (Global)>

The Ricoh Group is promoting SCM (Supply Chain Management) in logistics for procurement, manufacturing, and sales, aiming to reduce CO_2 emissions and costs. The Ricoh Group's manufacturing bases are now in the Americas, Europe, China, and other Asia Pacific countries, which has caused year-to-year increases in transportation among global production sites. For example, the transportation volume of products and parts from China to Japan requires 400 40-feet containers every month. About the same number of containers are transported to the Americas and Europe. Efficiency improvement in logistics is an important issue in promoting business on a global scale. The Ricoh Group surveys all processes and promotes efforts on a global scale, including the improvement of cargo-carrying efficiency through reviewing packaging materials and mixed packing, modal shifts among warehouses, direct deliveries to customers, and by optimizing transportation routes through the introduction of the milk run system. The Group thus aims to reduce wastage related to space, transportation, trans-shipment, and packaging materials.

CO_2 emissions in logistics (FY 2009, Ricoh)



*CO_2 emissions in Japan (fiscal 2009 results) have been calculated in compliance with the Energy Saving Law.

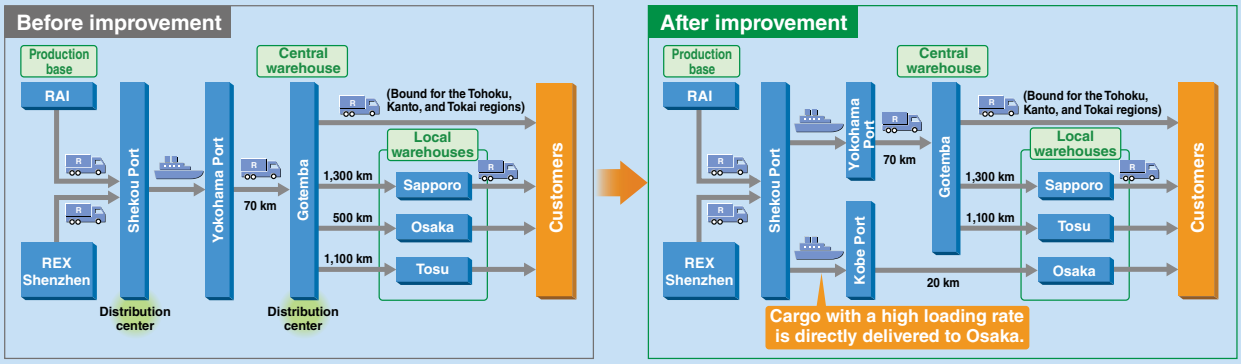
Improvement of logistics processes through direct delivery from China to Osaka

<Ricoh Group (Global)>

Traditionally, all Ricoh products manufactured in Shenzhen, China, for the Japanese market were first sent to our central hub warehouse in Hong Kong, then shipped to Yokohama, one of Japan's major port cities, where they were unloaded. They were then transported to Ricoh's central warehouse in Gotemba, and delivered by truck to their final destinations—local warehouses across Japan. This conventional system, with hub ports on both the export and import sides, sought the optimal use of cargo capacity. Under this system, all the distribution routes in Japan were designed to go through the hub facilities, meaning even products to be sold in western Japan, the quantity of which is sufficient for separate shipping, were transported all the way from Yokohama, entailing long-haul trucking. To address this downside, in fiscal 2009 a new system was launched that bypasses the hub ports and the central warehouse in its logistics routes. Products bound for western Japan are now shipped from Hong Kong directly to a warehouse in Osaka via the port of Kobe, except when the transport batch size is not enough to fill a 40-foot container (in which case the cargo is consolidated with other products bound for other areas in Japan and transported via the conventional route). As of fiscal 2009, direct shipping was adopted for 64.6% of the products finally received at the warehouse in Osaka. Over the year, this has cut costs by about 13.3 million yen and reduced CO_2 emissions by some 62.9 tons.

* Similarly, the Ricoh Group has successfully improved the transportation routes for products shipped from Japan since fiscal 2008. For details, please visit: http://www.ricoh.com/environment/office/logistics/01_01.html

Direct delivery from China to Osaka



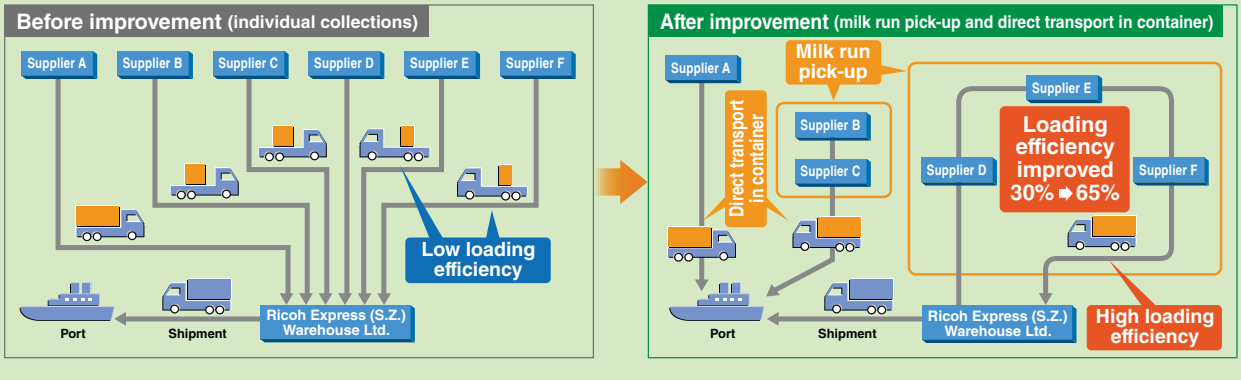
* RAI : Ricoh Asia Industry; REX : Ricoh Elemex

Introducing "milk run" method for parts collection to optimize logistics

<Ricoh Express (S.Z.) Warehouse Ltd., Ricoh Logistics System Co., Ltd. (China, Japan)>

Ricoh Express (S.Z.) Warehouse Ltd., based in China, delivers parts, mainly from suppliers in Southern China to Ricoh Service Parts Centers in Hong Kong, Shanghai, Japan, North America, and Europe. Previously, Ricoh Express collected parts from different suppliers separately, causing low loading efficiency and needlessly long total travel distances for the vehicles. To address this issue, Ricoh Express introduced the "milk run" method, by which one truck travels around to multiple suppliers to pick up cargo. To operate the milk run system effectively, the company developed a system to optimize vehicle routing, by checking shipment volumes with suppliers prior to collection, by telephone or dedicated network. This new initiative more than doubled loading efficiency, from 30% to 65%, and shortened total travel distances for transportation. In addition, for large cargo with a sufficiently high loading rate, the company began to operate direct transportation from suppliers to the port—without reloading at Ricoh Express warehouses. These efforts led to an annual reduction of 310 tons, or 35%, in CO_2 emissions.

Improvement of loading efficiency by introducing milk run method

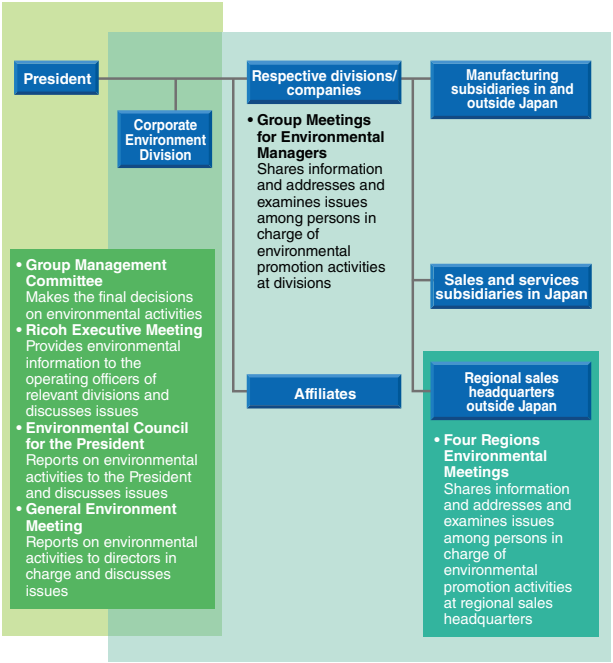


Under the environmental management system to promote our sustainable environmental management, decision-making efforts for environmental measures and those for business operations are inseparable.

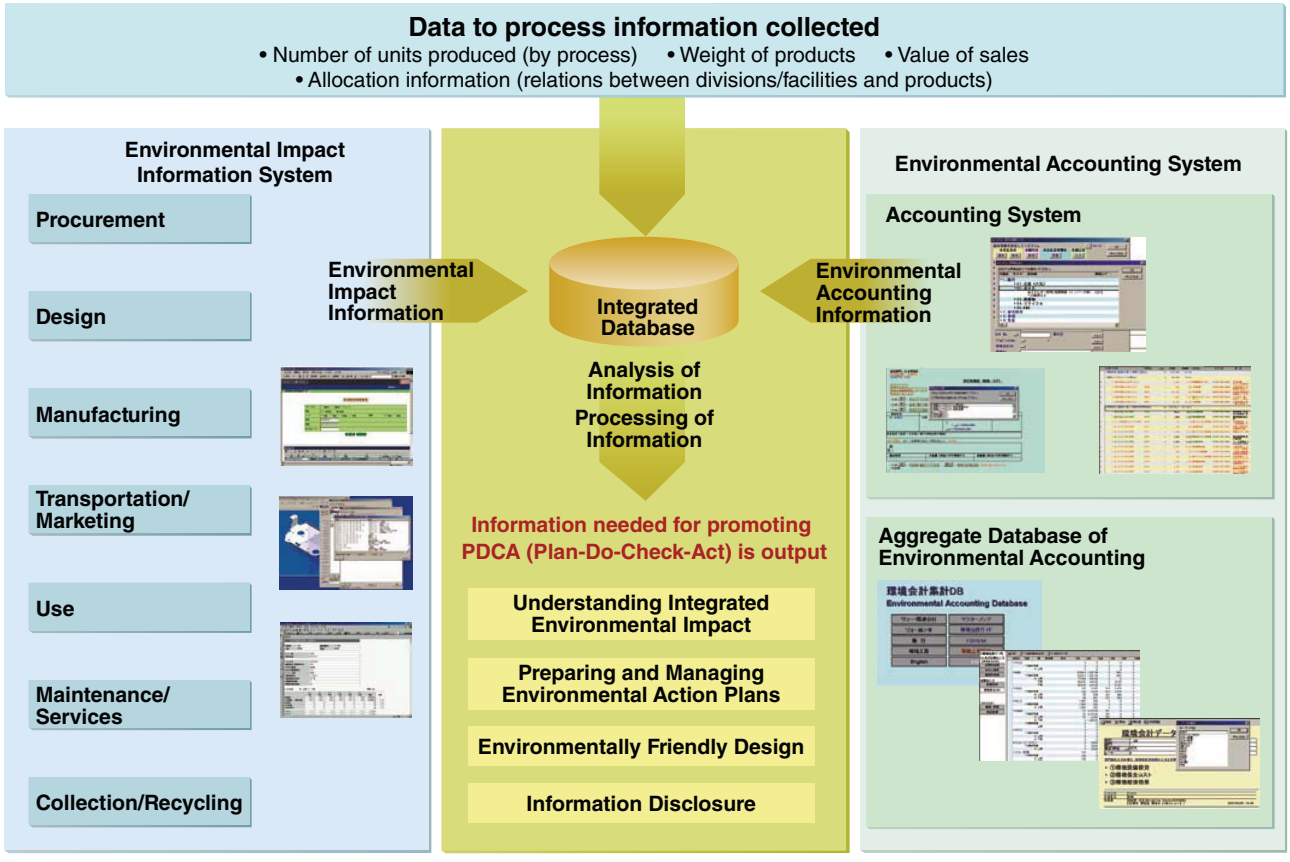
To realize sustainable environmental management, it is essential to pursue environmental conservation and business operations under a united decision-making scheme instead of implementing two separate, sometimes incompatible missions. The Ricoh Group promotes sustainable environmental management by incorporating the environmental management system (EMS) as an essential process of each business activity. We established a system to reflect the environmental action plan set by the management in the goals of respective organizations and provide feedback on the results of their actions to management. Under the system, the Group as a whole, and each of the organizations, promotes the plan-do-check-act (PDCA) cycle. In addition, we operate the Sustainable Environmental Management Information System, designed to identify and promote the progress of sustainable environmental management. The collected data are processed and analyzed to identify the integrated environmental impact[1] of overall operations; draw up environmental action plans[2]; support decision-making in sustainable environmental management; promote environmentally-friendly design; improve activities by each division; process Corporate Environmental Accounting[3]; and disclose information to the public.

1. See page 59. 2. See pages 19 to 20. 3. See page 59.

Chart of Ricoh Group's sustainable environmental management system



Sustainable Environmental Management Information System



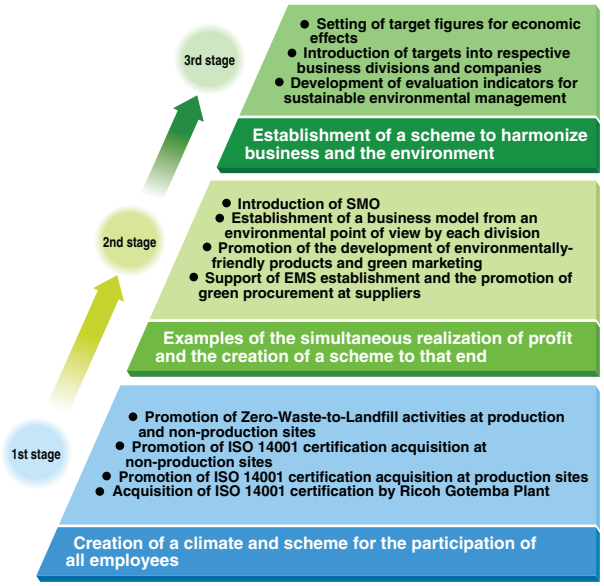
* For more information, visit http://www.ricoh.com/environment/base/02.html

Upgrading the level of the environmental management system

The Ricoh Group first promoted the acquisition of ISO 14001 certification for each business site to fortify its environmental management system (EMS). Starting with Ricoh Gotemba Plant, which received ISO/DIS 14001 certification in 1995, all major Ricoh production sites worldwide were ISO 14001 certified as of March 2000. Then in 2001, the sales group in Japan as a whole gained ISO 14001 certification. Sales subsidiaries other than those in Japan are also making every effort to acquire ISO 14001 certification.
The Group has thus promoted the creation of a climate for sustainable environmental management by all employees through the acquisition of ISO 14001 certification. In addition, in February 2007, Ricoh and its sales subsidiaries in Japan acquired integrated ISO 14001 certification, aiming to harmonize business activities and the environment and provide leadership to all business units. Based on the 16th Environmental Action Plan commencing in fiscal 2008, each business division has set its own targets and is implementing a variety of measures to meet them. In fiscal 2009, our sales-related EMS was expanded to include Ricoh Technosystems Co., Ltd. (RTS) and Ricoh IT Solutions Co., Ltd. As a result, the integrated certification mentioned above is held by approximately 37,000 employees of Group companies in Japan. Outside of Japan, Ricoh India Ltd. in the Asia-Pacific region has also obtained the ISO 14001 certification.

