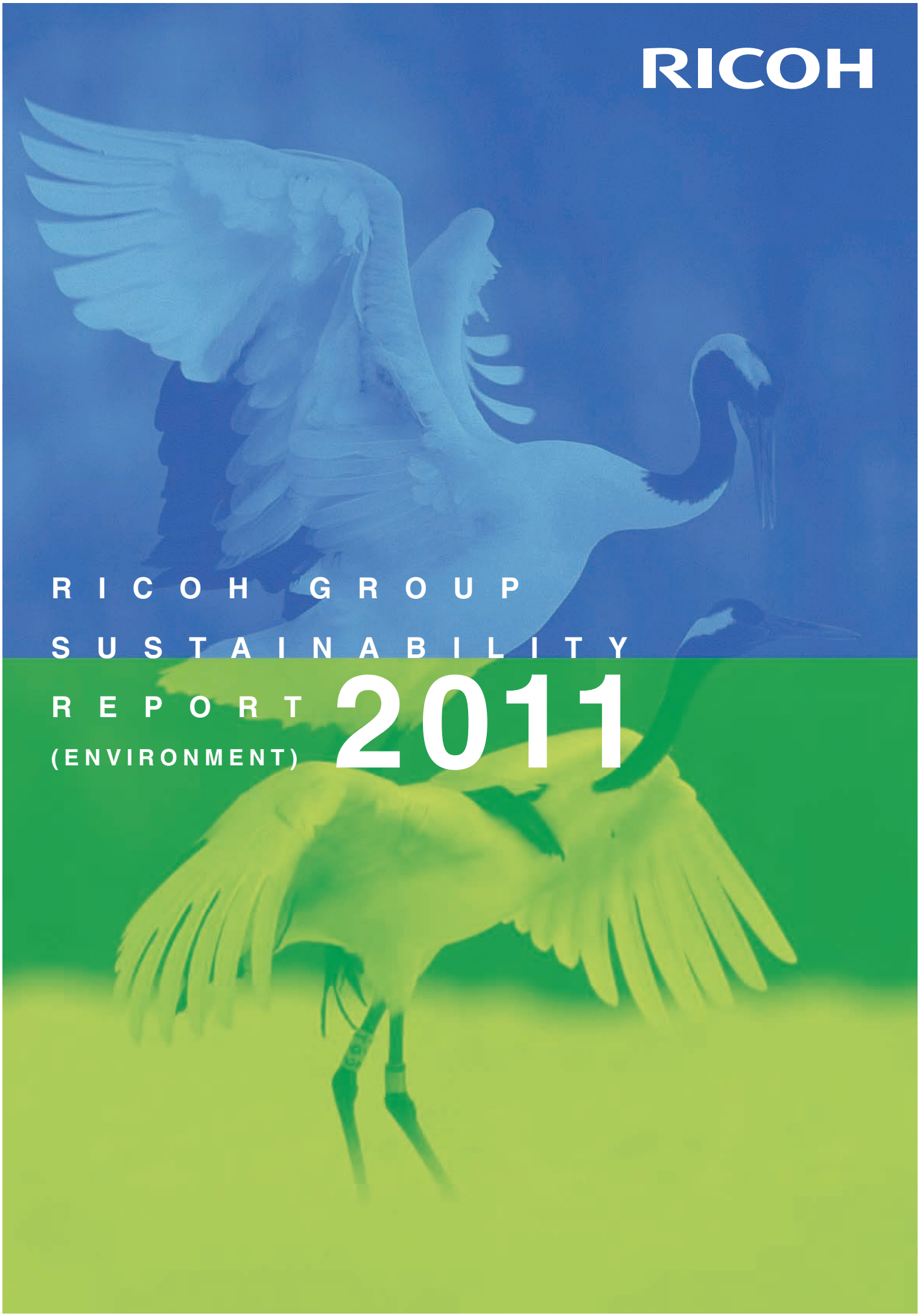
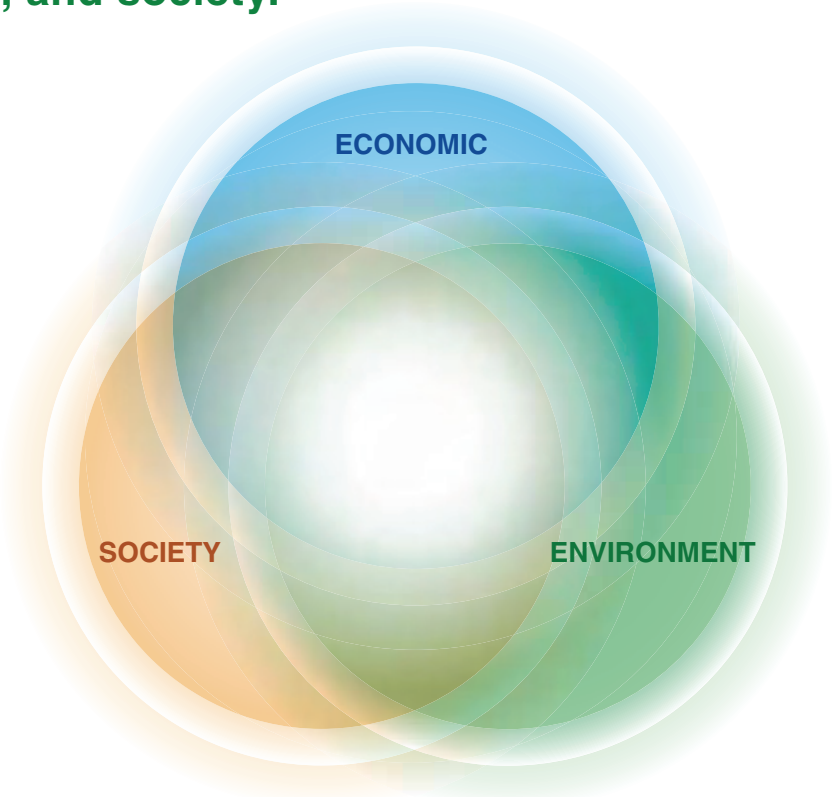
RICOH

RICOH GROUP SUSTAINABILITY REPORT 2011 (ENVIRONMENT)



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

Based on the belief that environmental, economic, and social 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 2011
(CORPORATE PROFILE)
http://www.ricoh.com/about/

- Corporate profile

Sustainability Report (Environment) 2011
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) 2011
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) 2011
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

In order to examine possible development of environmental reporting, we referred to the following documents:

- Ernst & Young Shin Nihon LLC
  Seven Questions CEOs and Boards Should Ask about "Triple Bottom Line" Reporting
- Robert G. Eccles and Michael P. Krzus (2010, John Wiley & Sons, Inc.)
  One Report: Integrated Reporting for a Sustainable Strategy

Cover photograph: Red-crowned crane
The red-crowned crane inhabits eastern Hokkaido, Japan. At about 140 centimeters tall with a wingspan of 240 centimeters, this crane species is one of the largest wild birds in Japan. Although they were considered extinct in the early 1900s due to excessive hunting, over a dozen red-crowned cranes were found again in 1924. As a result of protection efforts since then, the red-crowned crane population has increased to more than a thousand to date. However, the living environment of these cranes still remains harsh. In winter, cranes cannot survive without being fed by humans because many of their habitats, such as wetlands and surrounding forests, have been lost.

Editorial policy of the Ricoh Group Sustainability Report (Environment) 2011

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 they 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 is 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.

Solid sustainable environmental management for our business growth and for the creation of a sustainable society

Significant changes in the public perception and attitude toward energy in the wake of Japan's earthquake, tsunami and nuclear disaster

The world economy today is going through a significant change typified, for instance, by rapidly intensifying globalization and the remarkable growth of emerging economies. At the same time, various global problems threatening the sustainability of the Earth and human society have been worsening. These include the shortages of resources, energy, food, and water, as well as the issue of climate change.

Japan's earthquake and tsunami and the resulting nuclear plant accident on March 11, 2011 became a stark reminder of both the importance of ensuring a stable energy supply and the associated inherent risks. This natural disaster has had a great impact on the Japanese people's ideas of appropriate energy consumption. Such a change has been noted not only in Japan but also in the rest of the world. Now is the time that we should rethink the paradigm of contemporary society, which is based on the massive use of energy and resources, and accelerate our efforts to shift to a sustainable society that uses finite resources effectively and efficiently.

Through its sustainable environmental management, the Ricoh Group has long been contributing to helping our society move from the current model based on mass consumption and mass disposal to a society based on a sustainable business model. To ensure all the people around the globe, including those in emerging countries, will be able to lead a prosperous and convenient life, it is imperative to reduce our impact on the environment to a level that the Earth's self-recovery capabilities can manage. This calls on corporations to develop and establish new, innovative business models which can lead such transformational efforts in society. With this recognition, the Ricoh Group has been and will be contributing to building a sustainable society by using its technologies and know-how developed over the years to offer innovative products and services which enable effective use of resources and energy.

Creating new businesses that help society reduce its environmental impact

The Ricoh Group constitutes a global corporation. Our development and production bases are located in five major regions and our sales and support network covers more than 180 countries and regions. Under the new three-year management plan from fiscal 2011, we are currently focusing on the four objectives specified in the management plan: business creation and integration, acceleration of global expansion, highly efficient business operations and acceleration of the promotion of sustainable environmental management. We also recognize that our customers' business and work styles have been changing in response to the rapid development of an information society and emerging resource and energy issues in recent years and that it is a pressing task for us to achieve the shift of our business models and create new businesses to keep up with such changes on the customers' side.

To stay relevant to customers who have evolving values, the Ricoh Group is working to shift its business models from a traditional equipment-centered business to an integrated solutions business which offers both products and services as a best mix to solve customer issues. One such solutions-based business is the Managed Document Services (MDS), in which Ricoh manages all document-related processes on behalf of customers and thereby continuously provides benefits in the form of workflow improvement, cost reduction and environmental footprint reduction.

Another example is the launch of an eco solutions business. We will offer light-emitting diode (LED) illumination and other products and services that will reduce the energy requirements of customers' entire office operations. Through this new business, we will help customers reduce their environmental impact while maintaining a comfortable and highly productive working environment.

These new businesses, designed to offer total solutions to problems in customers' offices, rather than only providing imaging equipment, save customers from unnecessary energy use, operating costs, and operational processes, and help them realize a lower environmental impact and a more sustainable business. Customers can leave everything related to their office operations to the Ricoh Group, which has unparalleled expertise in office operations and energy efficiency improvements, and this in turn will allow us to grow as a corporation.

Shiro Kondo
President and Chief Executive Officer

近藤史朗

Promoting solid sustainable environmental management as a growth engine of our business

Committed to sustainable environmental management that aims at both environmental conservation and profit making, all employees of the Ricoh Group, irrespective of their department, are engaged in efforts to reduce environmental impact in the Group's operations. Environmental considerations are taken into account in everything we do. To reduce the environmental footprint from a long-term perspective, we are also sharing our internal experience and expertise in sustainable environmental management with our stakeholders, including suppliers and customers. Examples of collaborative achievements with business partners include the development of a network for used product collection and recycling for effective resources use, as well as the enhancement of the support service system. And, of course, we have been striving to develop attractive products which customers will cherish and wish to use for many years. In fiscal 2010, Ricoh released a color MFP which recovers from energy-saving mode within 10 seconds, something which was previously considered difficult, if not impossible, for color MFPs. This quick recovery capability facilitates more extensive use of energy-saving mode, which will reduce power consumption by more than 80 percent.