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

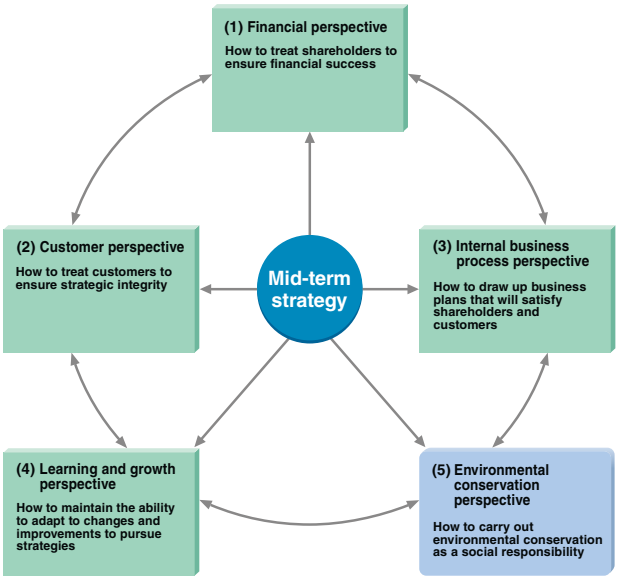
Improvement in the EMS activity level



Strategic Management by Objectives

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

SMO of the Ricoh Group



Green purchasing

<Ricoh Group (Global)>

The Ricoh Group is promoting green purchasing, which promotes the active use of environmentally-friendly products, as a user of paper, stationery, office equipment, etc. In April 2002, the Ricoh Group formulated Green Purchasing Guidelines in Japan for eight categories: paper, stationery, office equipment, OA equipment, home appliances, work gloves, work uniforms, and lighting. Production and non-production sites outside of Japan are also promoting green purchasing by establishing their own standards.

Participatory approach by all employees

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

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

Risk management

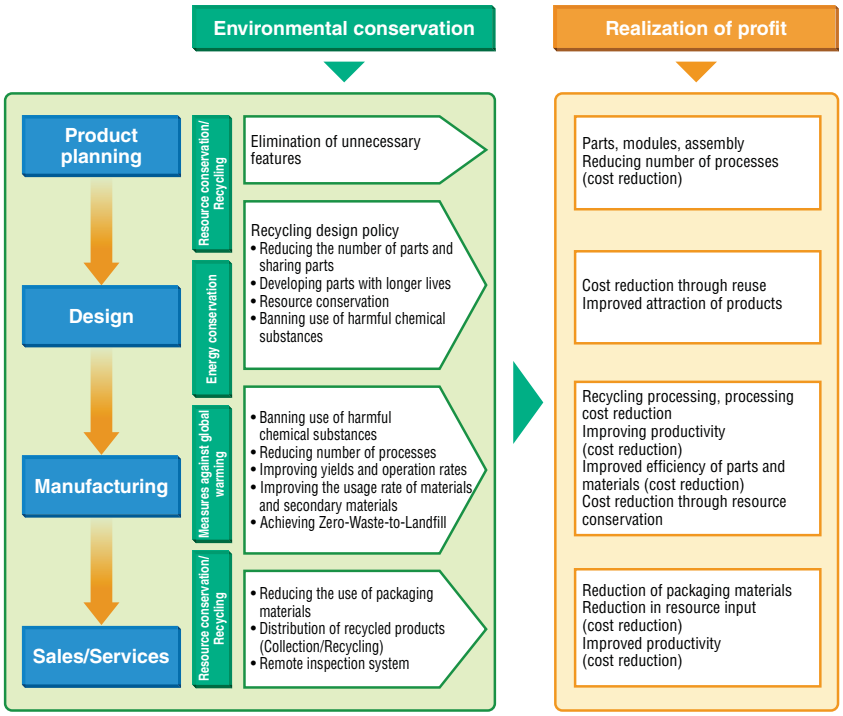
The Ricoh Group carries out risk management as an inner control function using the PDCA cycle based on the Ricoh Group's Total Risk Management Basic Rules. For initial measures taken in case of crises*, the Rules clearly define the sections in charge and reporting levels according to the different crisis categories. In line with the Rules, pertinent incidents are reported to the president and relevant officers, then necessary measures are taken based on the president's policies. When an environmental crisis or an incident that seemingly will lead to an environmental crisis occurs, initial actions, including reporting and reception of information, instruction, actions and discussion, will be carried out as indicated in the accompanying flow chart.

* Crisis: an incident with a risk that continues and/or increases in size to the level at which the corporate operation of the Ricoh Group is severely affected.

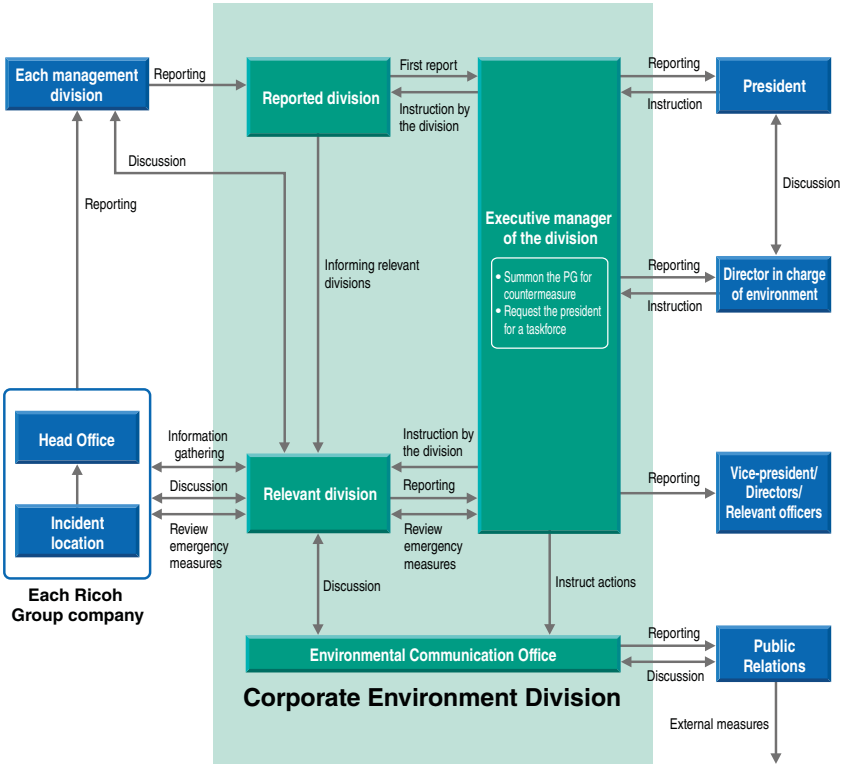
Penalties and fines concerning the environment (Ricoh Group)

	FY 2007	FY 2008	FY 2009
No. of cases	0	0	0
Amount	0	0	0

Sustainable environmental management activities participated in by all employees



Action flow for environmental crises

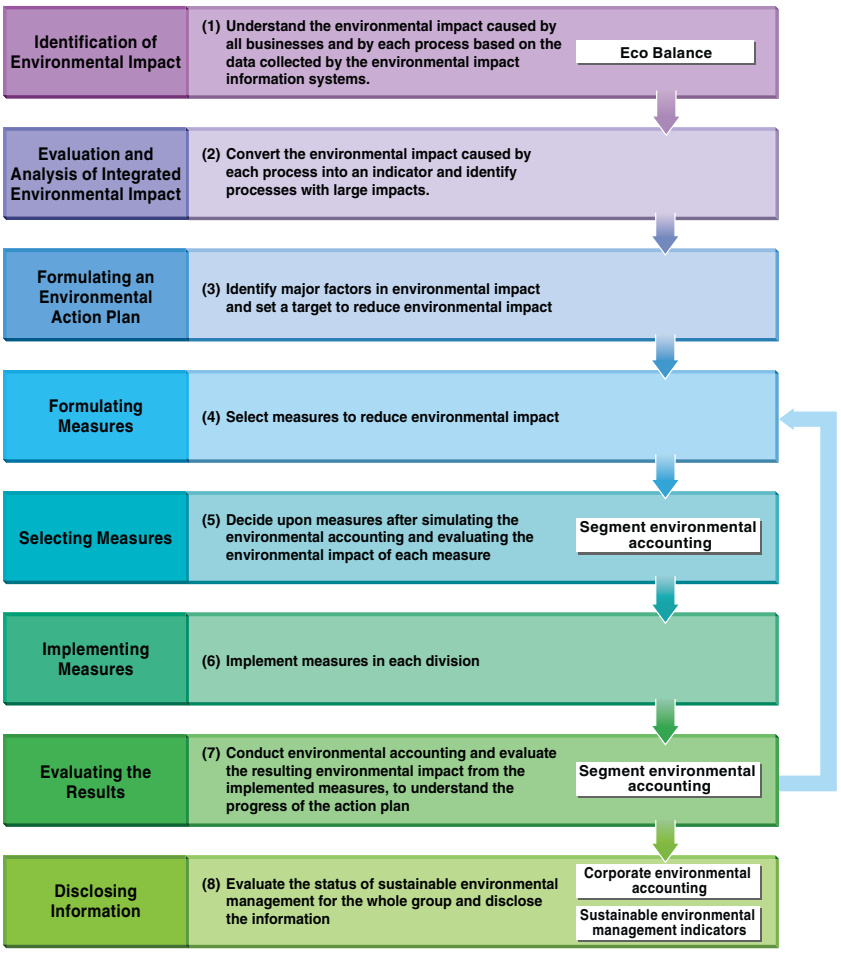


Action plans are mapped out and sustainable environmental management is evaluated using Eco Balance, integrated environmental impact, and environmental accounting as tools.

The Ricoh Group believes that the environmental impact generated by advanced nations must be reduced to one-eighth the fiscal 2000 levels by 2050 (described in the Long-Term Environmental Vision[1]). For our part, we aim to reduce total lifecycle CO_2 emissions by the Group and the input of new resources as well as the impact of chemical substances on the environment by 87.5% (declared in the 2050 Long-Term Environmental Impact Reduction Goal[2]). We pursue these targets by improving the level of sustainable environmental management—that is, by promoting environmental conservation activities that reduce environmental impact and enhance economic effects at the same time. To realize this, an appropriate scheme must be built so that suitable action plans can be mapped out to reduce the environmental impact caused by all our businesses, effective measures can be examined and implemented, and the results can be properly evaluated and disclosed. At the Ricoh Group, Eco Balance[3], integrated environmental impact[4], and environmental accounting[5] serve as tools to operate the PDCA cycle for improvement of sustainable environmental management and for evaluation of action plans, measures and activity results.

1. See page 17. 2. See pages 17, 18. 3. See page 62. 4. See page 59. 5. See page 59.

Eco Balance and integrated environmental impact evaluation flow



Understanding the environmental impact caused by all our businesses using Eco Balance and integrated environmental impact evaluation

The Ricoh Group obtains information on the environmental impact caused by all its businesses and by each process, using Eco Balance[1] and integrated environmental impact[2] as tools, to effectively reduce the environmental impact generated by processes with large environmental impact. First, Eco Balance is prepared based upon input and output data for each process and for each environmentally-sensitive substance. The data are collected by the sustainable environmental management information system[3]. At this stage, however, the significance of the environmental impact generated by each process cannot be compared because each process employs different environmentally-sensitive substances. Therefore, an integrated analysis method is used to convert the total environmental impact caused by business activities—including impact upon human health, depletion of resources, and impact upon ecosystems/biodiversity—into indicators to evaluate the integrated environmental impact and identify processes generating large environmental impact. The Ricoh Group sets environmental action plans[4] based on its evaluation of the integrated environmental impact that is identified by Eco Balance.

1. See page 61. 2. See page 5. 3. See page 55. 4. See pages 19, 20.

Selecting measures by environmental accounting and evaluating activity results

Reducing environmental impact using measures that will lead to the creation of benefits is crucial to promoting sustainable environmental management. The Ricoh Group uses environmental accounting to determine what measures should be taken for what processes and for what operations so that the maximum effect can be obtained. A number of improvement plans to reduce the identified environmental impact are examined in consideration of developments in society and changes in laws/regulations as well as the activities of competitors to improve processes generating large environmental impact identified through evaluation based upon Eco Balance and the integrated environmental impact. Then, using segment environmental accounting, we simulate how much environmental impact is reduced and how much profit is created compared with the costs for each measure, while surveying the results of the individual measures.

Eco Balance of the Ricoh Group

The Ricoh Group introduced the concept of Eco Balance in fiscal 1998 to clarify the environmental impact caused by all its businesses and effectively reduce it. Currently, the Ricoh Group is calculating the integrated environmental impact using EPS, which is an integrated analysis method developed by IVL Swedish Environmental Research Institute Ltd. We adopted EPS after evaluating various methods used in Japan and/or overseas because we found that its characteristics agree with the Ricoh Group's ideas about environmental impact reduced by the collection of resources and the Comet Circle*, Ricoh's original concept aimed at establishing a sustainable society. We have mapped out environmental action plans based upon the concept of Eco Balance since fiscal 2002 and have applied the concept in the formulation of environmental goals that take a longer perspective since fiscal 2005. * See page 15.

Ricoh Group's Environmental Accounting

The Ricoh Group disclosed its environmental accounting for the first time in 1999. Subsequently, the Group has introduced corporate environmental accounting to determine the status of sustainable environmental management and disclose related information, as well as segment environmental accounting, that is used to prepare environmental action plans, select measures, and verify achievements. Thus efforts are being made to establish environmental accounting as a tool for sustainable environmental management.

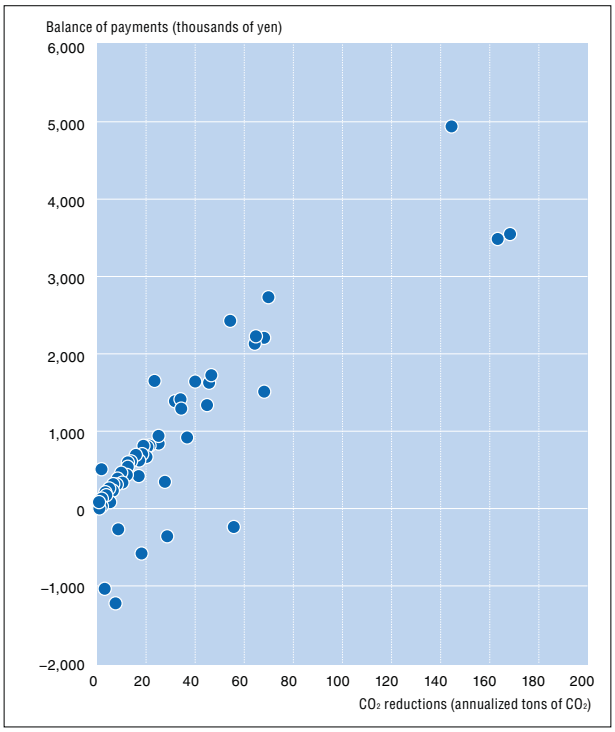
● Corporate environmental accounting

The Ricoh Group calculates and announces the cost spent in its business activities for environmental conservation, as well as the conservation and economic effects, as quantitatively as possible. The Ricoh Group prepares such data in compliance with the Environmental Accounting Guidelines 2005—set by the Japanese Ministry of the Environment—by taking the necessary portion from the Eco Balance data and calculating the cost and effect (in quantity and monetary value) of its environmental conservation activities based on its own formulas and indicators. In fiscal 2007, the Group started disclosing its environmental impact from a product lifecycle perspective, in addition to direct environmental impact (i.e., environmental impact generated at business sites). See page 64.

● Segment environmental accounting

This is an environmental accounting tool to forecast the costs and environmental conservation/economic effects of individual investment activities and projects for environmental conservation from among all processes of operations and to evaluate their results, in order to judge the effectiveness of respective measures.

CO_2 reductions and economic effects (based on segment environmental accounting)



* For environment accounting reports for fiscal 1998 to 2008, please visit our Web page at: http://www.ricoh.com/environment/account/index.html

Eco Balance
Eco Balance means the preparation of a list of input and output data on environmental impact to identify, quantitatively measure, and report environmental impact caused by companies; or such a list itself. It is based upon the same concept as LCA, and direct environmental impact as well as indirect environmental impact is calculated.

Integrated environmental impact
This is an integrated indicator shown in ELUs (Environmental Load Units), incorporating various types of environmental impact caused by environmental load. Substances that put a load on the environment cause various phenomena including global warming and air pollution, which negatively affect the ecosystem, biodiversity and human health. In addition to these, the depletion of resources is taken into consideration, and all these factors are incorporated into one single indicator that represents the significance of environmental impact overall. Determining the environmental load caused by all our businesses and calculating the integrated environmental impact allow us to formulate specific plans to reduce them. In calculation, we apply the EPS (Environment Priority Strategies for Product Design), a method developed by IVL Swedish Environmental Research Institute Ltd, to allow us to convert the results into monetary values (1 ELU = 1 Euro).

Fiscal 2009 Review of environmental accounting

Environmental accounting is designed to present the costs incurred for environmental conservation activities during a given period in comparison to the resulting environmental and economic benefits. The scope of environmental accounting covers the entire product lifecycle, from the procuring of raw materials, the production and use of the products to recycling and final disposal. In the Fiscal 2009 review of environmental accounting, we re-evaluated the method of calculation.

When gathering data for the fiscal 2009 environmental accounting, we reviewed the method for gathering information on environment-related capital spending as well as the recycling business (in Japan) that has an especially large impact. Until then, we had booked only categories directly related to environmental preservation (such as collection and processing costs) as environmental costs. However, starting in fiscal 2009, we included indirect costs incurred in the recycling business. In capital spending related costs, environment-related capital spending as well as the depreciation costs for environmental investment (the number within the categories for each environmental cost) both shrank as a result of the improved accuracy of identifying environment-related capital spending.

When we look at the overall trends of the Ricoh Group, gross profit on sales and total environmental impact both declined due to economic changes in Japan and overseas. Therefore, the Eco Index (the ratio of the gross profit on sales to the total environmental impact) recovered to the previous year's levels (See graph (2)).

The Ratio of Eco Profit, an indicator of the cost effectiveness of sustainable environmental management activities, as well as the Ratio of Eco Effect, an indicator that takes into account social cost reduction values, declined further (See graph (1)).

When we look at the fiscal 2009 corporate environmental accounting data*, environmental investments shrank by roughly 30% compared with the previous year, but this is due to the improved accuracy of environment-related capital spending figures, as mentioned earlier. Environmental costs for recycling in both the upstream and downstream processes increased by roughly 20% compared with the previous year.

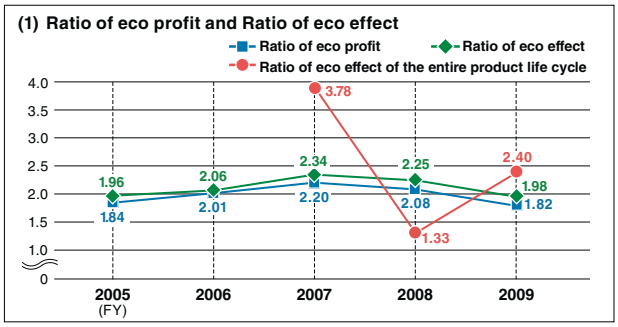
This was, however, a result of reviewing recycling-related environmental preservation costs. The economic effects turned positive as a result of reflecting a decrease in production due to the world economic slump, cost cuts, and decreases in utility costs and costs for waste disposal.

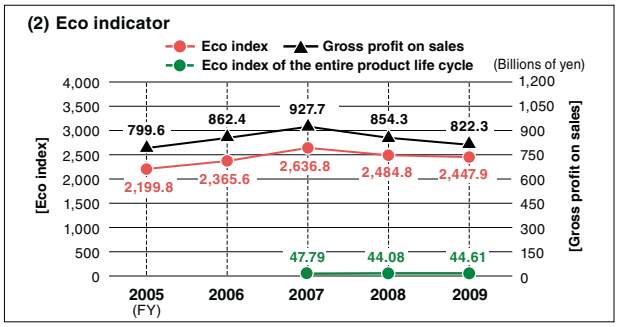
Recycling related costs, which make up a large portion of economic effects, moved steadily. As a result, total economic effects increased slightly.

Overall, recycling-related items, which make up a majority of costs and economic effects, were relatively strong despite the world economic slump and can be considered to be well-reflected in the economic effects. *See pages 63 and 64.

* Graph (1) shows ratio of eco profit, ratio of eco effect, and ratio of eco effect of the entire product life cycle. Graph (2) shows eco index, gross profit on sales, and eco index of the entire product life cycle.

Changes in the Ricoh Group's sustainable environmental management indicators





The Ricoh Group's sustainable environmental management indicators (fiscal 2009)	Results in fiscal 2009	Calculation formula
REP: Ratio of Eco Profit	1.82	Total economic benefit (36.70) / Total environmental conservation cost (20.17)
REE: Ratio of Eco Effect	1.98	[Total economic benefit (36.70) + Social cost reduction values (0.38 + 2.93)] / Total environmental conservation cost (20.17)
Eco Index	2,447.9	Gross profit on sales (822.3) / Total environmental impact (33,592.6) × 10^5
RPS: Ratio of Profit to Social Cost	172.8	Gross profit on sales (822.3) / Total social cost (4.76)

* Unit: Billions of yen.

Sustainable environmental management indicators of the entire product lifecycle (fiscal 2009)	Results in fiscal 2009	Calculation formula
REP: Ratio of Eco Profit	1.82	Total economic benefit (36.70) / Total environmental conservation cost (20.17)
REE: Ratio of Eco Effect	2.40	[Total economic benefit (36.70) + Social cost reduction values (8.73 + 2.93)] / Total environmental conservation cost (20.17)
Eco Index	44.6	Gross profit on sales (822.3) / Total environmental impact (1,843,264.5) × 10^5
RPS: Ratio of Profit to Social Cost	3.1	Gross profit on sales (822.3) / Total social cost (261.2)

* Unit: Billions of yen.

■ Review of Fiscal 2009

The integrated environmental impact in fiscal 2009 decreased by 4.9% compared with the previous year. The decrease is attributable to a 3.6% year-on-year decline in the Ricoh Group's sales, largely impacted by the global recession. As the bar graph on the right shows, the environmental impact declined in almost all stages. Our 16th Environmental Action Plan (fiscal 2008- 2010) calls for strategies to encourage greater use at the customer side of energy-saving and duplex-copying functions in addition to the conventional measures, such as those to increase resource recycling and strengthen development of environmental technologies. Our strategies are steadily producing results. We are also promoting activities that visualize the environmental impact caused by use of our products. For example, during the paper-use phase, we use Ricoh's original remote support service to promote paper-reduction activities. During this activity, we analyze customer paper-reduction levels and apply analysis data from more than 300,000 multifunctional digital copiers to the model to estimate the amount of paper reduced.

(Dealing with new business and developing countries)

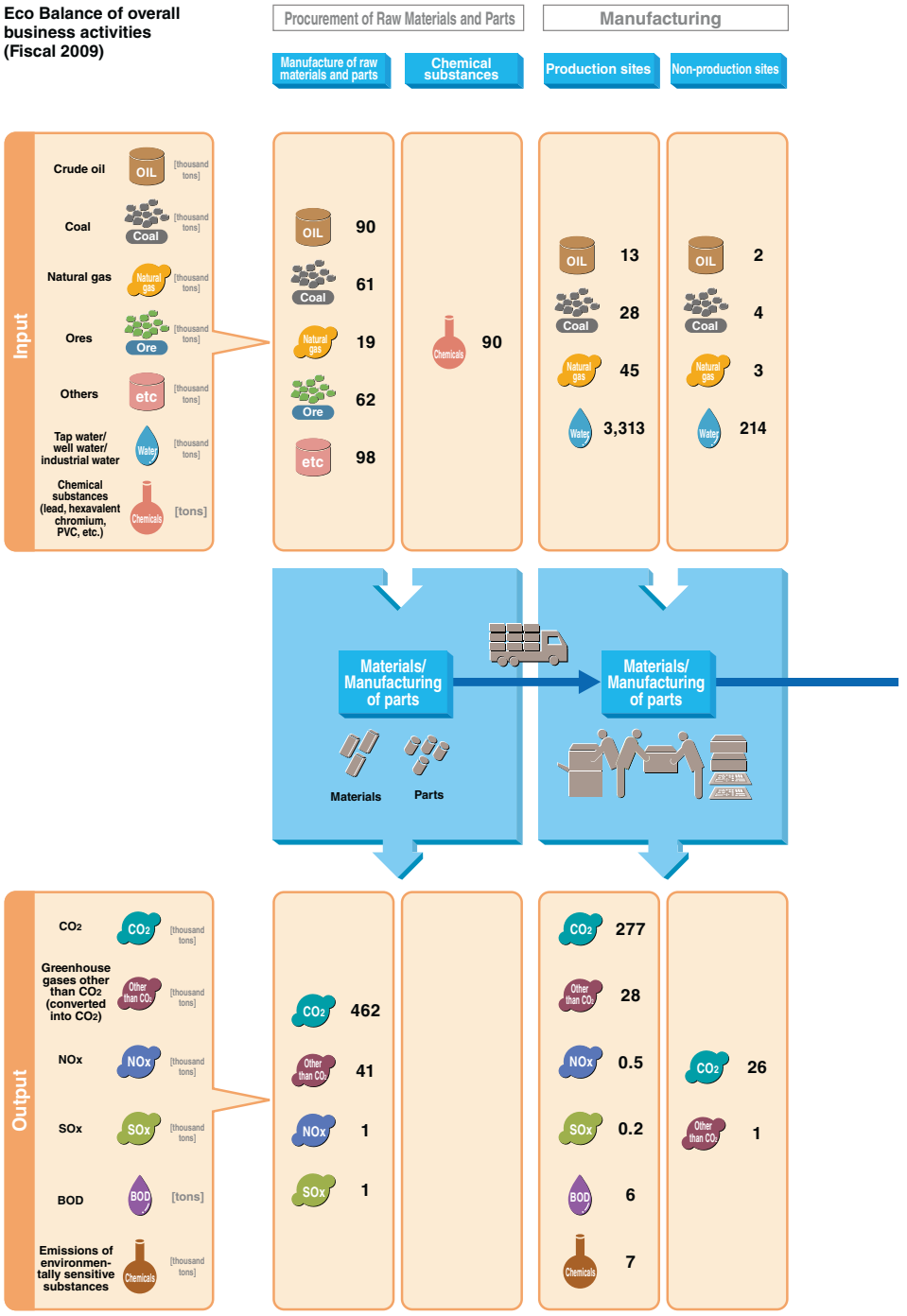
The "Eco Balance of overall business activities" here includes data for new businesses, such as those that were acquired through M&A in and after fiscal 2000, and businesses that are targeted to emerging nations and developing countries. It covers the environmental impact of the entire group. On the other hand, in the graph "Changes in Integrated Environmental Impact (Operations in advanced nations)" on Page 5, environmental impact through new businesses, emerging countries and developing nations has been eliminated in order to allow comparison with fiscal 2000.

*** New Evaluation Method for LCA Data**

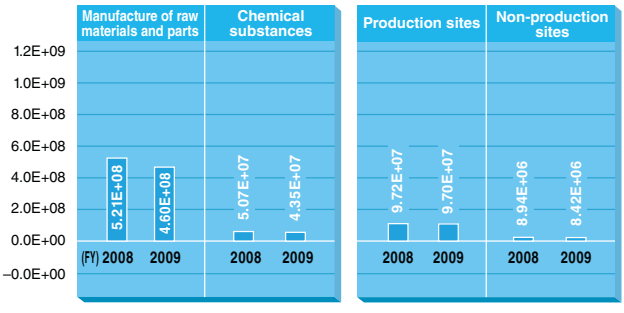
● LCA Data

Concerning the inventory analysis data, we now use data prepared by Mizuho Information & Research Institute, Inc. based on the LCA database (fiscal 2006 version 2) published by the Life Cycle Assessment Society of Japan (JLCA). Mizuho Information & Research Institute organized the data by expanding the system's boundaries and supplementing missing data.