Aspiring to serve customers as their long-standing trusted partner, the Ricoh Group strives to offer optimal solutions to customers any time they need to address business and social challenges. Toward this goal, we will continue to promote our solid sustainable environmental management and use it as our growth engine when addressing the shift of our business models and the creation of innovations.

Here we report the results of environmental impact reductions and economic value creation in fiscal 2010.

Reducing environmental impact

In fiscal 2010, we continued to work to achieve the reduction target specified in our Environmental Action Plan for fiscal 2008–2010, or a 20% reduction of the integrated environmental impact in fiscal 2010 compared to the levels of fiscal 2000. Specific actions taken include encouraging customers to make greater use of energy-saving and duplex copying functions, and making our own efforts (e.g., technological development and improvement of production process and product designs as well as further promotion of resource circulation) in the following three priority areas: energy conservation and prevention of global warming; resource conservation and recycling; and pollution prevention. Although we were on track to achieve the reduction goal of 20% in fiscal 2009 (the environmental impact was 79.8% of the fiscal 2000 level) due to our reduction efforts and the impact of the global recession, we finished fiscal 2010 with an integrated environmental impact of 83.1% of the base year, mainly because of increased sales volume amid economic recovery. Compared with the beginning of the three-year action plan, the environmental impact level of the fiscal 2010 showed a slight improvement. Going forward, we will continue our efforts to achieve the Mid- and Long-Term Environmental Impact Reduction Goals announced in April 2009 and focus on environmental impact reduction through new businesses, such as IT-based services and comprehensive ESCO business*, which covers MFPs, printers, LED lights, and others.

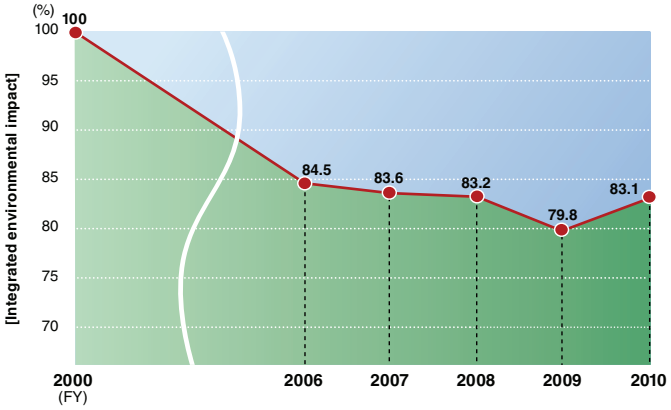
* ESCO stands for Energy Service Company, a business that contributes to the enhancement of customers' profitability and the conservation of the global environment by offering comprehensive services to make their buildings and factories more energy efficient. The ESCO guarantees the effect of the energy saving measures and receives the fee that matches the benefits the customer received.

Business results for fiscal 2010

The Ricoh Group's consolidated net sales in fiscal 2010 decreased by 3.7% from the previous year to ¥1,942.0 billion. The earthquake and tsunami which struck the eastern part of Japan in March 11 2011 caused damage and destruction to our facilities in the affected area and hampered our sales and shipments in Japan and other areas. As a result, our sales in Japan saw a 0.1% decline from the year earlier. Fiscal 2010 sales outside of Japan decreased by 6.5% from the previous year, although sales in non-Japanese markets grew by 3.5% if the effects of currency rate fluctuations are excluded. In terms of breakdown by region, the Americas posted a 6.4% decline from the previous year, mainly due to the effects of foreign exchange rates; a 9.7% drop in Europe, also attributable to the sharp rise of the yen; and a 5.5% increase in other regions including China and other Asian markets. Our operating income decreased by 8.8% on a year-on-year basis to ¥60.1 billion.

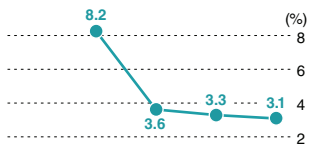
* For more details on the business results, please see the "Investor Relations" page on our website at: http://www.ricoh.com/IR/

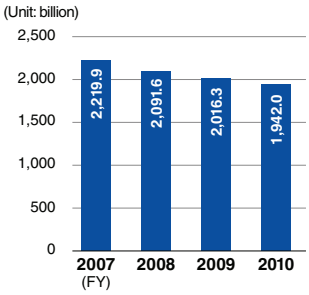
Changes in integrated environmental impact (Operations in advanced nations)*



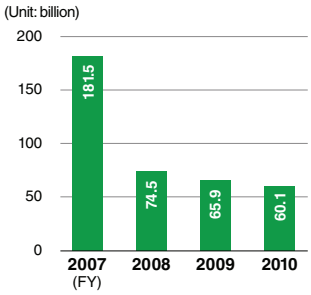
* The production and printing businesses are not included.
* Fiscal 2009 data has been revised to correct an error found in the relevant data collection process.

Net sales and operating income on net sales





Operating income



■ Topics on sustainable environmental management in fiscal 2010

Ricoh provided the document output operation and management service at COP 10. See page 53.
Ricoh Electronics, Inc. (our manufacturing subsidiary in the U.S.) installed a photovoltaic power generation system. See page 42.
Ricoh released the imagio MP C2801/3301, its first digital color MFP with a recovery time from energy-saving mode of less than 10 seconds. See page 27.
Ricoh released the IPSiO SP C320, a color laser printer featuring "Eco Night Sensor." See page 28.
Ricoh developed next generation wastewater treatment technology by using its ozone micro/nano-bubble technology for its polymerized toner production process. See page 25.

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

Mankind 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. 2. See page 15.

- 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. By preparing for these risks and preventing them from materializing (in the form of noncompliance, 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.
3. See page 17. 4. See pages 19 and 21.

Commitment to Society

■ The UN Global Compact

Ricoh became the second Japanese company to sign the UN Global Compact (GC)[1] in April 2002. In June 2007, Ricoh also became a signatory to Caring for Climate: The Business Leadership Platform[2] by GC.

1. 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. (http://www.unglobalcompact.org/)
2. http://www.unglobalcompact.org/Issues/Environment/Climate_Change/

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

The Japan Business Initiative for Conservation and Sustainable Use of Biodiversity (JBIB)[3] 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.

3. http://www.jbib.org/en/

■ Leadership Declaration on the "Business and Biodiversity Initiative"

Ricoh signed the Leadership Declaration on the "Business and Biodiversity Initiative"[4] 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.

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

■ 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.

■ Cancun Communiqué on Climate Change

In December 2010, Ricoh announced its support for the Cancun Communiqué[5], which urges world leaders to agree an ambitious, robust and equitable global deal on climate change. 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.

1. Energy efficiency across all sectors
2. Low carbon energy systems
3. Carbon Capture and Storage (CCS)
4. Emissions from other greenhouse gases
5. Urban planning, land-use management and land use change

5. http://www.cancuncommunique.com/

* Ricoh Announces Support for the Cancun Communiqué on Climate Change
http://www.ricoh.com/environment/history/all/2010/1208_01.html

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 oekom 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)
• 2009 (in the IT sector) http://www.oekom-research.com/index_en.php?content=news_20090310170845

■ Received 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

2005–2011 (for seven years in a row) http://www.global100.org/

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

2007

Ricoh Stocks Incorporated in Leading SRI Indices*

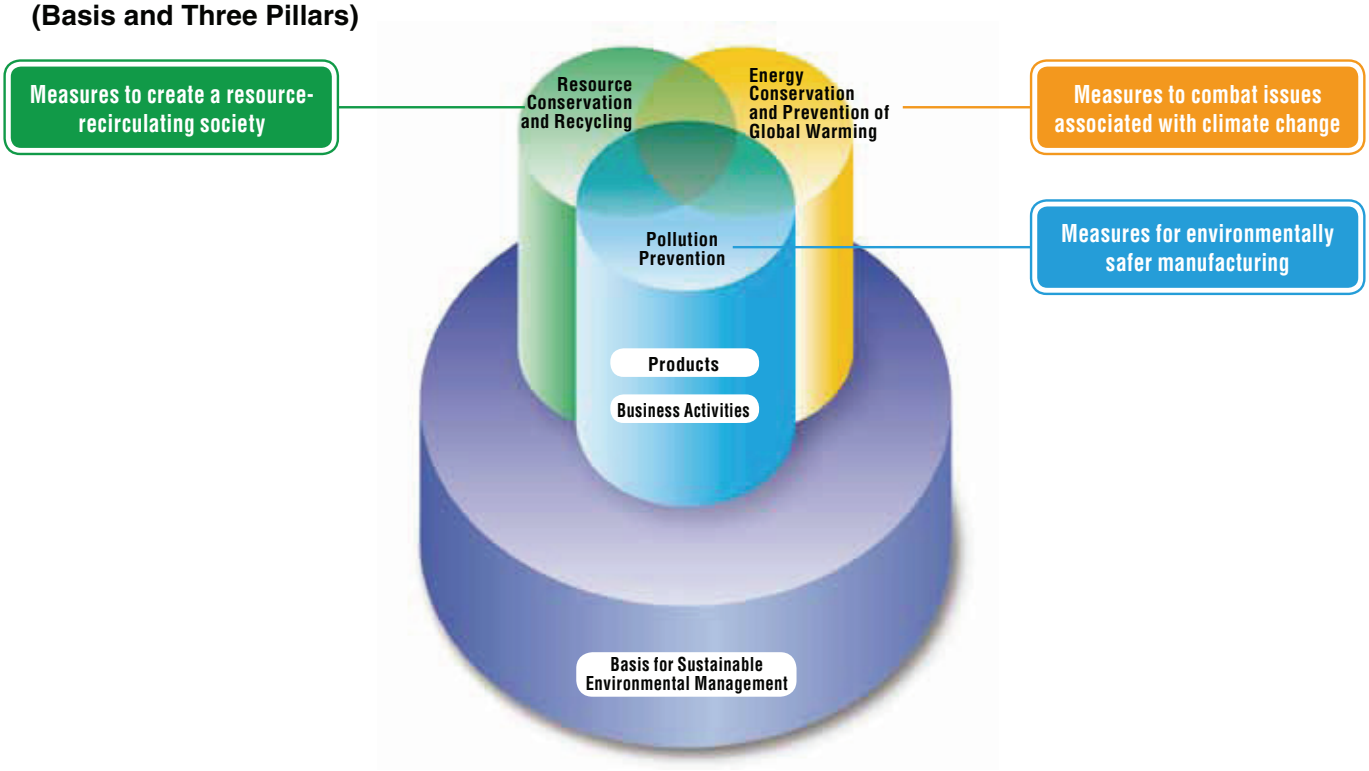
In Japan, Ricoh's stocks are incorporated in a large number of eco funds and SRI funds. In addition, the Morningstar Socially Responsible Investment Index has included Ricoh since its establishment in 2003. Ricoh has also been a constituent member of the FTSE 4 Good Global Index, an index published by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

* As of May 1, 2011

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., 227 subsidiaries, and 7 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 109,000 employees.

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

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<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

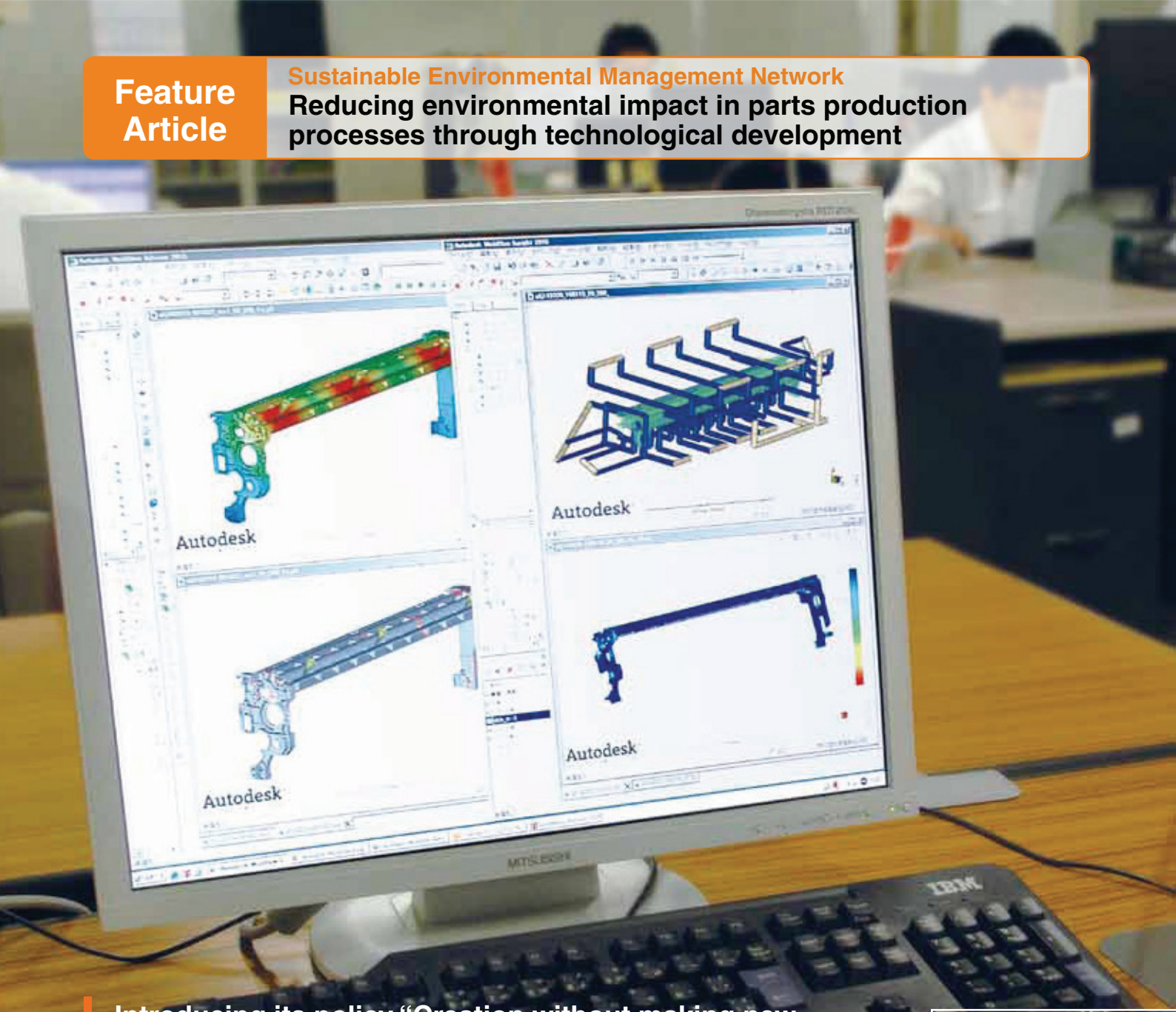
The Ricoh Group provides products and services under the following brand names.

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

Feature Article

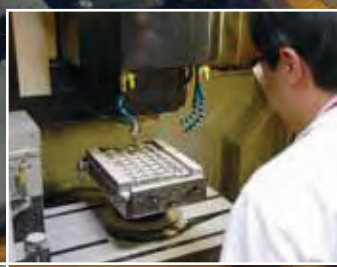
Sustainable Environmental Management Network

Reducing environmental impact in parts production processes through technological development



Introducing its policy "Creation without making new parts and without making many prototypes," Ricoh has developed "Technology for Molding Processes with an Ultra-Short Cycle Time," a technological breakthrough which substantially slashes the time, cost and environmental impact of parts manufacturing processes.

Ricoh Production Engineering Center has successfully developed production technologies that utilize simulation-based visualization to improve the production line even from the design stage. These technologies, enabling the dramatic reduction of operating costs and environmental impact, are being introduced in a growing number of our production sites worldwide.



Pursuing a shorter cooling time in the molding process

Ricoh strives to reduce environmental impact in its products across their entire lifecycles. The product parts manufacturing process has of course been playing an integral role in these efforts. Our Production Engineering Center, which is developing and improving overall technologies for parts production, has long been working to reduce both the related costs and environmental impact of parts production processes by creating thinner-walled materials, recycling, introducing highly efficient equipment, and conducting other activities. In 2005, the Center started work on the development of a "Technology for Molding Processes with a Ultra-Short Cycle Time,"[1] enabling more efficient production of molded resin parts and thereby a substantially shorter time for mold processing.

Molded resin parts account for some 40% in terms of the number of items used in imaging equipment such as copiers and printers. They are made by casting heated resin into molds and removing it after cooling. The time to cool the cast resin accounts for more than 60% of the total time required for this process, according to our study. This means a shorter cooling time would lead to the substantial reduction of production costs and environmental impact. On the assumption that cooling cast resin rapidly and removing it more quickly are the two key enablers of achieving a shorter cooling time, we conducted a three-dimensional analysis of the molded parts' heat distribution during the cooling process by using CAE[2]-based software for analyzing mold cooling processes.

1. A technology for producing product parts in a short cycle time. We use the term "ultra" when the required time is reduced by half or more compared with a corresponding conventional process.
2. CAE stands for computer aided engineering, referring to the use of computer-based quantitative simulation to support a preliminary study regarding the design of product parts and related manufacturing processes, and the tools required. In the field of mold processing, the practice/tool, which is often called "injection-molding CAE," is used for preliminary study to determine desirable product shapes and mold specifications.

Considerable improvement of mold design through the visualization of cooling processes

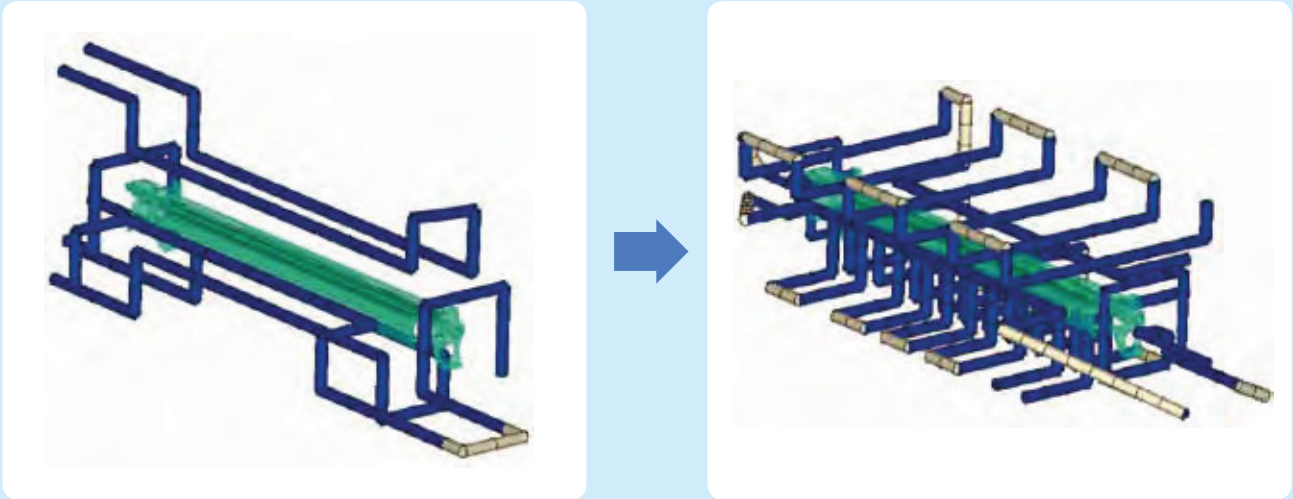
Molds for product parts are equipped with water pipes to cool the cast resin. Ideally, the pipes are placed as close to the resin as possible, in order to cool the resin as quickly as possible. However, designing molds with such a layout is very difficult because it involves very complicated mold structures and because developing a model of a water pipe layout is time-consuming.

To overcome this difficulty, we conducted detailed simulation using the CAE-based software and successfully identified an effective water pipe layout that enables rapid cooling. Furthermore, the water pipe design has become an automated process through the collaborative use of our computer-aided design (CAD) system and CAE. Now, product design staff can freely create a model by checking the simulated model on a PC monitor. As a result, we are able to create molds for product parts which are equipped with a far greater number of water pipes close to the cast resin than was technically possible before. See Figure 1.

Reducing time for mold design by highly accurate simulation

As the next step, we examined the timing of removing the cast parts from the molds. Our heat distribution analyses revealed that there are certain areas (such as thick-walled areas and areas which cannot disperse heat due to their structures) which take much longer to cool down because heat is unevenly concentrated there. Simulation data suggested that an improved mold structure which does not cause uneven heat distribution and ensures that the entire mold is cooled at a consistent pace would allow molded parts to be removed from the molds earlier without compromising the accuracy of their dimensions. This meant that they could be removed before their temperatures dropped as low as under the

Figure 1 **Water pipe models: Before and after improvement**



existing method. Based on the simulation results, a request for a change in mold design, such as the removal of thicker-walled areas to eliminate uneven heat distribution, was submitted to the design department. See Figure 2.

"Without a specific rationale for improvement in the basic design phase, no proposals for improvement can be submitted to the design department. Using the CAE-based analysis allows us to forecast with greater accuracy and include specific quantitative data in our internal proposals, which contributes to effective concurrent activities[3] aiming for dramatic efficiency improvements in our production processes," said Takeshi Hasegawa, the Production Engineering Center. See Figure 3.

3. Cross-disciplinary activities which coordinate and control related manufacturing processes across all relevant functions, such as product development and design, material procurement, production technologies, manufacturing, sales, marketing, service and others.

Reducing processing time and required facility size by half

Such improvement in mold design has resulted in the substantial reduction of cooling time and halved the cycle time of mold processing.