Eco Balance of overall business activities (Fiscal 2009)

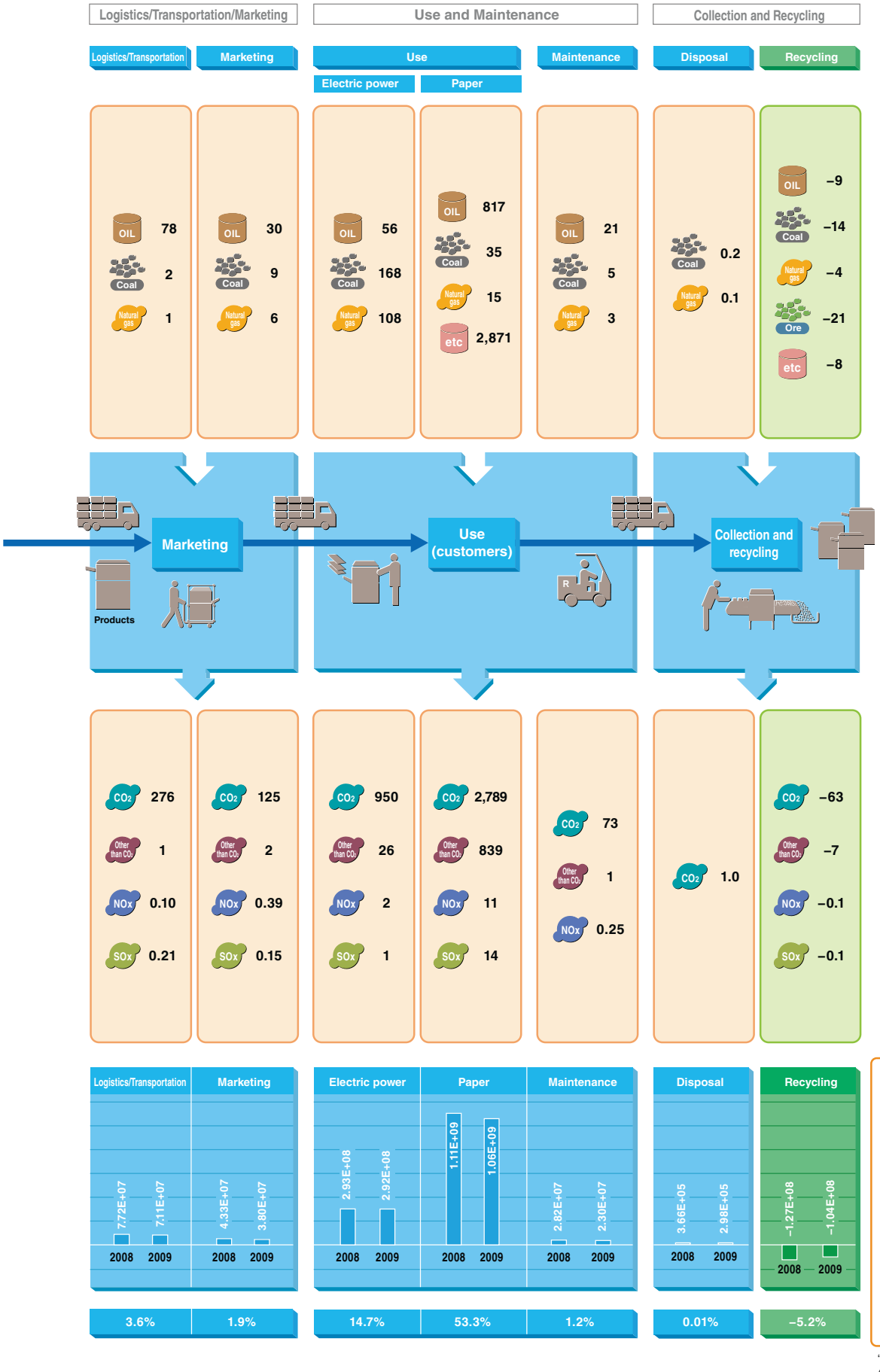


Figures integrating environmental impact of business activities
Unit: ELU



Ratio of integrated environmental impact (Fiscal 2009)

23.1%	2.42%	4.9%	0.4%



"E+n" means "× 10^n"
(Example) 1.45E+08 = 1.45 × 10^8

Ricoh Group's corporate environmental accounting in fiscal 2009

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

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

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

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

Cost unit: ¥100 million (Exchange rate: $1 = ¥92.91 €1 = ¥131.21)

Item	Costs			Economic Benefits		
	Environmental Investments	Environmental Costs	Main Costs	Monetary Effects	Category	Item
Business area costs	2.9	12.7	Pollution prevention cost ..... 1.3 Global environmental conservation cost ..... 2.3 Resource circulation cost 9.1	28.3	a1	Energy savings and improved waste processing efficiency
				39.1	b	Contribution to value-added production
				10.1	c	Avoidance of risk in restoring environments and avoidance of lawsuits
Upstream/ Downstream costs	0.0	125.2	Cost of collecting products, turning recycled materials into saleable products, and so forth	235.5	a1	Sales of recycled products, etc.
				[21.1]	S	Reduction in society's waste disposal cost
Administration costs	0.5	34.4	Cost to establish and maintain environmental management system; costs of preparing environmental reports and advertisements	10.6	b	Effects of media coverage, environmental education and environmental advertisements
Research and development costs	2.0	26.9	Research and development costs for environmental impact reduction	43.5	a2	Contribution to gross margin through environmental research and development
				[8.2]	S	Reduction in user's electricity expenses thanks to an improved energy saving function and product performance
Social activity costs	0.0	0.9	Cost for nature conservation and green landscaping outside business sites	—	—	None
Environmental remediation costs	0.3	0.6	Costs of restoring soil and environment-related reconciliation			
Other costs	0.0	1.2	Other costs for environmental conservation			
Total	5.7	201.7		367.0	Sum of a1: 263.7, a2: 43.5, b: 49.7, and c: 10.1	
				29.3	Total S's	

a1: Substantial effect
a2: Estimated substantial effect
b: Secondary effect
c: Incidental effect
S: Social effect
(Customer benefits)

- **Environmental investment rate: 0.9%**
  [= Environmental investment (5.7)/Total investment (669)]
- **Environmental R&D cost rate: 2.4%**
  [= Environmental R&D cost (26.9)/Total R&D cost (1,098)]

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

● Substantial effect (a1)
This means economic benefits that fall into either of the following two cases:

■ Cash or cash equivalent is received as a benefit. This corresponds to "realized gain" in financial accounting.

■ The amount of savings in such costs that would have occurred if environmental conservation activities had not been conducted. This amount is not recognized in financial accounting.

● Estimated substantial effect (a2)
Substantial contributions to sales or profits whose value cannot be measured without estimation. They include improving the environmental performance of a product, which leads to an increase in sales or profit.

● Secondary effect (b)
The expected amount of contribution in the case that expenditure on environmental conservation activities is assumed to have contributed to profits for the Ricoh Group. If environmental conservation costs are assumed to be costs that are indispensable for the Ricoh Group to conduct its operations, for example, it can be safely said that such costs contribute to profit in some form. In practice, out of the effects generated by environmental conservation activities, those which do not appear as an increase in sales or profit or a reduction in costs are represented in monetary value calculated by the formula specified for each item.

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

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

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

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

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

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

● Social Cost Reduction Values/ Social Costs
Social cost reduction values represent financial figures obtained by converting the converted quantity of reduction into money and social costs by converting the converted quantity of impact into money. Computations are made using the factor of 108 Euro/t-CO_2 of EPS Ver. 2000.

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

Effect on Environmental Conservation				Environmental Impact			
Environmental Impact Reduction (tons)	Conversion Coefficient	Converted Quantity of Reduction	Social Cost Reduction Values	Total (tons)	Conversion Coefficient	Converted Quantity of Impact	Social Costs
Reduction in environmental impact caused at business sites				Environmental impact caused at business sites			
CO_2 11,224.0	1.0	11,224	1.59	CO_2 287,657	1.0	287,657	40.76
NOx 5.7	19.7	112	0.02	NOx 154	19.7	3,031	0.43
SOx 1.6	30.3	48	0.01	SOx 6	30.3	177	0.03
BOD 2.2	0.02	0.0	0.00	BOD 6	0.02	0.1	0.00
Final amount of waste disposal 129.3	104.0	13,451	1.91	Final amount of waste disposal 277	104.0	28,817	4.08
Emissions of environmentally sensitive substances	(Ricoh standards per substance)	2,222	0.31	Emissions of environmentally sensitive substances	(Ricoh standards per substance)	16,244	2.30
Environmental impact reduction in lifecycle as a whole				Environmental impact in lifecycle as a whole			
CO_2 356,145	1.0	356,145	50.47	CO_2 4,915,481	1.0	4,915,481	696.56
NOx –11,256	19.7	–221,748	–31.42	NOx 14,486	19.7	285,378	40.44
SOx –6,260	30.3	–189,685	–26.88	SOx 16,627	30.3	503,792	71.39
Fossil fuel –	(Ricoh standards per substance)	351,924	49.87	Fossil fuel –	(Ricoh standards per substance)	7,279,791	1,031.60
Mineral resources –	(Ricoh standards per substance)	139,786	19.81	Mineral resources –	(Ricoh standards per substance)	2,487,402	352.48
Other –	(Ricoh standards per substance)	179,701	25.46	Other –	(Ricoh standards per substance)	2,960,801	419.57
Total (environmental impact reduction at business sites)		27,057	3.83	Total (environmental impact at business sites)		335,926	47.60
Total (environmental impact reduction in lifecycle as a whole)		616,122	87.31	Total (environmental impact in lifecycle as a whole)		18,432,645	2,612.03

* The figures for lifecycle as a whole include those for business sites.
* For quantity details on fossil fuel, mineral resources, and other resources, please see Pages 61 and 62 (Eco Balance).
* "Environmentally sensitive substances" are those defined in the environmental action plans based on the substances subject to the PRTR Law and others that are in high use by the Ricoh Group.
* Please see Page 46 for the asset retirement obligations (environmental liabilities).

Data coverage
● **Companies: Major members of the Ricoh Group** See page 79
● **Period: From April 1, 2009 to March 31, 2010 (for costs and total environmental impact)**
* Environmental impact reduction represents the difference of figures between fiscal 2008 and fiscal 2009.
* Social cost is calculated using the factor 108 of Euro/t-CO_2 (14,171 yen/t-CO_2).

(1) Formula of substantial effects (a1)

Reduction in heat, light, and water cost	Heat, light, and water expenses in the previous year – heat, light, and water expense in the current year
Reduction in waste disposal cost	Waste disposal expenses in the previous year – waste disposal expenses in the current year
Sales value of valuable materials	Sales value of valuable materials sorted from discharged matter
Sales of recycled products and parts	Sales of recycled products and parts
Subsidies	Environmental subsidies from the government, etc.

(2) Formula for estimated substantial effects (a2)

R&D profit contribution amount	Product gross margin × gross margin contribution rate calculated using environmentally-friendly points

(3) Formula for secondary effects (b)

Contribution to value-added production	Gross profit on sales × environmental conservation costs / selling, general and administrative expenses, etc.
Effects on media coverage	Area of newspaper advertisement / newspaper page area × advertisement cost per page
Effects of environmental education	Number of people attending internal environmental education seminars × seminar fee for outside participants
Publicity from environmental advertisements	Number of visitors to environmental Web site × unit price of the sustainability report

(4) Formula of incidental effects (c)

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

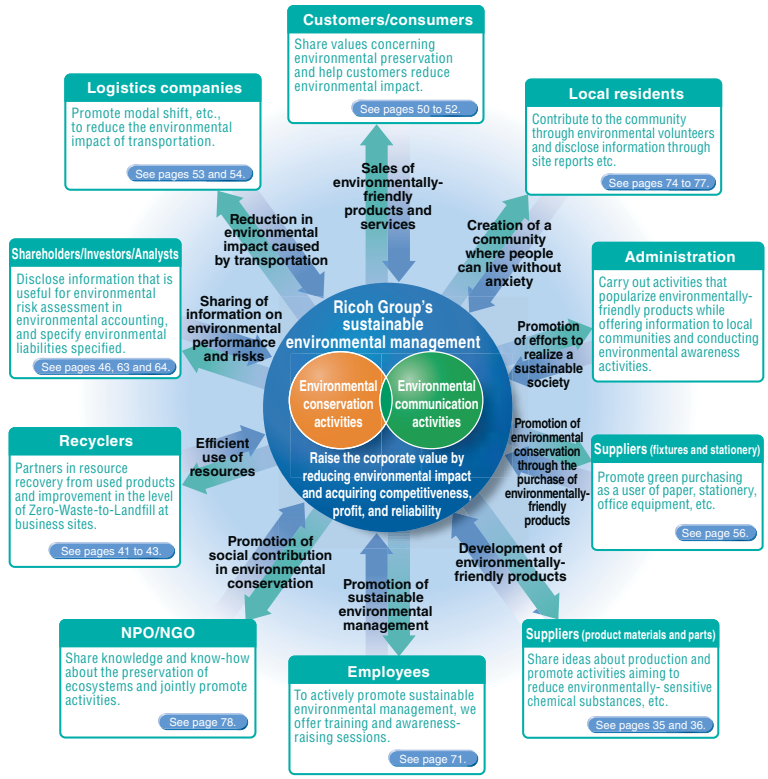
(5) Formula for social effects (S) (economic benefits from use of products by customers)

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

We will promote communication with all stakeholders in good faith and expand the network of sustainable environmental management.

To be a going concern whose growth and development is desired by society, promoting environmental conservation activities alone is not enough. We have to make efforts to inform as many people as possible of our philosophy and activities so that we may win public trust and confidence. The active disclosure of information to internal and external stakeholders will contribute to the further strengthening of activities and the creation of a sustainable society. With the firm belief that environmental communication and conservation activities are the two wheels of sustainable environmental management, the Ricoh Group is expanding its network of conservation activities through the promotion of communication in good faith.

Sustainable environmental management and environmental communication



●Definition of Ricoh Group's green purchasing
- Green procurement (materials and parts)
- Green purchasing (business equipment and stationery)
- Green sales (or green purchasing by customers)

Stakeholder Communication

Participation in Japan-CLP

<Ricoh (Japan)>

On July 30, 2009, Ricoh announced its participation as a founding corporate member of Japan-CLP (Japan Climate Leaders' Partnership). Japan-CLP is Japan's first business coalition formed on the understanding that the industrial community should recognize the urgency of addressing the issue of climate change and start taking proactive action. Japan-CLP creates opportunities for dialog with policy makers, industry and citizens, and will undertake a variety of activities with a focus on Asia. Member firms share the common goal of building a sustainable low-carbon society, have made their own commitments, and will take three approaches: building awareness, developing systems and introducing technologies. Ricoh intends to strengthen its activities aimed at achieving its own Mid- and Long-Term Environmental Impact Reduction Goals and will cooperate, mainly in the field of developing environmental technology, with other Japan-CLP corporate members firms in order to realize the common vision.

* Japan-CLP: http://japan-clp.jp/en/index.html
* News release: http://www.ricoh.com/info/090730.html

Exhibitions

<Ricoh Group (Japan)>

In December 2009, Ricoh participated in a general environmental exhibition titled Eco-Products 2009 held at Tokyo Big Sight. Ricoh presented the ideal state of the Earth Ricoh aims to realize through a comprehensive exhibition of technologies, products, and activities related to sustainable environmental management. At the main booth, we explained our comprehensive measures for achieving the 2050 environmental impact reduction goals as well as measures to revitalize the Earth through the preservation of biodiversity.

Production of TV commercials on the environment
<Ricoh (Japan)>

Ricoh believes in contributing to the reduction of environmental impact in society in general by effectively using communication tools. In fiscal 2009, we produced TV commercials and products based on the catchphrase “Shigoto ni Tsuyoku. Chikyu ni yasashiku” (roughly translated as “Tough at work. Gentle on the Earth”). We also aired a series of TV commercials centered on “Eco Banashi” (roughly translated as “eco-friendly stories”) which introduce simple ways to be eco-friendly.