Figure 2 **Main unit design models: Before and after improvement**

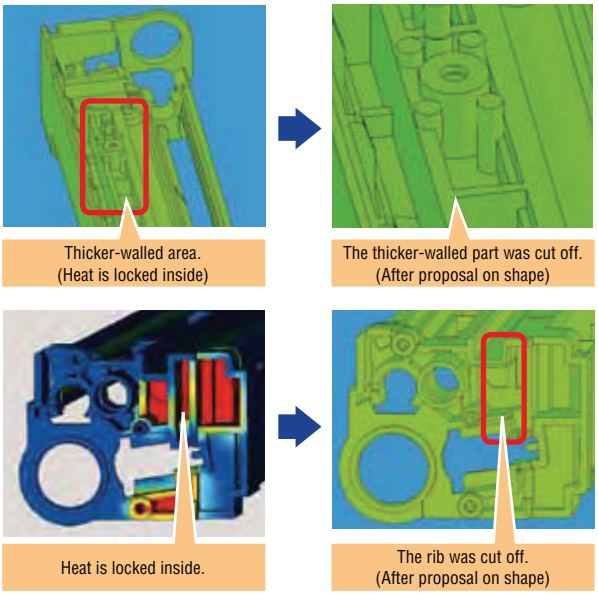
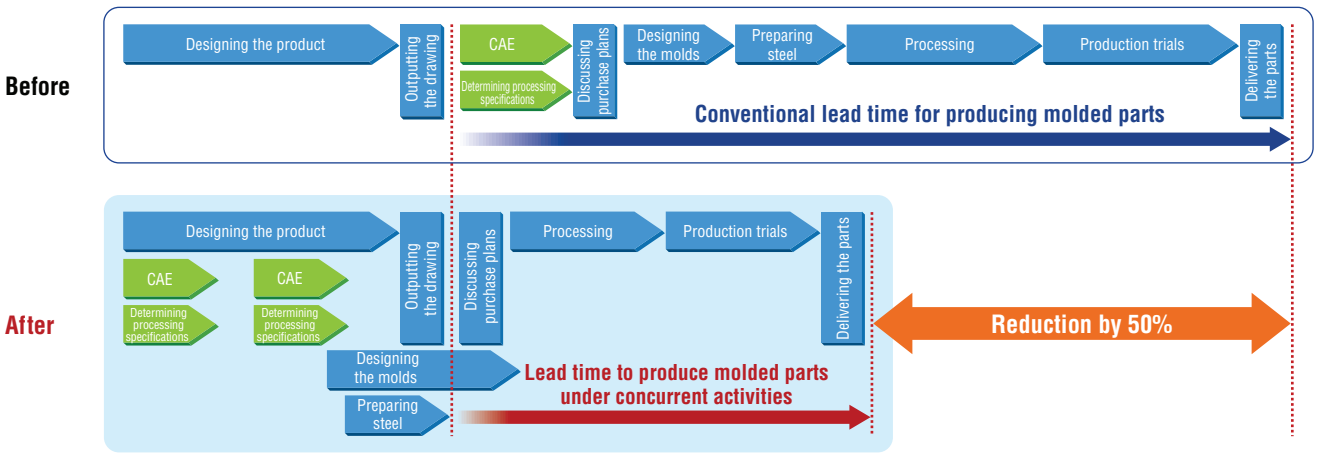


Figure 3 **Concurrent activities to achieve shorter lead time for producing molded parts**



Realizing our policy of "Creation without making new parts and without making many prototypes" through original simulation technology

Takeshi Hasegawa
Deputy General Manager
Parts Engineering Office,
Third Center
Production Engineering
Center

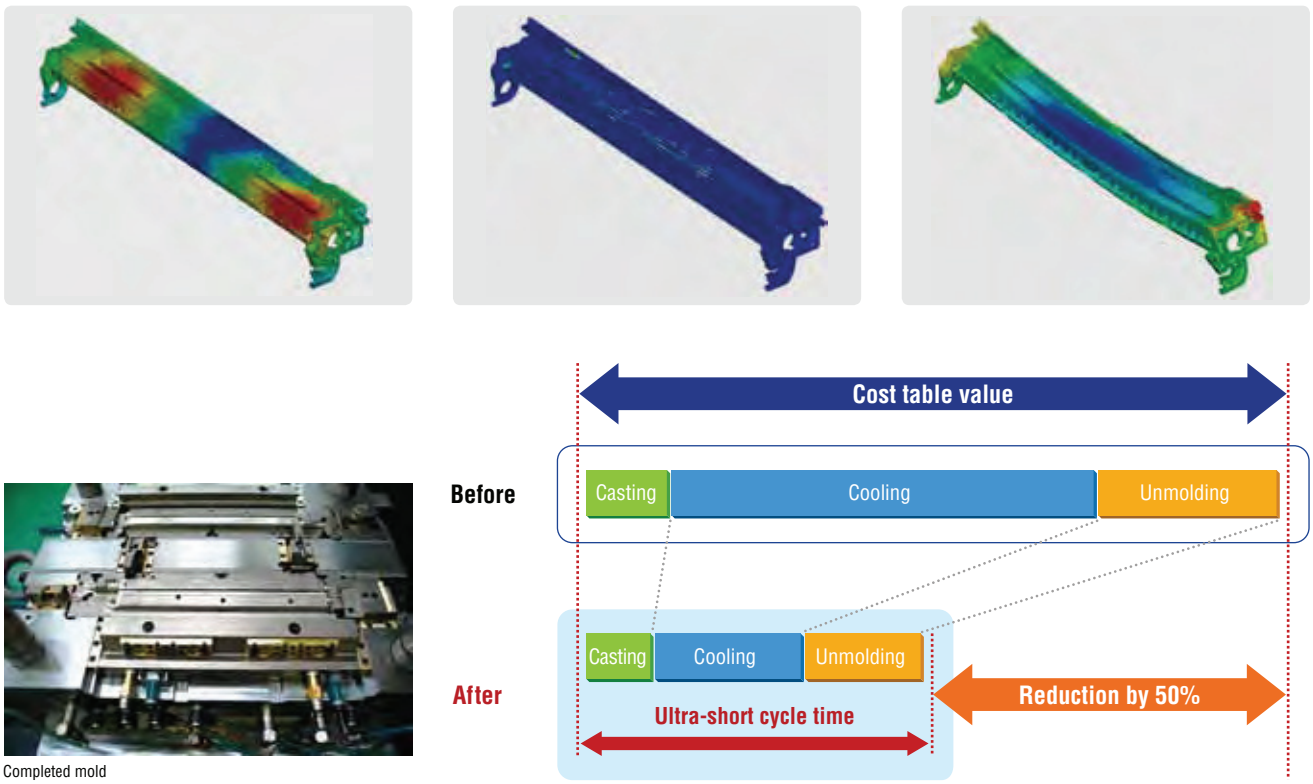
"Through elaborate customization that is tailored to the product parts concerned, you can transform CAE software, which is commonly used by many manufacturers, into an effective tool for highly precise design simulation. We at the Production Engineering Center use this tool effectively to develop Ricoh's original production technologies. Under the policy of "Creation without making new parts and without making many prototypes," we will continue to contribute to environmentally responsible manufacturing which thoroughly eliminates waste and redundancy."

"Reducing the processing time by half has resulted in halving associated energy consumption and labor costs, and even reducing the number of molds and mold making devices in use by half. Application of this technology will enable the substantial reduction of production costs and environmental impact of the manufacturing of molded parts," commented Akinori Tanada of the Production Engineering Center. See Figure 4.

In addition to promoting the Technology for Molding Processes with an Ultra-Short Cycle Time across the Ricoh Group, the Production and Technology Center is also focusing on training engineers who can conduct maintenance and repair work to maximize the useful life of molds. Experienced engineers with special expertise in maintenance visit our parts manufacturing sites around the world to provide practical training on the development of maintenance plans, troubleshooting and other necessary skills.

Toward establishing an efficient production system with low environmental impact, the Ricoh Group, ranging from design to product planning functions, is striving for technological innovation and continually introducing new production technologies in its production bases in the five major regions around the world.

Figure 4 **Reducing cycle time for molded parts production: Before and after the introduction of new technology**



Efficient manufacturing directly leads to the reduction of environmental impact

Akinori Tanada
General Manager
Parts Engineering Office,
Third Center
Production Engineering
Center

"At the Production Engineering Center, the main target of our improvement activities is cost reduction. That said, we are also contributing to reducing environmental impact because greater manufacturing efficiency directly results in lower environmental impact. The energy and resource saving effect of the recently developed Technology for Molding Processes with an Ultra-Short Cycle Time is remarkable. Currently, the application of this technology is limited to the manufacturing of molded parts, which requires high precision. We are planning to introduce it to virtually all product parts, including the outer cover, to realize even greater benefits."

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

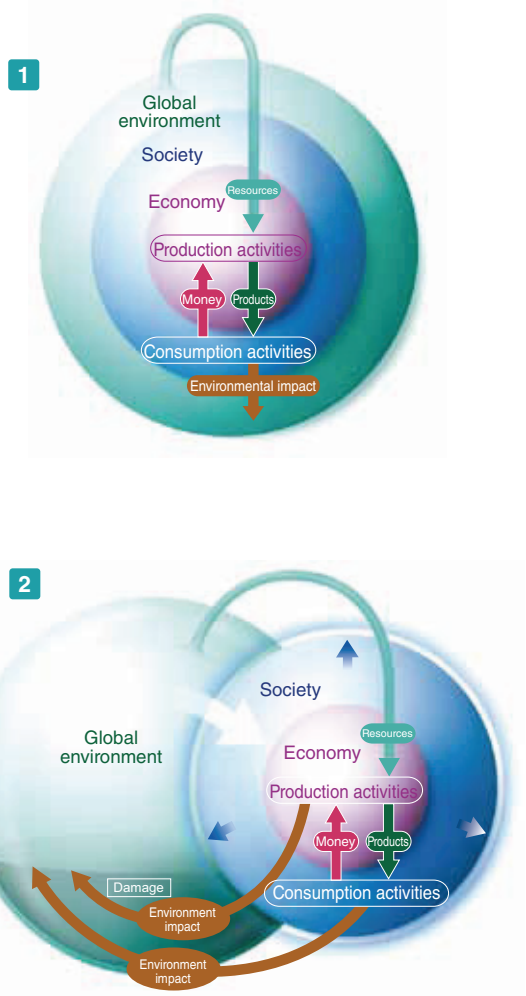
The Industrial Revolution started in 18th century England and spread around the world quite rapidly. Industrialization symbolized a rich society, and people shifted toward a new energy- and resource-intensive lifestyle. It was the beginning of an age of mass production, mass consumption, and mass disposal. 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 mankind

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 mankind.

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.

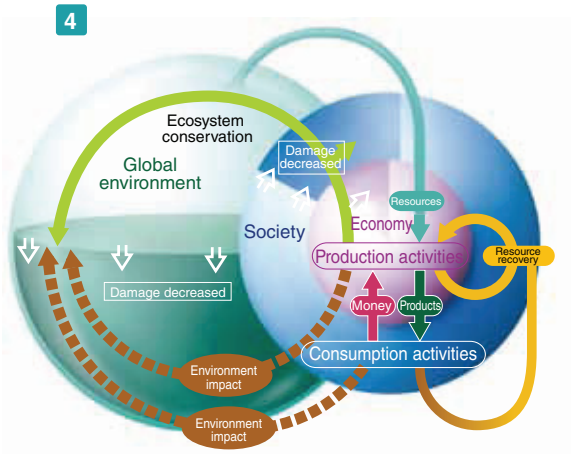
5 The Ricoh Group's efforts toward achieving the ideal society

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.

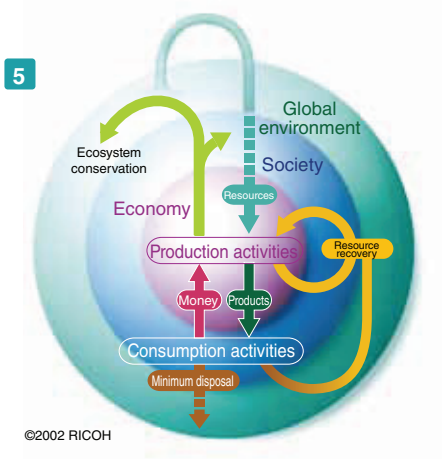
At the Ricoh Group, we have formulated the Year 2050 Long-Term Environmental Vision as a milestone on the path to attaining the ideal society. Based on this long-term vision, we have adopted the Mid- and Long-Term Environmental Impact Reduction Goals[1] and the Environmental Action Plans[2], and have 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 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.

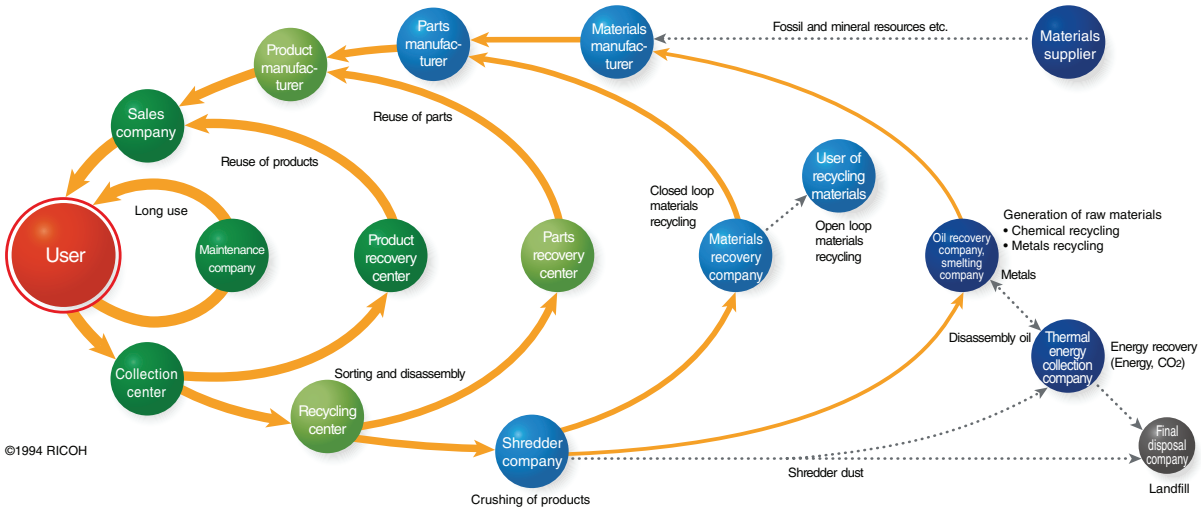
● Reducing the needs of new resources with greater use of recovered resources

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 the aspects of both business operations and products. 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 value.
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
   The 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.

"No Regrets" Policy

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

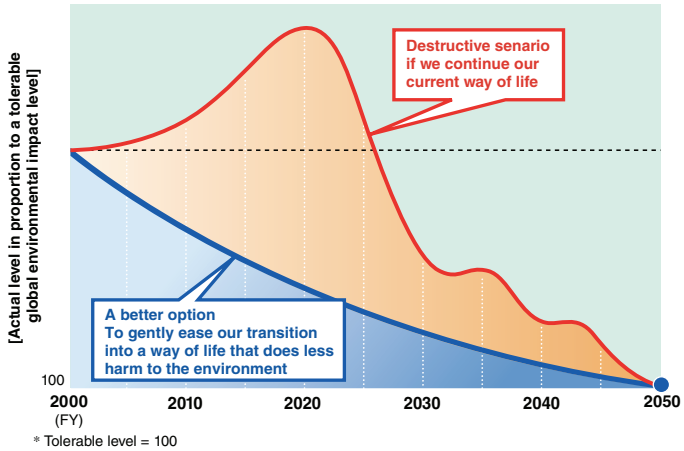
To conserve the global environment and achieve a sustainable society, it is necessary to limit environmental impact to a level within the Earth's self-recovery capabilities. To meet this requirement, we must first envision an ideal society and global environment; then we must create a long-term vision 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.

* Intergovernmental Panel on Climate Change

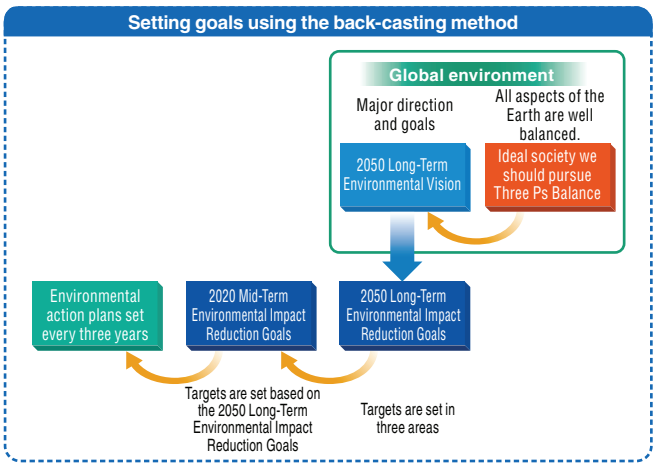
Setting targets using the back-casting method in the three areas

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).

For the new targets and new strategies we have established, the Ricoh Group will implement a new Environmental Action Plan, addressing future change in society in a proactive manner.

Process of formulating the 17th Mid-Term Environmental Action Plan

Environmental conservation activities at the Ricoh Group started with envisioning the ideal global environment. To realize that ideal future, we then established our ambitious goals, which all employees have been striving to achieve. Based on our belief that long-term perspectives are the key to continuous improvement of our efforts in this area, we formulated the Mid- and Long-Term Environmental Impact Reduction Goals to be achieved by 2020 and 2050, respectively. Using the back-casting method, we also set a Mid-Term Environmental Action Plan every three years.

The new Environmental Action Plan for fiscal 2011 to fiscal 2013, the period corresponding to the duration of the 17th Mid-Term Management Plan period, is designed to address pressing global issues such as the acceleration of global warming and the depletion of natural resources, while taking into account the business strategies and the progress of the Ricoh Group in developing environmental technologies.

Targets and key strategies under the 17th Environmental Action Plan

The Ricoh Group is determined to improve and accelerate its sustainable environmental management activities by implementing the 17th Environmental Action Plan, the targets and key strategies of which are summarized below:

(1) Promoting business activities and technological development which enable both business growth and global warming prevention

The Ricoh Group's 17th Mid-Term Management Plan specifies that we will aim to increase the efficiency of our core business, expand our service-based offerings, launch new businesses, enter emerging markets and take other necessary measures as part of our growth strategy. Although it is anticipated that business growth will inevitably entail the increase of CO_2 emissions from production processes, we intend to hold the net emissions increase to zero by aggressively developing environmental technologies and improving production processes.

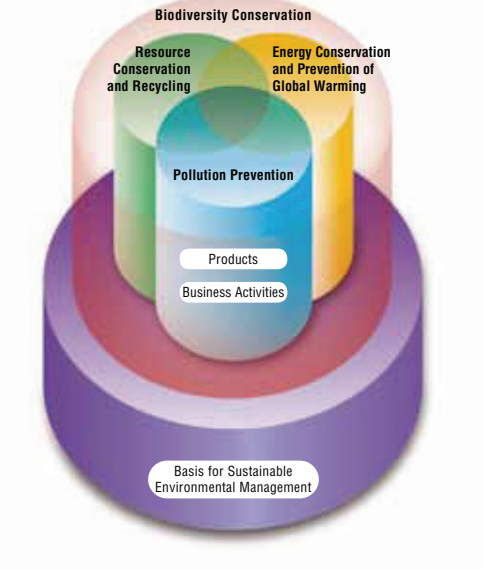
We are also aiming to reduce environmental impact across the entire lifecycle of our products. To this end, we will focus on developing products with enhanced energy efficiency and proposing solutions to not only reduce the energy consumption associated with the use of our products but also to slash CO_2 emissions from our customers' entire office operations.

(2) Effective use of resources toward building a resource-recirculating society

In our manufacturing processes, we will strengthen our efforts to make our products smaller and lighter, and to reuse and recycle used materials in order to minimize the input of new resources.

On the R&D front, we will focus mainly on: promoting the use of recycled materials, adopting common modules for product parts in order to realize the long-term reusability of those parts, establishing a technology for determining the remaining useful life of a product part, and developing technologies for recycling used products in order to achieve a low environmental footprint and low associated costs, as well as other measures. We will also work to enhance our recycling network by developing and strengthening the infrastructure to collect used products on a global basis.

The Ricoh Group's Sustainable Environmental Management (from fiscal 2011 onwards)



We will also work to effectively reduce CO_2 emissions in our logistics and transportation operations by visualizing the emissions levels worldwide, based on actual records regarding product delivery and the transportation between our production sites.

(3) Creating environmentally safe products and strengthening chemical substance management

We will aim to take our chemical substance management system to an even higher level. In addition to chemical substances under regulatory requirements, we will reduce the use of other chemical substances with high environmental risks or replace such substances with safer alternatives. We will also continue our efforts to reduce the emissions of environmentally sensitive substances from our products in use and maintain our compliance with the Blue Angel requirements. At the same time, we will work to establish related measurement and assessment technologies and develop emissions reduction technologies to prepare ourselves for possible future revision of the regulatory requirements.

(4) Biodiversity conservation activities for maintaining and restoring the Earth's self-recovery capabilities

To help improve the Earth's self-recovery capabilities, the Ricoh Group has been conducting tree planting and other biodiversity conservation activities. In addition to these ongoing efforts, we will also contribute to the conservation of biodiversity in the course of our business activities. Specifically, we will work to reduce the negative impact of our operational sites on biodiversity, by reducing the use of pesticides and other chemicals and by removing alien species from our factory premises. As the initial step, we will conduct a survey to see how green spaces and greenery in our operational sites are managed and to identify the population and variety of alien species living there.