Eco Banashi Series of Commercials

- The RECO View version about reusable sheets
- The Trolley version about moving machines without utilizing electricity
- The Bicycle version about making maintenance visits on bicycles
- The Copier version about carefully reusing machine parts
- The Dry Wash version about washers that don’t use water
- The Stationary Placement version about reducing unnecessary clutter but maintaining efficiency at work

* Introduction of TV commercial: http://www.ricoh.co.jp/advertisement/cm/index.html
* Eco Banashi: http://www.ricoh.co.jp/no1/ecobanashi/

Issuance of Sustainability Reports (Environment)
<Ricoh Group (Global)>

The Ricoh Group’s environmental report has been issued annually since it was first published in April 1998, which disclosed fiscal 1996 data. Since the 2004 edition, we have been issuing three reports in June: Sustainability Report (Environment), Sustainability Report (Corporate Social Responsibility), and Sustainability Report (Economic). The 2009 sustainability reports were awarded the Environmental Reporting Grand Prize (Minister of the Environment Award) at the 13th Environmental Communication Awards hosted by the Japanese Ministry of the Environment and the Global Environmental Forum. The Sustainability Report (Environment) 2009, meanwhile, was chosen as a recipient of the Special Award of the 13th Environmental Report Award hosted by Toyo Keizai, Inc. and Green Reporting Forum.

Receiving the Minister of the Environment Award from the Environmental Minister, Sakihito Ozawa

Environmental reports issued by business sites
<Ricoh Group (Global)>

To enhance relationships with local communities, Ricoh Group business sites issue their own environmental reports as a means of communication with government offices, residents of neighboring areas, and family members of their employees. The Ricoh Group established guidelines for the preparation of site reports on environmental conservation for its business sites in fiscal 2001, and this is currently used within the Group.

Environmental web site
<Ricoh (Global)>

Ricoh’s environmental web site[1] focuses on visibility, simplicity and user-friendliness so that visitors can easily find the information they want, including environmental information of products and the latest news. It is also available in English and is linked to affiliates throughout the world. For children, the learning section, “Ecotoday Tempel-Tuttle Story,”[2] provides stories about forest ecosystem conservation activities supported by Ricoh in various parts of the world, as well as quizzes and games to help children learn about environmental issues in an enjoyable way.

1. Ricoh’s sustainable environmental management: http://www.ricoh.com/environment/
2. Ecotoday Tempel-Tuttle Story: http://www.ricoh.com/environment/ecotoday/

Stakeholder Communication

Green Communication Strategy Meeting in China—Sustainable Environmental Management by Coordinated Efforts in Four Areas

<Ricoh Group (China)>

On Nov. 6, 2009, 17 Ricoh Group firms in China hosted the third Green Communication Strategy Meeting (Promotion of Sustainable Environmental Management by the Coordinated Efforts in the Four Areas). A total of 220 people participated in the event, which connected participants in Beijing, Shanghai, Fuzhou, and Shenzhen for a teleconference. During discussions on the main theme, "Results of CO_2 reduction activities at each firm," officials in charge of on-site sustainable environmental management activities talked about specific activities. The most urgent agenda now is how China will balance economic growth with environmental preservation. Ricoh Group companies conduct businesses in four areas: development and design, procurement and manufacturing, sales, and distribution. The companies will cooperate as a single unit in these four areas to implement sustainable environmental management by simultaneously making a profit and contributing to environmental preservation under the motto "No growth strategy without sustainable environmental management."

Supporting environmental activities by students

<Ricoh Americas Corporation (Global)>

Ricoh Americas Corporation (RAC), our regional sales headquarters for the Americas, is one of the major sponsors of the International Science & Engineering Fair (ISEF). ISEF is one of the largest and most prestigious science contests for high school students, with about 1,600 students from more than 50 countries and regions participating in it each year. RAC has been giving the Ricoh Sustainable Development Award since 2005 to entries whose innovations contribute to making businesses environmentally friendly and socially responsible as well as profitable. In fiscal 2010, the best awards were given to Mr. Roshan Palli, Mr. Joseph Corbett Ferguson, Ms. Holly C. Erickson, and Mr. Ryan C. Erickson in the award ceremony held in San Jose, California.

(From left) Mr. Roshan Palli, Mr. Joseph Corbett Ferguson, Ms. Holly C. Erickson, Mr. Ryan C. Erickson and Robert Whitehouse (Director, Environmental Management and Product Compliance, RAC)

Communication with Local Communities

Three-In-One Program

<Ricoh (Thailand) Ltd. (Thailand)>

Ricoh (Thailand) Ltd. (RTH), a sales subsidiary, organized a "Three-In-One Program"* to support environmental activities in elementary schools. In the program, participating elementary schools selected their own themes and engaged in environmental communication activities under the chosen themes, with the involvement of local communities. The top-performing participants were awarded a grant for their activities. Environmentally concerned local citizens cooperated in the program by serving as judges.

Seven elementary schools in Bangkok and inland areas, bringing together over 9,800 students, participated in the program with a wide variety of activities. One of these activities was a waterway cleanup project where students and local citizens cleaned up waterways near the school using microbiological water purifying pellets that the students had created. Other projects included collecting and sorting recyclable waste and donating the proceeds from the sales to temples; an exhibition for local citizens of art works made from waste materials; and making organic fertilizer for use in the school. These projects were subject to periodic progress evaluation by the program judges. Based on the results of the final review in December 2009, Klongmakarmted School received the first prize for two activities: an exhibition of craft works made from waste paper and its community awareness raising activities. A total of 65,000 baht was awarded to the top four prize winners.

* The name indicates that this single program is designed to meet three objectives: (1) environmental communication with customers and communities, (2) corporate social responsibility, and (3) positive contributions to the environment.

Students from schools participating in the RTH environmental projects, with RTH President, Julian Fryett (back row, center)

Students giving a presentation

Recycled Bench Design Competition
<Ricoh Hong Kong Limited (Hong Kong)>

Ricoh Hong Kong Limited, a sales subsidiary, sponsored the Recycle Bench Design Competition organized by the Hong Kong Association of Youth Development. Nearly 400 students applied for this design contest with their ideas to create attractive benches from waste materials. On July 11, 2009, the complete works of the champions and the runner-ups in the junior and senior divisions were unveiled at the event venue Tsuen Wan Plaza. The four benches were displayed in public places as a symbol of environmental consciousness to raise citizens' awareness.

"Green ambassadors" to support environmental education in primary schools
<Lanier (Australia) Pty. Ltd. (Australia)>

Lanier (Australia) Pty, Ltd. (LAP), a sales subsidiary, supports environmental education in primary schools. As part of this effort, three LAP employees visited Ashdale Primary School on July 8, 2009 as "green ambassadors" to meet and talk with children and to teach them the importance of protecting the environment. Approximately 80 students and their teachers planted some 70 trees in the school with the support of the three LAP ambassadors. This activity was a part of LAP's tree-planting program to offset its paper supplies to customers.

Views held by employees

INTERVIEW

Interactive Environmental Communication between the Company and the Community

Giving back to the community what we learned at the company.
We feel the importance of environmental communication every day.

Tetsuo Ito
Senior Specialist
(in charge of environment, safety and sanitation/TPM)
General Affairs Group
Fukui Plant

Receiving the Minori Award* for contribution to local and administrative environmental activities

At the request of Fukui Prefecture and Sakai City, the Ricoh Fukui plant has been cooperating with the environmental promotion activities of the local governments. In 2007 and 2008, I served as the head of Sakai City's committee for drafting an environmental action plan and took on the immense challenge of summarizing the opinion of citizens, the local administration, and environmental experts. Day after day, after work, I conducted hearings attended by many stakeholders, including local residents and corporations, to hear a wide range of opinions on the challenges and problems related to regional environmental preservation. In the end, we were able to draft Sakai City's basic environmental plan for the next ten years. I was very happy because I was able to use the experience and knowledge I gained as the officer in charge of the environment at the Fukui Plant to contribute to local policy and assist the community. I also appreciate from the bottom of my heart the understanding and support I received from my colleagues as well as Ricoh for acknowledging my work.

I believe that the company trained me to become the person I am today. I gained from Ricoh everything I do now including learning about the environment and communicating with people. My actions are based on giving back to the community what I learned from Ricoh and giving back to the company what I gained from the community.

* Ricoh Group President's Award

● We introduce a longer version of this interview, as well as further information about Tetsuo Ito's activities, at Ricoh's sustainable environmental management web site. (http://www.ricoh.com/environment/communication/communities/01_01.html)

Ricoh Global Eco Action 2009

Started as an initiative by Ricoh Group employees, Global Eco Action has grown to become a global program with growing local networks.

Ricoh Global Eco Action day is a day to think about the environment and start to take action. Started in 2006, this program has developed an extensive network of participants encompassing the families and friends of Ricoh Group employees, customers, corporate neighbors, and governmental organizations.

"Eco actions" for greater green awareness in the five operating regions around the globe

Ricoh Global Eco Action is an annual event held on the UN's World Environment Day to raise the environmental awareness of Ricoh Group employees. On this day, the lights at Ricoh facilities and neon signs around the world are turned off, employees leave the office on time, and participating offices, departments, and individuals also take various actions of their choice. To promote greater participation, the Corporate Environment Division invited Group employees around the globe to join the program via a range of media that included posters in different languages, PC wallpapers, emails, and in-house broadcasting messages. "Initially, participants were required to pre-register and send participation reports using the Intranet so that the amount of CO_2 emissions saved by Eco Action could be evaluated. Over time, the network of participants has expanded externally to include employee families and friends, customers, neighboring corporations, and governmental organizations, which has made it difficult to calculate the total number of participants and the benefits achieved by the program, " said Hiroko Hayashi, a staff member who is involved in promoting Eco Action.

Stepping up various eco actions tailored to national and local situations

"In the course of expanding the program globally, we were faced with several challenges associated with different organizations/workplaces, local characteristics, attitudes, and more. We have strived to address these challenges through trial and error, attempting new ideas each year. For instance, the event originally took place on the summer solstice, but is now on the globally-observed UN World Environment Day. Recognizing that the policy of no overtime work and no lights after hours is effective in Japan where people tend to work long hours, but may not be so in a country or office where the staff usually leave the office relatively early, now specific local activities are designed and determined locally to be effective in each office. We have also extended the program duration in response to the increasing number of participating offices implementing the Eco Action program for a certain period, rather than as a one-day event," said Hayashi. As a result, eco actions that fit national and local characteristics and situations are here to stay, and good practices in one location have become embedded in other locations almost contagiously. Satoko Fushimi, who joined the promotion team in fiscal 2008, agrees on the significance of the global implementation of the program based on her first-hand observations. "Our firm in the Netherlands named the campaign to encourage commuting without cars as 'Give Your Car a Break,' which would have been dubbed 'No Commuting by Car' or something similar in Japan. Viewing eco actions from a positive angle, rather than perceiving them as constraints or something to bear, will help the activities continue to move forward and take root. Changing into such a positive mindset would not have happened effectively if the program had been implemented only within Japan. The purpose of environmental awareness building is to develop positive attitudes toward green actions," said Fushimi. Now is the time for people around the world to change their mindset toward the global environment and create a sustainable society. We at the Ricoh Group believe that the Eco Action network will become part of the solution for this.

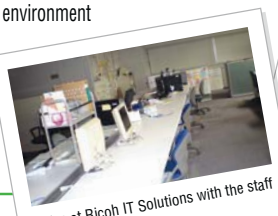
Satoko Fushimi
Environmental Communication Office, Corporate Environment Division

Hiroko Hayashi
Environmental Communication Office, Corporate Environment Division

Japan

A wide range of activities, including cleaning up local communities, turning off the lights on advertising towers and billboards, limited use of elevators, and leaving the office on time, were implemented concurrently at all Ricoh sites across the country. At Ricoh IT Solutions Co., Ltd., 98% of its workforce or 994 employees left the office on time (the remaining 2% took care of operational duties). Comments from the employees include "I had the opportunity to talk about the environment with my family," and "I had not come home early for a long time. I enjoyed doing things that I had no time to do before." At Ricoh Head Office, employees were encouraged to cultivate their green attitude through, for example, a discussion on the theme of waste reduction in the office cafeteria.

Menu items are displayed on electronic screens, rather than using sample dishes, at the office cafeteria. This change aims to reduce the consumption of food resources and costs.



Office at Ricoh IT Solutions with the staff gone and the lights off

Asia Pacific

Eco Action has become an established nationwide program in Singapore as a result of collaborative promotional efforts by Ricoh Asia Pacific Pte. Ltd. (regional sales headquarters), Ricoh (Singapore) Pte. Ltd. (sales subsidiary) and the Singapore Environmental Council (NGO), who invited many organizations in the country to join the initiative. In its third year, 2009, the Eco Action program had a greater number of participants than ever before: 43 organizations from the governmental, academic, business, and other communities. Actions taken included switching the lights off during predetermined hours, setting air conditioners at higher temperatures, and reducing paper use. Together, these efforts saved 7,767 kWh of power, or approx. 5 tons of CO_2 equivalents.

Electricity-generating bicycle

Participants with National Environmental Agency Director-General Ng Meng Hiong and Ricoh Asia Pacific President Majima (seventh and sixth from left in front row, respectively)

Ricoh Hungary staff with a member of the National Society of Conservationists and students of Eötvös Loránd University

Europe

In Europe, a growing number of highly motivated eco actions have taken place. Examples include the "Give Your Car a Break" campaign at Ricoh Europe (Netherlands) B.V., and Ricoh International B.V. with Ricoh Europe SCM B.V. encouraging employees to commute by public transport or bicycles or by car sharing. The air pressure in the tires of corporate vehicles was also checked to avoid unnecessary CO_2 emissions. In addition, employees of Ricoh Hungary Kft. worked with members of the National Society of Conservationists as well as ornithologists and ornithology students of Eötvös Loránd University to repair wooden paths in the Bird Sanctuary in Ócsa, within the Duna-Ipoly National Park. The paths are necessary for bird protection. Meanwhile, Ricoh Deutschland GmbH participated in a nationwide campaign to commute by bicycle to promote environmental and human health, in which 65 Ricoh employees biked to work for 20 days or more.

Ricoh Deutschland Employees participated in the "Cycle to Work" campaign

The Americas

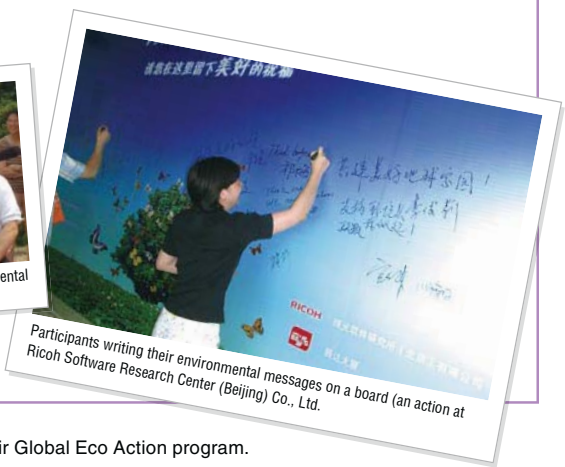
Ricoh Americas Corporation, the regional sales headquarters, vigorously promoted environmentally and budget friendly activities, such as car-sharing, carpools, and sharing the ride. Ricoh Canada Inc., a sales subsidiary, implemented the "Use Less Power" program jointly with several local companies to reduce electricity consumption based on advice from ergonomics specialists. Following the success of the initial implementation, the program has been rolled out in all Ricoh and IKON offices in Canada.