Environmental Action Plan for the period from Fiscal 2011 to Fiscal 2013

		Targets (Level to be attained)
1 Energy Conservation/ Prevention of Global Warming	**1) Reduce greenhouse gas emissions caused by production activities.**	
	- Reduce CO_2 emissions related to energy use.	- Reduce to the fiscal 2010 level or below (298,000 tons-CO_2 or less).
	- Reduce emissions of greenhouse gases other than CO_2.	- Reduce by 38% compared with the fiscal 2000 level to less than 25,200 tons-CO_2, even accounting for increases related to the expansion of business.
	2) Reduce greenhouse gas emissions caused by logistics activities.	
	- Reduce the total amount of greenhouse gases emitted by Ricoh Logistics System in connection with its operations.	- Reduce by 21% compared with the fiscal 2000 level to less than 7,600 tons.
	3) Reduce greenhouse gas emissions caused by sales and maintenance activities.	
	- Reduce the amount of CO_2 emitted in relation to the use of energy in sales and maintenance activities.	- Reduce by 21.5% compared with the fiscal 2000 level to less than 38,000 tons.
	- Monitor the amount of CO_2 emitted in relation to the use of energy in sales and maintenance activities and establish reduction targets by the end of fiscal 2011. - Attain the established targets above.	- Monitor the amount of CO_2 emitted in relation to the use of energy in sales and maintenance activities and establish reduction targets by the end of fiscal 2011. - Attain the established targets above.
	4) Reduce CO_2 emissions related to energy consumption of Ricoh products.	
	- Develop products that can meet the mid-term environmental impact reduction goals.	- Attain the total CO_2 emissions reduction targets set for fiscal 2013 related to product energy consumption.
	- Encourage customers to use the energy-saving mode.	- Conduct activities to promote use of the energy-saving mode.
	5) Reduce CO_2 emissions by encouraging the effective use of paper resources in relation to product use.	
	- Improve paper use reduction rate by promoting duplex and multiple-page function utilization.	- Conduct activities to promote duplex and multiple-page function utilization.
	6) Develop environmental technologies aimed at reducing mid- and long-term environmental impact.	
	- Develop energy-saving technologies to help achieve the Year 2020 Mid-Term Environmental Impact Reduction Goals.	- Engage in the development of energy-saving technology with the potential to contribute to achieving the Year 2020 Mid-Term Environmental Impact Reduction Goals. (Reduce the total lifecycle CO_2 emissions by the Ricoh Group by 30% from the fiscal 2000 level.)
2 Resource Conservation and Recycling	**1) Achieve greater reduction in input of new resources.**	
	- Reduce input of new resources by implementing 3Rs and switching to alternative resources.	- Increase reduction amount fivefold or more compared to the fiscal 2007 level.
	2) Contribute to reduction in input of new materials and parts by conducting sales activities for recycled products.	
	- Increase reuse of products both in Japan and overseas.	- 14,000 t/year in fiscal 2013 (global total)
	- Improve product recovery rates.	- Conduct activities to promote product recovery. Disclose recovery data.
	3) Reduce waste.	
	- Reduce waste generated from the thermal media business.	- Reduce waste proportionate to production volume by 26% from the fiscal 2007 level.
	- Reduce waste in manufacture of polymerized toners.	- Reduce waste proportionate to production volume by 22% from the fiscal 2007 level.
	- Reduce packaging material waste (cardboard).	- Reduce the amount of waste packaging materials for imaging equipment generated per production volume by 6% from the fiscal 2010 level.
3 Pollution Prevention	**1) Establish a more comprehensive risk assessment system by evaluating risks related to chemicals, including environmental and ecological impact.**	
	- Establish a risk management system for chemical substances that is applicable worldwide.	- Establish risk assessment techniques to estimate risks to ecosystems posed by chemical substances emitted into the environment during the manufacturing process. Based on the findings, take measures to manage and reduce the risks.
	2) Reduce the use and emission of environmentally sensitive substances.	
	- Reduce the amounts of environmentally sensitive substances used and emitted.	- Objective 1: Reduce the converted use and emission by 75% and 90%, respectively, from the fiscal 2000 levels. - Objective 2: Establish a weighting method for hazard levels set in GHS* and establish reduction targets for the converted use and emissions based on the GHS. * The Globally Harmonized System of Classification and Labeling of Chemicals
	3) Improve environmental functions of products.	
	- Reinforce measures to reduce chemical emissions.	- Comply with the Ricoh Standards for ozone, dust and VOCs. These standards meet the Blue Angel requirements.
4 Biodiversity Conservation	**1) Contribute to maintaining and restoring the Earth's self-recovery capabilities.**	
	- Implement corporate social responsibility programs to preserve biodiversity.	- Implement corporate social responsibility programs within the Ricoh Group.
	2) Implement programs to care for biodiversity within the premises of Ricoh plants.	
	- Identify impact on biodiversity within the premises of Ricoh plants and reduce the impact.	- Develop guidelines for the management of Ricoh Group's operational sites and ensure that all Ricoh Group operational sites manage their premises in accordance with the guidelines.

Environmental Action Plan up to Fiscal 2010 and the Results

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 23

- 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 29

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 43

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 26

- 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 26

1) Achieve Ricoh's energy-saving targets.

(3) Reduce greenhouse gas emissions in production activities. Page 39

- 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 49

- 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 54

- 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 37

(7) Contribute to the reduction of environmental impact at customers' sites. Page 51

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

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

(1) Improve environmentally-friendly functions. Page 33

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 45

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 33

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

Final Results

	While developing technologies to downsize products and extend their lives, we have been developing technologies to use recycled resources —now approaching 100% reuse and recycling— and to develop and utilize biomass-based materials and other renewable resources.
	Weight of parts reused reached 1,876 tons (target not met).
	Weight of parts reused reached 7,672 tons (target achieved).
	Amount of recycled plastic used reached 1,192 tons (target achieved).
	Amount of resources recirculated reached 28,161 tons (target achieved).
	We released the imagio MP 6001GP, a multifunctional digital copier using biomass toner, onto the market in November 2009 (target achieved).
	Waste generation increased by 8.6%, attributed to increased production and other causes (target not met).
	Ricoh Gotemba Plant: Reduced by 31.3% (target achieved). Tohoku Ricoh Co., Ltd.: Reduced by 18.4% (target not met). Ricoh Elemex: Reduced by 2.1% (target not met).
	REI: Reduced by 23.1% (target not met). RIF: Reduced by 14.1% (target not met). RPL: Increased by 20.3% (target not met).
	Reduced by19.5% (target achieved).
	We are developing technologies to make our products more user-friendly and more energy-efficient as well as a production process technology to maximize energy use efficiency.
	Our copiers, multifunctional copiers, and printers all meet energy-saving goals (target achieved).
	Emissions attributed to the businesses that already existed in the base year (fiscal 1990) were reduced by 14.1%, meaning the achievement of the target. However, total emissions including those attributed to new businesses started after fiscal 1990 were reduced by 9.6%, falling short of the goal. Therefore, Certified Emission Reductions (CERs) worth 4,279 tons were transferred to Japan's national account (target achieved).
	Increased by 20.3%, mainly due to the remarkable growth of the thermal media business and the shift of the production base to China (target not met).
	Emissions of GHGs other than CO_2 were reduced by 45.3 % (target achieved). In addition to the introduction of equipment to decontaminate PCF and other gases, efforts to reduce usage itself contributed to the successful result.
	Total CO_2 emissions by non-manufacturing subsidiaries in Japan decreased by 10.3% (target achieved).
	For the three years under review, average CO_2 emissions per ton-kilometer were reduced by 1.9% (target achieved).
	We collected examples of our ongoing CO_2 reduction activities jointly conducted with model suppliers since fiscal 2009, as well as examples of CO_2 reduction activities at other suppliers.
	We made proposals to customers to encourage them to use the energy-saving mode. In fiscal 2011, we will continue this as part of our proposal to help customers reduce their environmental impact both inside and outside Japan.
	We ensured compliance with the Blue Angle requirements enacted in January 2007. Twenty copier, multifunctional copier and printer models released in fiscal 2010 meet the Ricoh standards for ozone, dust and VOCs (target achieved).
	We started to discuss the risk assessment and management system regarding the emission of environmentally sensitive substances.
	Reduced the usage by 72.9% (target achieved).
	Reduced the emissions by 87.9% (target achieved).
	Greater accuracy was achieved in the estimated group-wide environmental debt by updating the removal, new installation and other relevant costs, and by conducting a more detailed survey on the status of asbestos at the all 22 Ricoh sites which covered up to Level 3 materials (target achieved).
	The influences caused by asset retirement obligations were identified and analyzed, and were incorporated into the financial accounting (target achieved).
	We have improved the system for information transmission we established in fiscal 2008 and the operations thereof. We have also established a system to collect chemical substance information for the purpose of REACH notifications (the initial due: May 31, 2011) (target achieved).
	All the Ricoh Group's targeted organizations (99) conducted biodiversity conservation activities (target achieved).

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.

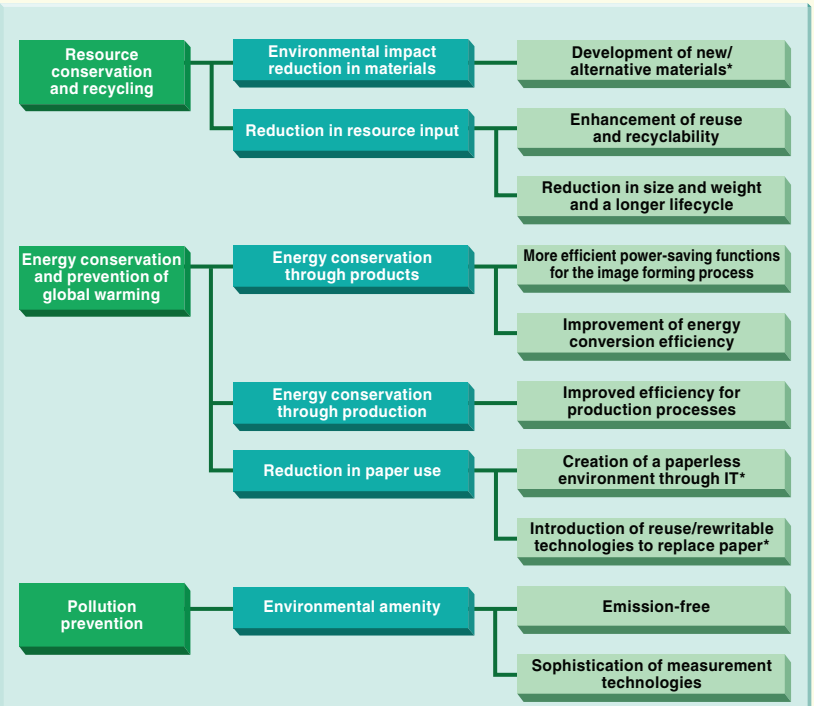
■ Concept of Product Development

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

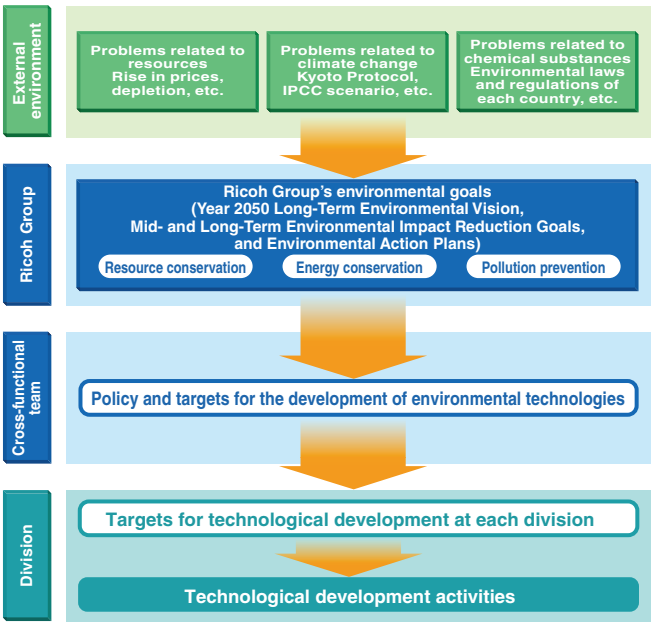


* Technologies that will contribute to environmental impact reduction throughout society.

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. It is also the basis 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 2010, we established new technological targets in order to enhance the environmental values of our business as well as to achieve the Group's 2050 Long-Term/2020 Mid-Term Environmental Impact Reduction Goals, and drew up technological strategies to achieve these new targets. Under the new Environmental Action Plan from fiscal 2011, we will promote the development of even more innovative environmental technologies by enhancing the system to facilitate cross-cutting cooperation between different technology areas, expanding the areas to be considered, and taking other measures. We will make even more effort to develop technologies which will help us achieve our 2020 Mid-Term Environmental Impact Reduction Goals and ultimately reduce the overall environmental impact of society as a whole.

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.

In recognition of its positive contribution to the reduction of environmental impact, Ricoh received the Award of the Director-General of the Industrial Science and Technology Policy and Environment Bureau, the Ministry of Economy, Trade and Industry in December 2010, the highest-ranked prize of an award program organized by the Life Cycle Assessment Society of Japan (JLCA) and sponsored by the Ministry of Economy, Trade and Industry and the Nikkan Kogyo Shimbun Ltd. The program started in 2003 with the aim of recognizing and thereby supporting Japanese corporations and other organizations which work to reduce environmental impact across the entire lifecycle of their products. Ricoh has been working to build and operate LCA systems into product design processes since 1994. We use our original LCA calculation tools in the product development phase, which—together with the collaboration with materials and parts suppliers—allows us to design products with minimal environmental impact. These efforts, as well as environmental technologies development and environmental conservation activities of the Group, led to this honor. The award panel commented that Ricoh won the grand prize primarily for: its long-term, systematic implementation of LCA as part of its product development process; its development and use of original LCA tools and expanded involvement of suppliers; and the development of an LCA system which can be used on a real time basis during the product development process so that product design staff can easily use the system as part of their operations.

Ricoh's General Manager of the Corporate Environment Division Satake at Tokyo Big Sight convention center (left)

Commemorative lecture by a member of the Ricoh LCA-based Design Technology Committee

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

Acquiring the first Green Choice eco-labeling certificate in the Philippines

<Ricoh (Philippines) Inc. (Philippines)>

In July 2010, Ricoh (Philippines) Inc. (RPH) became the first company to received the certification of Green Choice Philippines[1], a Type I environmental label program, in the multifunctional printing devices (MFPD[2]) category. RPH was invited to a forum for the sales promotion of Green Choice certified products and environmental and sustainability activities, titled "the Gathering Hands —Sustainability at Work" on July 21, 2010. Aficio MP 1600/1900/2000 L series were displayed in the forum venue to showcase the first certified MFP product series under this national eco-labeling initiative.

1. The National Ecolabelling Programme – Green Choice Philippines (NELP-GCP) http://www.pcepsdi.org.ph/ecolabel.html
2. Multi-function printing devices

Development of alternative materials using biomass resins

<Ricoh Co., Ltd. (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 that utilize 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 onto market in November 2009.

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 as by reducing the use of resources that are highly likely to dry up and focusing on alternative resources.

imagio MP 6001GP

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
2008	Released the imagio MP C2200 model, which employs a newly developed plastic component with roughly 70% biomass content
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 Technologies for Greener Production Processes

Development of dry washing technology
<Ricoh Co., Ltd. (Japan)>

To make the recycling of used image equipment parts such as toner cartridges more effective, Ricoh successfully developed "dry washing technology" in 2007. The newly developed technology allows toner stains on used cartridges to be removed without using water, by blasting them with tiny sheets of resin film at high speed. In 2009, we succeeded in applying the dry washing technology for the removal of adherents on the mounting of electronic components, and started to introduce it in our production sites around the world. In the automated soldering process for the production of electronic components boards, flux residue will accumulate and become fixed on the pallets over time. Previously, the residue was removed manually with the use of an alcohol-based solvent, which is very labor-intensive and inevitably generates liquid waste. Application of the dry washing technology to pallet cleaning has resulted in shortening the washing time from 120 minutes to less than 5 minutes, eliminated liquid waste generation, and reduced the environmental footprint to one-tenth or less of the previous levels.In fiscal 2010, Ricoh participated in Internepcon Japan, a leading electronics manufacturing technologies trade show, and displayed dry washing machines as a joint exhibit with electronic component manufacturer Tamura Corporation. The exhibit received a great response. Many manufacturing companies visiting the trade show expressed their interest in introducing this technology. Ricoh and Tamura Corporation are considering the commercialization and sales of dry washing technology, which will achieve substantial reduction in cost and environmental impact.

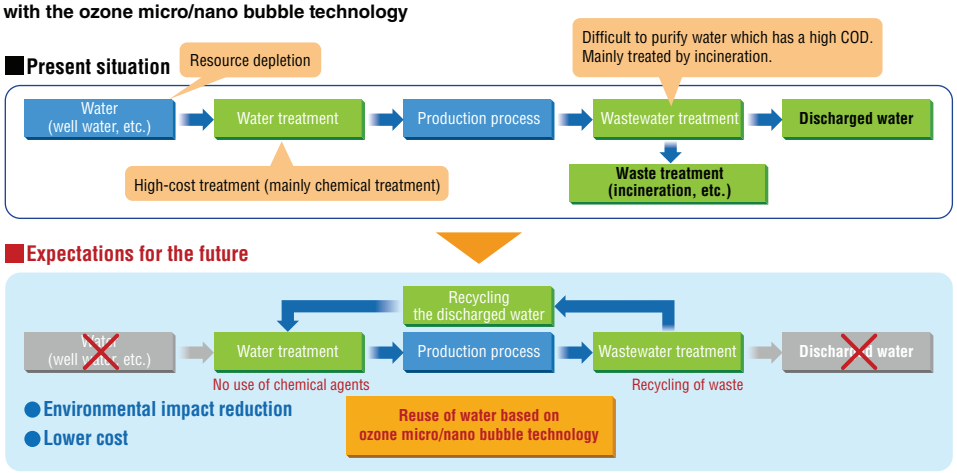
Showcased as a "washing revolution" machine at Internepcon Japan held in January 2011

Developing a next-generation water treatment technology based on ozone micro/nano bubble technology
<Ricoh Co., Ltd. (Japan)>

Ricoh has been developing production process/recycling technologies to reduce the environmental impacts of its production processes. As part of this effort, and specifically to solve the problem of wastewater from the polymerized toner production process, and also in consideration of the risk of possible depletion of water resources in the future, Ricoh began conducting a joint project to develop and make practical use of a technology to recycle water used in manufacturing with REO Research Institute and the Research Institute for Environmental Management Technology of the National Institute of Advanced Industrial Science and Technology. This project was completed in 2010. The next-generation water treatment technology developed in the project by applying REO Research Institute's ozone micro-nano bubble technology can purify waste water from the polymerized toner production process by using energy derived from the bursting of fine ozone bubbles (below 300 nano-meters* in diameter). Water treated through this technology can be reused in the production process, thus providing a closed water recycling system. At present, some wastewater from Ricoh's polymerized toner production process has to be incinerated because it is difficult to break down the water, which contains some very persistent organic matters, by chemical agents. In the closed water recycling system, however, the thermal treatment of the highly concentrated wastewater that is now conducted prior to the purification process will become unnecessary, and both the use of underground water and the amount of water eventually wasted from the process will be substantially reduced. The technology is expected to be applied to a range of production systems as an innovative environmental technology to save water resources and reduce CO_2 emissions. Ricoh aims to complete the closed recycling system for the polymerized toner production process within fiscal 2012.

*Nano-meter: 10^{-9} meter = one-billionth meter

Establishment of technology for recirculating and reusing industrial water with the ozone micro/nano bubble technology



At the Eco-Products 2010 exhibition held in Tokyo Big Sight in December 2010, Ricoh displayed an aquarium in which carp (freshwater fish) and sea bream were swimming together. The nano bubble technology gives unlimited new possibilities to water.

Development of user-friendly and energy-saving technologies

■ Concept

Products that are not easy to use will not be selected 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 and easy-to-use 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. Therefore Ricoh is helping to 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 2010

We released the imagio MP C3301/2801 series and the imagio MP C2201 series multifunctional color copiers during the fiscal year. These models feature Ricoh's original energy-saving QSU technology and are able to recover from energy-saving (sleep) mode within less than 10 seconds, the first in the multifunctional color copier segment to achieve this. In addition, the imagio MP C2201 series achieved Typical Electricity Consumption (TEC)[1] of 1.07 kWh[2] by reducing the aforementioned recovery time, requiring less electricity consumption, and achieving quicker switch to energy-saving mode after operation. Sales of copiers using QSU technology with a recovery time of less than 10 seconds from energy-saving mode have been steadily increasing, thus reducing CO_2 emissions by approximately 42,600 tons during the year (see Graph ❹).

1. The measuring procedure is defined by the international ENERGY STAR Program.
2. Indicates the value for imagio MP C2201 SP. The value for imagio MP C2201 SPF is 1.31 kWh.

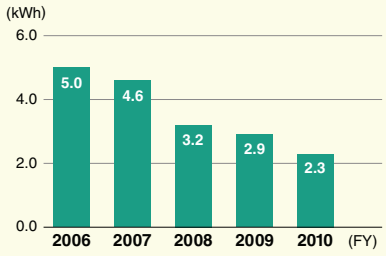
■ Future Activities

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.

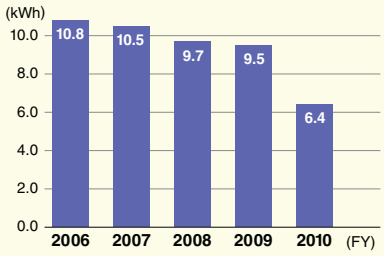
<Japan>

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

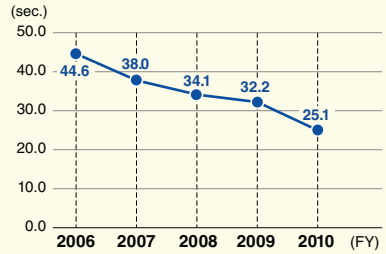
1. Energy consumption when recovery time is 10 seconds: Based on TEC measured for models with a 10-second recovery time from energy-saving mode in accordance with the method defined by the International ENERGY STAR Program. (Electricity consumption in standby mode was measured for models with a recovery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

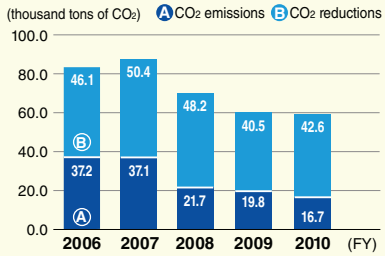
❸ Color copiers and multifunctional copiers



◎ 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



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

Evolution of QSU energy-saving technology

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. The use of the energy-saving mode helps reduce environmental impact, but the longer it takes to recover from the mode, the less it is used by customers. Ricoh focused its efforts on developing energy saving technologies in a way that satisfies both user-friendliness and energy conservation so that our customers will use the energy-saving mode more often. In 1997 we established an energy-saving committee to accelerate the development of such technologies, and developed QSU technology. In 2001, we launched the imagio Neo 350 series, the first multifunctional monochrome copiers equipped with QSU, and this product, which recovers from the energy-saving mode in only 10 seconds (30 seconds or more for previous models), received the Minister of Economy, Trade and Industry Prize, the highest prize of the Energy Conservation Grand Prizes presented by the Ministry in Japan. 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]

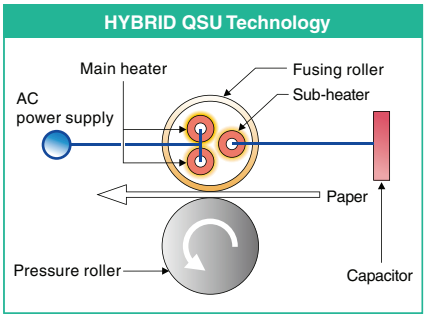
In fiscal 2006, Ricoh developed Color QSU technology, which adopts the IH[2] fusing system and successfully reduces recovery time from the energy-saving mode for multifunctional color copiers, which had been a difficult challenge. The imagio MP C3301/C2801 series, released in November 2010, offers higher thermal efficiency due to the Color QSU technology and the color PxP toner with a lower melting point. These are the first color copiers that recover from the energy-saving mode in 9.9 seconds, as fast as monochrome copiers. Also, for typical electricity consumption (TEC)[3] we have achieved a reduction of around 50% compared with previous models.