Poster for the Use Less Power program

China

As part of the Eco Action program, Ricoh China Co., Ltd., the regional sales headquarters, and Changning District in Shanghai jointly held a "World Environment Day Promotion Event." Such an awareness raising event as part of the Eco Action program in China, established as a collaborative event with the local government, evolved from a program by a single corporation. At the venue in the Jinju Residence Community, many citizens of various ages reaffirmed their green commitment by chanting the phrase, "Together let us protect beautiful Changning District, Shanghai, China, and the Earth." In addition, the head office of Ricoh China kept the lights off on its advertising tower and billboards during the night of the Eco Action day and all the employees left the office on time at 5:30 p.m.

RCN President Niimura at an environmental event



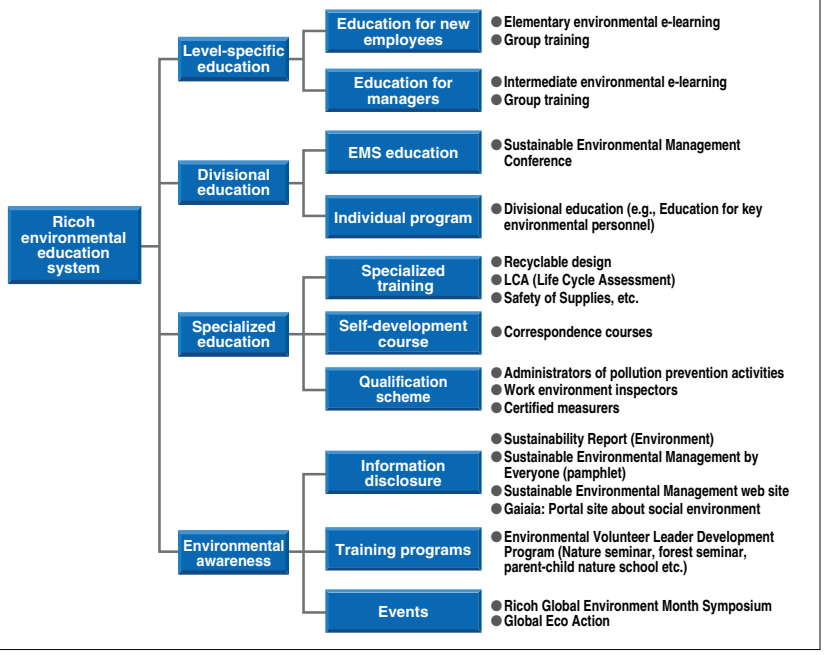
Participants writing their environmental messages on a board (an action at Ricoh Software Research Center (Beijing) Co., Ltd.

● Please also refer to our website to learn more about how each region implements their Global Eco Action program.
http://www.ricoh.com/communication/stakeholders/01_01.html

The core goal of our employee training is to ensure employees are well aware of their responsibility as global citizens and can serve as driving forces of the company's sustainable environmental management.

To realize sustainable environmental management with the full participation of all employees, clear instructions from top management and the active involvement of each division are essential. But also important is to give each of the employees opportunities to learn how to be proactive in pursuit of sustainable environmental management in their own operations. While sustainable environmental management is indeed a corporate act, it is also an act that can be realized only by the actions of individual employees. The outcome of sustainable environmental management activities of the Ricoh Group, therefore, greatly depends on the awareness and recognition of our 100,000 plus employees around the world. Through training and awareness-raising sessions, Ricoh employees learn to become good global citizens, good Ricoh Group employees, and specialists in sustainable environmental management, and proactively encourage as many people as possible to join them in pursuit of sustainable environmental management.

Environment-related training courses and awareness-raising system chart



Elementary and intermediate environmental e-learning for employees

<Ricoh Group (Global)>

In fiscal 2006, an elementary e-learning course, "First Steps to Sustainable Environmental Management," was conducted over the in-house LAN for Ricoh employees. The curriculum covered "Companies' Missions in Global Environment Problems," "Activity Cases in Respective Divisions," as well as other subjects, and aimed to enhance understanding and awareness towards sustainable environmental management. In fiscal 2007, the program was expanded to cover employees of other Group companies in Japan. In fiscal 2008, a digested version of the elementary environmental e-learning was published in compact disc form with English subtitles and distributed outside Japan. In addition, intermediate e-learning materials were developed to include information such as how to effectively incorporate environmental perspectives into daily business operations and how to evaluate the outcome of sustainable environmental management. The new e-learning material has been used to train the managers and those in charge of environmental promotion in each division. In fiscal 2009, these e-learning programs were continued outside Japan, with the same content localized to meet the specific conditions of each region or site.

Organization of environment-related specialized training courses

<Ricoh Group (Japan)>

To develop personnel who can manufacture environmentally friendly products or manage chemical substances properly at their workplaces as sustainable environmental management specialists, environment-related specialized training courses, such as LCA and recyclable design, are organized for employees. In May 2009, training programs were organized for 246 new employees assigned to technology departments to learn about the Group's sustainable environmental management and environmental technology strategy, as well as environment-friendly design and the LCA method.

Environment-related specialized training courses

Name of course	
Life Cycle Assessment (LCA) (basic)	Noise (basic)
Life Cycle Assessment (LCA) (application)	Recyclable Design
Safety of Supplies (elementary)	Thermal Design for Office Equipment
Safety of Supplies (advanced)	Ricoh Group's Chemical Substance Management System (outline)
Environment-Related Laws and Regulations	

Organization of environmental training for sales personnel

<Ricoh Group (Japan)>

In efforts to expand the network for sustainable environmental management, our sales personnel, as the customer's primary contact for business, should be able to provide our customers with accurate explanations on global environment issues and the Ricoh Group's activities in sustainable environmental management. With this recognition, in September 2009 the Group launched environmental training programs designed specifically for sales personnel. Using presentation tools on the intranet, these programs provide training on themes ranging from the current status of the global environment and the ideal society pursued by the Group, to our efforts to reduce environmental impact and to conserve biodiversity. The training, currently focusing on sales managers, will be expanded to cover other levels of employees in the sales division.

We preserve biodiversity by maintaining and improving the self-recovery capabilities of the global environment through our business activities as well as our social contribution activities.

As indicated in Ricoh's Environmental Principles[1], introduced in 1992, the Ricoh Group does not see environmental conservation activities and business management as two incompatible issues. Instead, we see conservation of the global environment as a natural responsibility as a global citizen. Conservation of the global environment requires measures not only to reduce impact of our business operations and products on the environment but also to maintain and improve the self-recovery capabilities of the global environment. Recognizing that our businesses depend on the global ecosystem and that biodiversity plays an indispensable role in the health of the ecosystem, the Ricoh Group laid down the Ricoh Group Biodiversity Policy. This is to further develop the various conservation measures we have been taking, such as ecosystem conservation activities, promotion of voluntary activities by employees, and "social contribution in environmental conservation" (e.g., awareness-raising programs to encourage other community members), and ecosystem preservation through CDM[2] projects. To these measures, we have added measures to reduce the impact of our business activities on biodiversity by using the new policy as our basic guideline on biodiversity preservation.

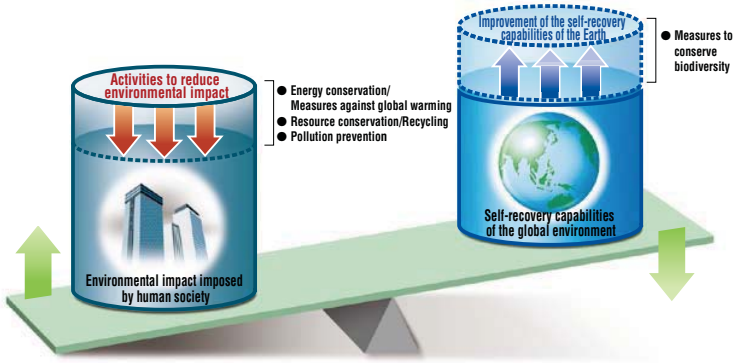
1. See page 16. 2. See page 40.

Ricoh Group Biodiversity Policy

Human society largely depends on the ecosystem. But human society has had a tremendous impact on the ecosystem, placing a wide-scale burden upon it. In the past 50 years, the global biodiversity has been badly degraded due to human activities. If we do not act now to start conserving the biodiversity and change our way of using natural resources to a more sustainable approach, the survival of human society may even be at risk. To articulate this idea in a concrete form, the Ricoh group laid down the Ricoh Group Biodiversity Policy in March 2009. The Policy combine the existing measures of the Group toward global environmental conservation and new measures for biodiversity conservation to help develop and promote specific activities. With this Policy, the Ricoh Group will continue our efforts to realize an affluent society built on a sustainable global environment.

Ricoh Group's global environmental conservation

—Keep environmental impact within the self-recovery capabilities of the Earth—



Ricoh Group Biodiversity Policy

Society has developed thanks to the earth's abundant natural resources. However, we recognize that the very diversity of life that has supported our environment is in decline; so, in response, we have formulated this biodiversity policy.

Basic Policy

Given that we gain a lot of benefit from living things and pursue business activities that have an impact on biodiversity, we will reduce the impact of our activities on biodiversity and engage proactively in its protection.

1. **Management tasks**
   Treat biodiversity protection as essential for ensuring the sustainable growth of the company, and implement sustainable environmental management.
2. **Understanding and reducing impact**
   Assess, grasp, analyze, and set numerical targets for the impact on biodiversity of all our business activities, including raw materials procurement, and work continuously to reduce this impact.
3. **Implementation**
   Give priority to measures with a high degree of impact and effectiveness from a biodiversity and business perspective.
4. **Developing new technologies**
   Aim to realize a sustainable society, develop technologies that make use of biological resources, learn from the mechanisms of ecosystems and the nature of living things, and employ the knowledge gained to develop technologies and sustainable production processes.
5. **Working with local communities**
   From the perspective of sustainable development, work not only with government organizations, but also with local residents, NGOs, and other stakeholders to promote the protection of the precious global ecosystems and of the biodiversity of countries and regions where we conduct business.
6. **Involving each person**
   By getting executives to take the lead and implementing Group-wide educational initiatives, enhance recognition of the importance of biodiversity among all employees to enable them to act independently.
7. **Expanding the scope of our activities**
   By collaborating with customers, suppliers, other companies, NGOs, international organizations, and so on, share information, knowledge and experience concerning biodiversity, and expand the scope of our protection activities.
8. **Communication**
   Contribute to raising awareness of biodiversity protection among people at large by sharing the experience of our activities and achievements proactively.

Business-Related Activities

Development of biodiversity conservation activities
<Ricoh (Global)>

Biodiversity conservation activities at the Ricoh Group first started in 1999, when we started the Forest Ecosystem Conservation Project with environmental NGOs and local communities throughout the world. This was to recognize our responsibility as a manufacturer of products that use a great deal of paper and to engage in the conservation of forest resources. Also in 1999, we started the Environmental Volunteer Leader Development Program to encourage employees to take an initiative in environmental conservation activities. In 2008, when the Japan Business Initiative for Conservation and Sustainable Use of Biodiversity (JBIB)[1] was established, we helped the organization in our role as one of the founding members to advance the goal of promoting cooperation and active involvement of various companies in biodiversity conservation. We evolved the aforementioned Environmental Standards for Paper Product Procurement (established in 2003) that aimed to protect the world's precious natural forests further in 2010 by formulating the Ricoh Group Standards on Wood-based Raw Materials.[2] The standards are applicable to the entire Group and their scope has been expanded to include broader wood-based materials in addition to paper products.

1: http://www.jbib.org/en/ 2: See page 35.

Ricoh and biodiversity conservation

Fiscal year	Actions taken
1999	Forest Ecosystem Conservation Project started for biodiversity conservation
	Environmental Volunteer Leader Development Program started
2002	Ecosystem conservation activities incorporated into the Environmental Action Plan
	Use of FSC-certified paper started
	Environmental website for children opened with a theme of the Forest Ecosystem Conservation Project
2003	Environmental Standards for Paper Product Procurement laid down
2004	A CDM project (forestation for biodiversity conservation in Ecuador) started
	Display of ecosystem conservation activities started at the exhibition on Eco-Products
2006	Ricoh Global Environment Month Symposium started with a theme on biodiversity
2007	Feasible biodiversity assessment indices studied
2008	Became a member of Japan Business Initiative for Conservation and Sustainable Use of Biodiversity (JBIB)
	Signed the Leadership Declaration on the "Business and Biodiversity Initiative"
	Creation of a biodiversity policy
2009	Discussion started to explore how our business areas (paper, manufacturing sites, and education) could address biodiversity conservation in line with our related visions.
	The Ricoh Group Standards on Wood-based Raw Materials formulated

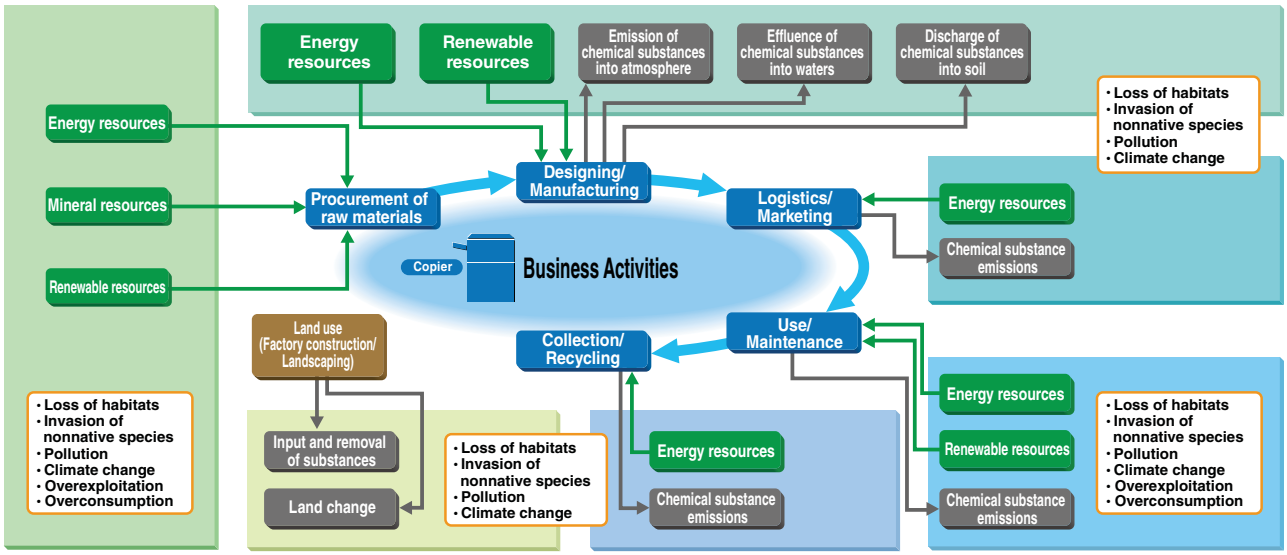
Ricoh's Forest Ecosystem Conservation Project won the Devnet Award

On October 23, 2009, Ricoh's Forest Ecosystem Conservation Project received the Devnet Award from Devnet Japan Association for its continued contributions since 1999 to conserving the natural environment in developing countries. The award program, designed to honor efforts to help develop developing countries, recognized the project as an advanced corporate initiative for biodiversity conservation.

Mapping of relationship between business activities and biodiversity
<Ricoh Group (Global)>

The Ricoh Group created a map to show the exact relationship between our business activities and biodiversity. The "Map of Corporate Activities and Biodiversity" follows the JBIB format to show the relationship between corporate activities, such as product lifecycle and land use, and biodiversity at a glance. From the map, we learned that the copier industry has a large impact on the ecosystem due to procurement of raw materials (e.g., paper pulp and metals) and manufacturing and consumption of paper. We will use the information from the map in our conservation activities in close cooperation with each business division.

Map of Corporate Activities and Biodiversity (Recycled multifunctional digital copiers)



Raising the awareness of employees of the relationships humans share with nature

<Ricoh (Japan)>

The survival of human society is possible only due to biodiversity. If we are to realize a sustainable society, therefore, it is essential that each and every one of us gets actively involved in the conservation of biodiversity, the basis of the global environment's self-recovery capabilities. Biodiversity is one of the major thematic features of "Gaiaia," a website for environmental information we started in April 2009 to promote environmental education and awareness among our employees. We also published the Biodiversity Conservation Activity Handbook one month later, in May, to teach our employees the value of biodiversity and show them what each of us can do to conserve biodiversity. These tools are used in our study sessions and Ricoh Nature Seminars, which are designed to allow employees to learn and understand the mechanisms of the global environment from the perspective of other life forms on Earth and thereby help raise their awareness and encourage them to take good actions to conserve biodiversity in the course of their daily work and private life.

In March 2010, Gaiaia won the Grand Prize and the Biodiversity Category Award of the "Kankyo Goo Award 2009," organized by NTT Resonant Inc. with the sponsorship of the Japanese Ministry of the Environment, in recognition of its excellent online communication of environmental issues.

Social Contribution to Environmental Conservation

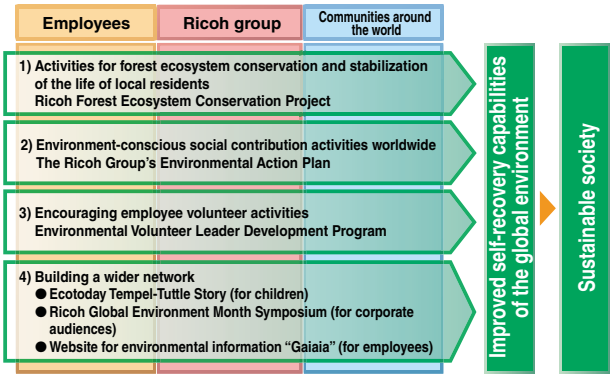
Environment-conscious social contribution activities at the Ricoh Group

<Ricoh Group (Global)>

The Ricoh Group has been working closely with local communities around the globe to make a positive difference to society and the environment under four major themes: the Forest Ecosystem Conservation Project, environment-conscious social contributions, promotion of employee volunteer activities, and building a wider network.

With regard to environment-conscious social contribution activities, our Group companies worldwide have been implementing various programs with the participation of all their employees to achieve the ecosystem conservation targets specified in the Environmental Action Plan.

The Ricoh Group's environment-conscious social contribution activities



Implementing the Environmental Action Plan (Sample Activities in Japan)

Award for contributing to environmental conservation

<Ishikawa Branch, Ricoh Chubu Co., Ltd. (Japan)>

In January 2010, the Ishikawa Branch of Ricoh Chubu Co., Ltd. was honored by Ishikawa Prefecture for being an exemplary corporate contributor to environmental conservation with the Ishikawa Environmental Merit Award. This external recognition reflects the value of the branch's nature conservation efforts, including continued support and employee volunteering for the rice terrace restoration activities that have been organized by Oonomi Green Tourism Council since 2006. Hundreds of branch employees and their families have participated in activities to conserve the rural landscape and restore abandoned rice terraces in the prefecture since the project began. In the Noto region of Ishikawa Prefecture, 150 employees of the Ricoh Ishikawa Branch and other Ricoh Group companies are engaged in tree planting and rice terrace conservation activities based on the "Agreement on Supporting Activities to Use and Conserve the Rural Landscape" signed between Ricoh Chubu and Ishikawa Prefecture in June 2008.

Ishikawa Governor Masanori Tanimoto (right) and Kazuto Hirama (center), general manager of the Ricoh Chubu Ishikawa branch

Ricoh Chiba Fureai-no-Mori

<Chiba Branch, Ricoh Sales Co., Ltd./Ricoh Technosystems Co., Ltd./Ricoh Business Expert, Ltd./ Ricoh (Japan)>

Each month, a group of Ricoh Group employees and their families meet in the Ricoh Chiba Fureai-no-Mori forest in Wakaba-ku, Chiba City to help restore the rural landscape there. On February 20, 2010, some of the Japanese oak trees in the forest were transplanted by 22 volunteers, including 16 Ricoh Group employees and their families. As the trees transplanted in the previous year failed to survive, they asked local gardeners to teach them how to take preparatory steps before transplanting. With the advice from the specialists, four trees were relocated. The volunteers are now keeping a gentle eye on their development.

Learning how to prepare for transplanting, including, the amount of soil to dig, how to wrap the roots with hemp cloth, and appropriate use of the gardening gear.

Promotion of Environmental Action Plan (Sample Activities outside Japan)

BIG GREEN DAY

<Ricoh New Zealand Ltd. (New Zealand)>

The year 2009 marks the 6th year of the planting activities Ricoh New Zealand Ltd. (RNZ) has continued on the beautiful Motuihe Island in the Hauraki Gulf. On May 3, 2009,140 volunteers including RNZ staff, families, dealers and customers planted 1,900 trees, boosting the total number of trees planted to over 11,000. RNZ's conservation effort in the ecological reforestation of the island has been so significant that the planting area has been unofficially dubbed "Ricoh Valley." The sales team also did a good job in urging customers to join in, with this year's number standing at a record 13 companies. Environmental manager Margie Barriball says of the activities, "It's great to have a project that we can all have some ownership of—we'll be able to go there in 20 years, look at the groves of native trees and know that we were all part of an important conservation project."

Supporting reforestation projects

<Ricoh Schweiz AG (Switzerland)>

In September 2009, 28 employees from sales firm Ricoh Schweiz AG participated in a reforestation project called Bergwaldprojekt. Bergwaldprojekt is an organization that conducts volunteer work aimed at preserving natural habitats. The organization consists of forest preservation experts with years of experience in preventing deforestation in mountainous terrain. These experts acted as organizers and directors during Ricoh's reforestation project.

On the day of the project, staff gathered at Escholzmatt Station, arrived at the destination spot around 1,400 m above sea level, greeted project leaders, and broke up into groups to start their activities. Group 1 put up mesh wire and wooden fences around young trees to protect them from wild animals like deer, then cleared the area around these young trees to allow them to grow. Group 2 paved tracks using saws and shovels to make it easier for reforestation in the near future.

For lunch, participants enjoyed a hearty meal on an open plateau with a beautiful view of the mountains. Although tired and suffering from sore muscles, all employees left the project satisfied and content.

Ricoh Schweiz employees participate in the reforestation project.
The motto for the day was: "Back to Life—Ricoh reforests!"

Support for the Earthkeepers™ program

<Ricoh Australia Pty. Ltd. (Australia)>

Since 2003, Ricoh Australia Pty. Ltd. (RAP), a sales subsidiary, has supported the Earthkeepers™ program designed by the Institute for Earth Education, an international NPO. This program involving a three-day stay in a natural bush setting took place from August 12 to 14, 2009 in Glengarry Guides Camp. In the latest program, 81 fourth graders from the Waitara district participated, as well as 15 RAP employees acting as the program staff. RAP President Les Richardson also shared time with the children.

After spending the whole day in the natural environment, participants were able to learn about ecological concepts and gain a better understanding of the global environment. Since the camp program, the children's learning experience has continued through the school curriculum and home activities, helping them to become true Earthkeepers. Teachers at Waitara Public School said, "We noted they have a different attitude toward the environment now. The experience they gained in the program will have life-long implications for them. The children fully understand the importance of the environment and the necessity for action by each and every individual."

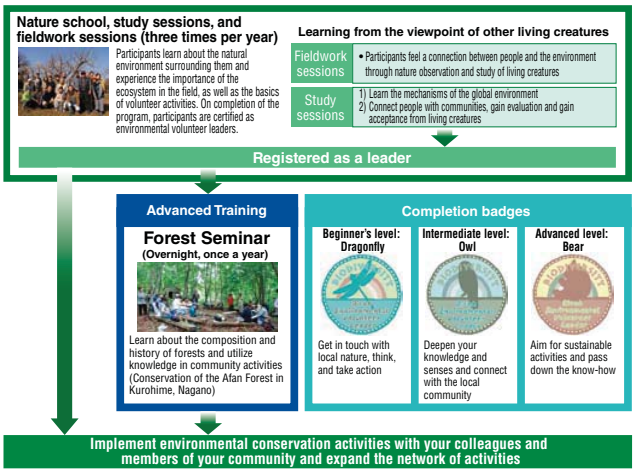
All participants became responsible Earthkeepers

Promotion of Environmental Volunteer Activities

<Ricoh Group (Japan)>

For the conservation of the global environment, it is important for each staff member to carry out related activities spontaneously inside and outside the company with the sense of being a global citizen. Ricoh launched the Environmental Volunteer Leader Development Program in June 1999 for its staff members. In fiscal 2001, the scope of the program was expanded to include staff members working at Group companies as well as retired employees. To date, a total of 496 environmental volunteer leaders have been fostered. After taking part in the program, each participant engages in volunteer activities involving his or her division or community. The network of activities has successfully increased its range of participants from colleagues, through families and friends to entire local communities.

Environmental Volunteer Leader Development Program



TOPIC

Ricoh Nature School Practice Courses

Establishing a biotope in Aoyama Elementary School, aiming to make Aoyama Dori Avenue an urban wildlife corridor.

On February 6, 2010, a man-made biotope pond was created in Aoyama Elementary School in Tokyo as part of the Ricoh Nature School Practice Courses.

Based on the Ricoh Group Biodiversity Policy formulated in March 2009, the Nature School programs have been recently dramatically redesigned to better reflect the needs of other creatures. However, environmental volunteer leaders living in cities commented that they find it difficult to practice what they learned in the programs in an urban setting. In response, we decided to implement a quintessential activity for city-dwellers: construction of a biotope pond in an elementary school with children. The biotope was created in Aoyama Elementary School, a municipal school in Tokyo located close to the busy thoroughfare of Aoyama Dori Avenue as well as Aoyama Cemetery and Meijijingu Gaien Park.

At 9:00 a.m. on the project day, 20 environmental volunteer leaders and other Ricoh Group employees met with the school's teachers, parents and local neighbors gathered at the school gate. In his opening remarks, Mr. Harumitsu Mashiko, head of the Corporate Environment Division of Ricoh, expressed the Group's gratitude to the Aoyama Merchants Association for its cooperation and co-organization of this project. The association has been implementing its unique activities to conserve biodiversity under the motto of "Make Aoyama Dori Avenue an urban wildlife corridor." In the morning, our environmental

volunteer leaders conducted earth-digging work for the biotope construction and Mr. Noriaki Mitsumori of the Nature Citizen Institute provided an open class with the theme of "Let's talk with living creatures" to some 30 fourth-graders, with their parents and local neighbors as observers. In the afternoon, 18 volunteer pupils of the school joined the environmental leaders in constructing the biotope. Work included activities such as solidifying the ground and planting water plants and weeds, and finally filling up the pond. The project took place on a wintry cold February day to ensure completion of the project before the hibernating frogs woke up. Thanks to the participants' hard work, the mini ecosystem created in the pond got off to a good start; in mid-March, we were delighted to find many tadpoles swimming in the pond.

* Please visit our environmental website Gaiaia to see how the biotope pond has developed since then: http://www.gaiaia.jp/ActivityRupo/

Environmental Volunteer Activities

Beach cleanup and sand crafting event at Zaimokuza Beach

On September 21, 2009, the annual Cleanup and Sand Crafting Event took place on Zaimokuza Beach in Kamakura. This was the 11th year of this annual program, which was first undertaken in 1999 by the participants in the first round of Ricoh's Environmental Volunteer Leaders program, who invited other Group employees to join them in cleaning up the beach on which a lot of waste is left behind by beachgoers every summer. After collecting, sorting, and disposing of the garbage, those who clean up the beach then enjoy creating sand sculptures. As using sand that is as clean as possible is the key to making a "hard-to-crumble" piece of art from sand mixed with seawater, ambitious "artists" naturally become avid cleaners. Due to its fun nature, the event, which started with only 15 members, has enjoyed steady growth. The latest event attracted more than 120 participants, including Ricoh Group employees, their families, and alumni of Ichimura Nature School Kanto*. With such a large group, the clean-up part was completed in around an hour. In the following sand crafting session, many impressive art works were created on the garbage-free beach with the advice of the Kamakura Sand Sculpture Association, which has cooperated with us in the event from the outset.

* Ichimura Nature School Kanto http://www.szj.jp/

"That's Kirin Saver" tree climbing event

On November 15, 2009, Hatano Thicket Conservation Group, an environmental volunteer group of Ricoh employees, also known as "That's Kirin Saver," held its 70th forest conservation program and celebrated its 10th anniversary by offering a tree climbing event near Lake Shinsei in the suburbs of Hadano City, Kanagawa. A total of 20 people, including Ricoh employees and their families and friends, climbed trees over 10 meters high and enjoyed a wonderful view from the trees. The group was launched in autumn 2000 by Ricoh employees who are Environmental Volunteer Leaders and residents of the Hadano area. For the past decade, the group members have taken care of local thickets, surveyed vegetation, and conducted other activities on almost a monthly basis. There were some first-time participants in this commemorative event, whom the group members briefed about what they do and the group's mission while walking in the thickets. "Actually, I joined the event just because I wanted to try tree climbing. But I now fully understand the importance of appropriate maintenance of thickets. I look forward to joining the next environmental conservation activity," said one participant.

* That's Kirin Saver website: http://www7b.biglobe.ne.jp/~thats_kirin_saver/Thats_KIRIN_top.htm (Japanese)
* Tree Climbing© Japan website: http://www.treeclimbingjapan.org/

The cleanup and sand crafting has become a high-profile event in the local community.

Winners of the first prize proudly display their prize-winning fresh vegetables harvested at the Ichimura Nature School Kanto

Tree climbing

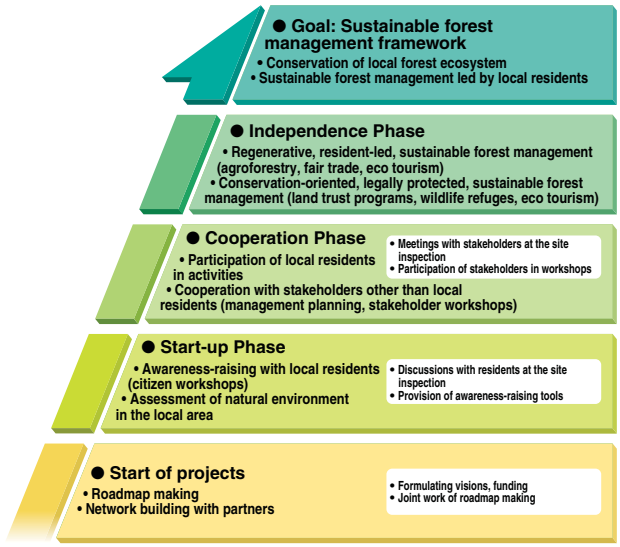
Forest Ecosystem Conservation Projects

<Ricoh (Global)>

Various life habitats exist and unique ecosystems are maintained in forests, lakes and ponds, coral reefs, and oceans. If these ecosystems are damaged, the natural environment that is indispensable for maintaining the life of human beings will be harmed. Ricoh places priority particularly on forest ecosystems with rich biodiversity and has been promoting forest ecosystem conservation projects since fiscal 1999 in partnership with environmental NGOs and local communities. Unlike simple afforestation, the main aims of these activities are to protect the habitats of indigenous species and the life of residents, and to establish a system for sustainable forestry management. The projects are financed by the social contribution reserve that Ricoh established to continuously carry out social contribution activities. Provided that approval is gained at the general shareholders' meeting, 1% of Ricoh's annual profit after deducting annual dividends is allocated for the reserve (up to ¥0.2 billion). The reserved fund is used for addressing multiple global issues, including global environment conservation and youth-related issues.

Steps to achieve the project goal

Roles of Ricoh



Ricoh's Forest Ecosystem Conservation Projects (As of the end of March 2009)

Start date	Country	Name/NGO	Activity	Phase progress			
				Start-up	Cooperation	Independence	Goal
June 1999	Bangladesh	Restoration of satoyama (community forests)/Bangladesh Poush	By restoring satoyama (community forests), we aim to improve the lives of local residents. We also use the satoyama to provide work in the development of afforestation activities, raise saplings, and as venues for educating children.				2007
February 2000	Sri Lanka	Conservation and restoration of forests at World Heritage Sites/ Field Ornithology Group of Sri Lanka	We aim to preserve forests where the Sri Lankan long-tailed fowl and other endangered species live. We engage in activities by cooperating with local residents and local governments.				2007
March 2000	Philippines	Restoration of tropical rain forests*/ Conservation International	We aim to restore rich forests where the Philippine Eagle and other forest creatures live. Local residents launched an association and engage in activities with support from local governments.				2010
October 2000	Malaysia	Restoration of tropical forests and orangutan habitats*/WWF	We aim to expand tropical forests that are the habitats of endangered species, including the orangutan. We will help to build a framework in which each village takes on a forest restoration business that leads to increased income and stable lives.				
November 2001	China (Sichuan Province)	Restoration of temperate forests and giant panda habitats*/WWF	We aim to prevent extinction of indigenous species by conserving habitats for endangered species, such as the giant panda. We seek to expand wildlife management within sanctuaries, and spread the use of bio fuel, which does not rely on deforestation.				2007
November 2001	Japan (Nagano)	Conservation of the Afan Forest in Kurohime, Nagano*/ C.W. Nicol Afan Woodland Trust	Through trust programs for degraded land, we aim to recover natural forests where dormice and other diverse species can live. We conduct monitoring for forest restoration projects and natural environment evaluations, then implement appropriate activities.				
November 2001	Japan (Okinawa)	Conservation of the Yanbaru Forest in Okinawa*/Yanbaru Forest Trust	We aim to conserve the habitats of endangered species, including Rallus okinawae (Okinawa Rail). We encourage local government to designate forests as national parks and also raise awareness in local communities.				
March 2002	Ghana	Restoration of tropical rain forests*/ Conservation International	We aim to restore forests that can serve as habitats for many species by promoting a forestation method that raises cocoa in the shade of trees. Through this forestation method, we can increase income for local farmers, and restore nature through the relocation of animals.				
May 2004	Russia	Conservation of Taiga, the northern limit habitat of tigers*/ Friends of the Earth Japan (FoE Japan)	We aim to register a taiga forest where many wild animal species live, including the Amur tiger, as a World Heritage Site, and promote co-existence with people in order to preserve such taiga forests. We encourage local governments to designate taiga forests as sanctuaries under domestic law, and also apply for registration as World Heritage Sites. In addition, we are training local residents to become forest rangers.				
August 2007	China (Yunnan Province)	Conservation of biodiversity at the Three Parallel Rivers, a World Heritage Site*/ Asia Green-Culture Association	We aim to become model examples of management of World Natural Heritage Sites, where regions develop through sustainable forest conservation. We will study the current conditions of the use of firewood and the forest's eco-system, and raise awareness among local residents to implement sustainable forest management.				
August 2007	Brazil	Restoration of forests in Boa Nova, lowland tropical forests along the Atlantic coast*/ Bird Life Asia	We aim to achieve sustainable forest management with the agreement of local parties and be model examples for surrounding regions. We will also research the reduction of forests caused by firewood consumption and raise awareness of land owners to achieve sustainable forest management.				

* Projects covered under the social contribution reserve system

Targeted Period/Scope of This Report

Targeted Period

This report describes the sustainable environmental management activities of the Ricoh Group in fiscal 2009 (April 1, 2009 to March 31, 2010).

Environmental impact and environmental accounting data: fiscal 2009 data
Descriptions in articles and chronological tables: fiscal 2009 data (may include data from other periods)

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

● Important Organizational Changes Made During the Report Period

No significant changes during the reporting period.

● Past and Future Reports

The Ricoh Group has published annual environmental reports every year since 1997, which covered fiscal 1996. The 2010 Report in English was issued in September 2010. The 2011 Report in English will be issued in September 2011.

Scope of Collection of Environmental Impact and Environmental Accounting Data

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

■ Japan

- **Ricoh production sites:**
  Atsugi Plant, Hatano Plant, Numazu Plant, Gotemba Plant, Fukui Plant, Ikeda Plant, Yashiro Plant
- **Ricoh non-production sites:**
  Head Office, Ohmori Office, Ricoh System Center, Shin-Yokohama Office, Ricoh Service Parts Center [1], Research and Development Center, Toda Technical Center, Applied Electronics Laboratory, Technology Center, Katsuta Plant
- **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 Printing Systems, Ltd.; Yamanashi Electronics Co., Ltd. [1]
- **Ricoh Group major non-manufacturing subsidiaries:**
  Ricoh Logistics System Co., Ltd.; Ricoh Hokkaido Co., Ltd.; Ricoh Tohoku Co., Ltd.; Ricoh Sales Co., Ltd.; Ricoh Chubu Co., Ltd.; Ricoh Kansai Co., Ltd.; Ricoh Chugoku Co., Ltd.; Ricoh Kyushu Co., Ltd.; Ricoh Technosystems Co., Ltd.; Ricoh IT Solutions Co., Ltd.; Ricoh Business Expert, Ltd.; Part Component System Co., Ltd. [2]; Ricoh Leasing Co., Ltd. ; Ricoh San-ai Service Co., Ltd. [1]

■ The Americas

- **Manufacturing subsidiary:**
  Ricoh Electronics, Inc. (U.S.A.)
- **Non-manufacturing subsidiaries:**
  Ricoh Americas Corporation (U.S.A.)
  Ricoh Canada Inc. (Canada) [1]
  Ricoh Latin America, Inc. (U.S.A.) [1]

■ Europe

- **Manufacturing subsidiaries:**
  Ricoh UK Products Ltd. (U.K.)
  Ricoh Industrie France S.A.S. (France)
- **Non-manufacturing subsidiaries:**
  Ricoh Europe PLC (U.K.) and other sales subsidiaries in the region

■ China

- **Manufacturing subsidiaries:**
  Ricoh Asia Industry (Shenzhen) Ltd. (China)
  Shanghai Ricoh Facsimile Co., Ltd. (China)
  Shanghai Ricoh Digital Equipment Co., Ltd. (China)
  Ricoh Thermal Media (Wuxi) Co., Ltd. (China) [1]

■ Asia-Pacific Region

- **Non-manufacturing subsidiary:**
  Ricoh Asia Pacific Pte. Ltd. (Singapore) and other sales subsidiaries in the region

1. Environmental impact data only
2. Environmental accounting data only

Data Corporate Philosophy/Management Philosophy/Principles of the Environmental Reporting

Corporate Philosophy

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

—The Spirit of Three Loves—
Love your neighbor
Love your country
Love your work

Management Philosophy

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

Our Purpose	To constantly create new value for the world at the interface of people and information
Our Goal	To be a good global corporate citizen with reliability and appeal
Our Principles	• To think as an entrepreneur • To put ourselves in the other person's place • To find personal value in our work

Principles of the Environmental Reporting

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

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

Notes:
1. "Companies" refer to the Ricoh Group as a whole, Group companies, and/or their business sites, depending on the coverage and level of the report.
2. The avoidance of disclosing negative information shall not be regarded as a fair representation of all information.
3. The state of companies' environmental risk management shall be included in the information stakeholders use in decision making.
4. Significant subsequent events shall be described in the report. Subsequent events refer to events that occur during the period from the day after the reporting period ends to the date the report is completed. Such events may influence the state of companies' sustainable environmental management from the next fiscal year onward.

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

5. Ongoing applications may be cancelled only if there is good reason and it has been determined that environmental reporting would be more rational if it followed procedures 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.

Data History of Activities (digest version)

■ 1976–2009 (March)

	Ricoh Group activities
1976	• Established Environmental Promotion Section
1990	• Established Environmental Measures Section
1992	• Established the Ricoh General Principles on the Environment • FT 5570 copier obtained the Blue Angel accreditation (initial version)
1993	• Designated chemical substances banned from use in our products • Announced the recycled product design basic policy, implemented Recyclable Design Level 1 • The Ricoh Group achieved total elimination of ozone-depleting substances (specific chlorofluorocarbons (CFCs), specific types of halon, carbon tetrachloride, etc.)
1994	• Completed the Comet Circle, a concept for realizing a sustainable society • Implemented labeling of materials and grade on plastic parts
1995	• Published the first edition of the Ricoh Environmental Management System Guidelines • Announced International Energy Star certified products • Ricoh Gotemba Plant acquired ISO 14001 certification (the first certification given by a Japanese certification organization)
1996	• Started to use Ricoh Environmental and Chemical safety Information System (RECSIS) • Ricoh UK Products Ltd. acquired BS 7750/ISO 14001 certification
1997	• Designated 79 types of chemical substances subject to control • Released the Spirio 5000RM, the industry's first copier designed to be made exclusively from recycled parts
1998	• Drew up the Ricoh Environmental Action Plan • Integrated the functions of the Environmental Promotion Section and the Environmental Measures Section to establish the Social Environment Division (currently the Corporate Environment Division) • Ricoh established the Recycling Division • Issued the Ricoh Group Green Procurement Guidelines • Ricoh Fukui Plant achieved a 100% resource recovery rate (Zero-Waste-to-Landfill)
1999	• Issued the 1998 version of the Ricoh Group Environmental Report • Ricoh introduced its environmental volunteer leader training program. • Commenced a forest ecosystem conservation project in order to preserve biodiversity (in Bangladesh) • Ricoh announced its fiscal 1998 Environmental Accounting • Introduced Strategic Management by Objectives (SMO) which incorporates evaluation standards for environmental perspectives in divisional performance evaluations • Disclosed environmental impact information for products through Type III Environmental Labels (imagioMF6550)
2000	• Obtained Eco Mark with Ricoh copiers for the first time (industry first)
2001	• Introduced resource-recirculating eco packaging to the market for the first time • Released the imagio Neo 350/450 series of multifunctional digital copiers equipped for the first time with resource conservation technology QSU (Quick-Start-Up) • Reorganized the Social Environment Division into the Corporate Environment Division • Ricoh signed the e-mission 55 Group, a petition signed by companies supporting the Kyoto Protocol to the United Nations Framework Convention on Climate Change
2002	• In fiscal 2001, achieved Zero-Waste-to-Landfill at Ricoh's major production sites across the world • Ricoh announced participation in the UN Global Compact • Incorporated eco system conservation activities in the environmental action plan • Proposed the Three Ps Balance, which characterizes Ricoh Group's ideal society • Drew up the Environmental Standards for Paper Products
2004	• Released the imagio Neo 752/602 series, the first office equipment employing resource conservation technology, HYBRID QSU (Quick-Start-Up), using next-generation capacitors • Commenced the chemical substance management system (CMS) certification system • Ricoh Ohmori Office's VOC testing laboratory became the world's first manufacturer to be certified by Germany's BAM (Bundesanstalt für Materialforschung und -prüfung; Federal Institute for Materials Research and Testing)
2005	• Ricoh Americas Corporation awarded the Ricoh Sustainable Development Award at the International Science & Engineering Fair (ISEF), one of the largest science contests in the world for high school students • Employed biomass plastic in parts of the chassis of the high-speed multifunctional digital copier imagio Neo 602ec/752ec, becoming the first in the copier/printer industry
2006	• Released the imagio MP C1500 series of copiers, which realized significant reductions in maximum power consumption by employing GELJET technology • Newly released the imagio MP C4500/C3500 series of multifunctional digital color copiers equipped with resource conservation technology Color QSU (Quick-Start-Up) • Ricoh publicized its Year 2050 Long-Term Environmental Vision • The Ricoh Group established a management system for chemical substances contained in products • Completed soil contamination surveys at 1,022 non-production sites, on both owned and leased property, identified soil contamination risks at all of the Ricoh Group's sites including production sites. Such sites are now being managed.
2007	• Ricoh signed the UN Global Compact and became a signatory to Caring for Climate: The Business Leadership Platform • Developed the CO_2 calculation tool RICO$_2$RET (RICOH CO_2 Reduction & Evaluation Tool) and held a briefing for suppliers • Released the imagio MP C7500/6000 employing a new color PxP toner (a polymerized toner) that realizes low-temperature adherence
2008	• Ricoh participated in the Japan Business Initiative for Conservation and Sustainable Use of Biodiversity (JBIB) • Ricoh signed the Leadership Declaration on the "Business and Biodiversity Initiative" at the ninth meeting of the Conference of the Parties to the Convention on Biological Diversity (COP 9) held in Germany • Released the imagio MP C2200 multifunctional digital full-color copier series for which our new plant-based plastic components with a higher biomass content (approximately 70%) are used • Ricoh supported and signed the Poznan Communique by "CLG: Corporate Leaders' Group on Climate Change" announced at the 14th Conference of the Parties to the Framework Convention on Climate Change (COP 14)
2009	• Drew up the Ricoh Group Biodiversity Policy • Established the Ricoh Group's Medium to Long-Term Environmental Impact Reduction Goals (2020 and 2050) for the three key areas of energy conservation, resource conservation, and pollution prevention

Data Index by Term

Our earth, Our tomorrow

Please send all comments and inquires regarding this report to:

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