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 100 V machines marketed in Japan.
2. IH stands for "Induction Heating," a technology that heats metal instantly using the magnetic field generated by an electric current passing through a coil. This technology is also widely incorporated in electric rice-cookers and stoves.
3. Figures measured using the method designated under the international Energy Star Program.

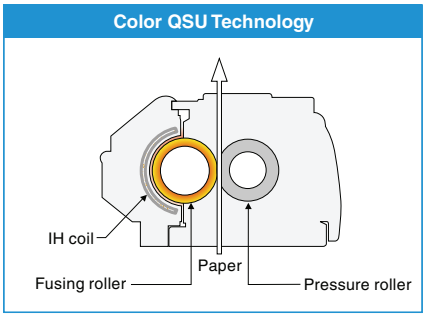
● HYBRID QSU Technology

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.



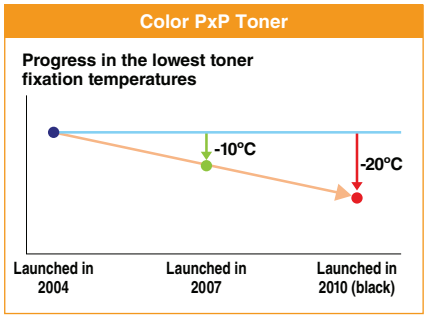
● Color QSU Technology

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 be both user-friendly and energy-saving.



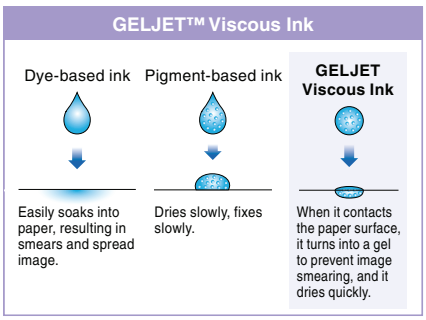
● Color PxP Toner

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

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 the 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 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.

* A type of energy-saving mode. See the table on next page.

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

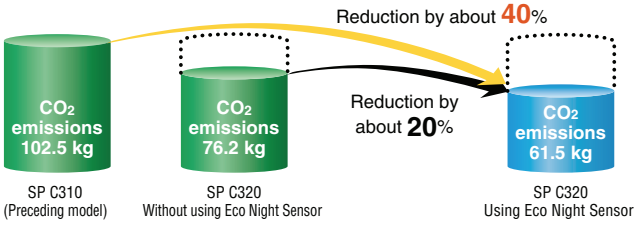
* See the manual for each model for specific energy consumption information and other data related to each setting in the energy-saving mode.

Eco Night Sensor introduced in IPSiO SP C320 <Ricoh Co., Ltd. (Japan)>

IPSiO SP C320, our color laser printer released in December 2010, boasts a Typical Electricity Consumption (TEC)[1] of 2.64 kWh, requiring approximately 25% less power than a conventional model. This was achieved by improving the thermal conductivity of its fusing parts, which represent a large percentage of the total energy consumption of the equipment. Another notable feature of this model is the introduction of Eco Night Sensor, a function which automatically turns off the device when it is not in use by detecting when the surrounding area becomes dark, thereby eliminating standby power consumption to zero. By activating the Eco Night Sensor, we estimate that power consumption can be reduced by some 40% compared with conventional models. Featuring a smaller imaging module, IPSiO SP 320 is as compact as a monochrome model[2], which means it is resource-efficient. The model contributes to more effective use of resources with its significantly greater durability, allowing the printing of up to 360,000 pages.

1. The measuring procedure is defined by the international ENERGY STAR Program.
2. 400 (W) ×480 (D) ×387 (H) mm

Eco Night Sensor allows even greater energy-saving performance



The Energy Testing Lab becomes an EPA-accredited laboratory <Ricoh Co., Ltd. (Japan)>

The Energy Star Program is an international energy conservation program for office equipment. The operating rules of the program were enhanced in January 2011, and now companies applying for the use of the Energy Star logo for their products sold in the North American market are required to receive third-party certification for the products from an EPA-accredited body prior to applying to the EPA[1]. Ricoh had been providing products that meet the criteria of the program, and to further promote the sales of its energy-efficient products, had Ricoh Technology Center's Energy Testing Lab ISO/IEC 17025-certified, which is a requirement to becoming an EPA-accredited lab.[2] The Energy Testing Lab has thus become an EPA-accredited lab. As a result, Ricoh can now receive third-party certification for its products more easily, which in turn makes it simpler for the company to provide products that meet the criteria of the program in a more speedy and efficient manner.

1. US Environmental Protection Agency
2. ISO/IEC 17025 is an international standard covering general requirements concerning the competency of testing and calibration laboratories, developed by the International Organization for Standardization. The Energy Testing Lab of the Environmental Center at Ricoh Technology Center received this certification from International Accreditation Japan (IA JAPAN) of the National Institute of Technology and Evaluation (NITE).

For details, visit the following site and input "Ricoh" as a search keyword:
http://www.energystar.gov/index.cfm?fuseaction=recognized_bodies_list.show_RCB_search_form

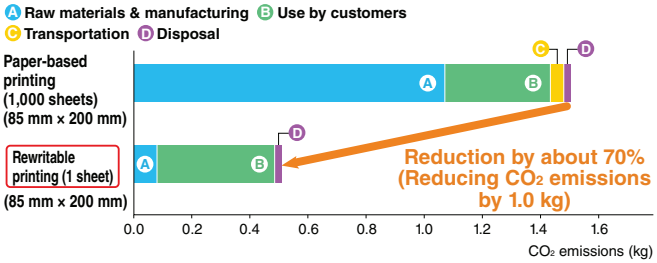
Preventing Global Warming through Reduced Paper Consumption

RECO-View RF Tag Sheet—capable of displaying data on rewritable RF Tags <Ricoh Co., Ltd. (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.

CO_2 emissions during 1,000 printing operations



[Data coverage] ■ Raw materials & manufacturing: Materials (RECO-View, inlay) and manufacturing processes ■ Use by customers: RW printer (RP-K series) (calculation based on electricity consumption)/laser printer (NX810) (calculation based on electricity consumption and toners) ■ Transportation: Shipment: 100 km transport by a 4-ton truck from the product warehouse/Collection: 100 km 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)
[Sources] ■ Paper: JLCA Database by Japan Environmental Management Association for Industry (JEMAI) ■ RHM: 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) ■ Transportation and disposal: Japan Tappi Journal 55(6) 838- 852(2001)

Global promotion of the 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 closed loop 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 2010

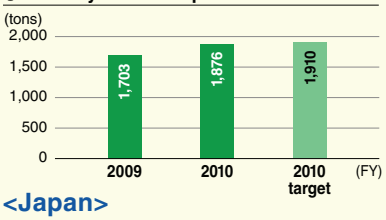
The quantity of reused parts obtained from used products was 1,876 tons in Japan (Graph ❶), or an approximately 2% shortfall from the target for the fiscal year, although the quantity in question increased from the previous year. The main reason behind this was that the sales volume as of the fiscal year end fell below target due to the March earthquake and tsunami in Japan. Meanwhile, the figure for overseas sites grew to 7,672 tons, exceeding the target for fiscal 2010 (Graph ❷). The quantity of recycled plastics used in Japan increased to 1,192 tons, while the quantity of resources collected from used products and recirculated overseas increased to 28,161 tons, both of which considerably exceeded the respective target quantity for the fiscal year (Graphs ❸ and ❹). The quantity of used toner cartridges collected saw a decline in terms of weight, which is due to the weight reduction in the cartridges used in each copier (Table ❺).

■ 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.

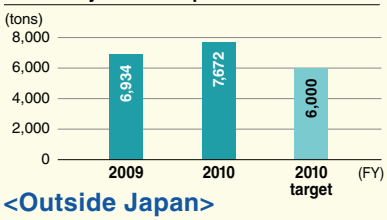
<Japan>

❶ Quantity of reused parts



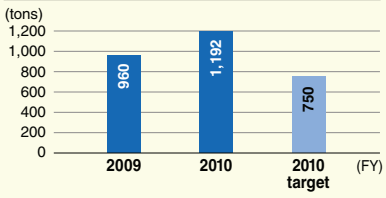
<Outside Japan>

❷ Quantity of reused parts



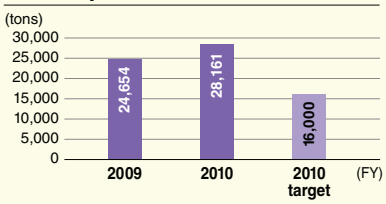
<Japan>

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 2008	Fiscal 2009	Fiscal 2010	Fiscal 2010
Copiers	264,899 units*	305,365 units	327,466 units*	98.9%
Toner cartridges	982.6 tons	951.8 tons	920.0 tons	99.6%

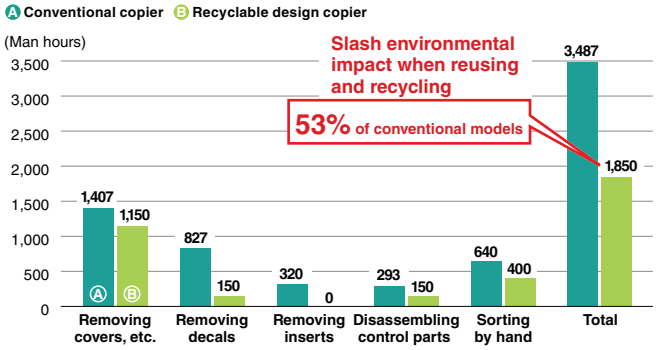
* The number of used copiers collected and the recycling rates in fiscal 2008 shown above do not include data for the Americas and those in fiscal 2010 do not include data for the Americas during the second half of the year due to a system failure there.

Recyclable design

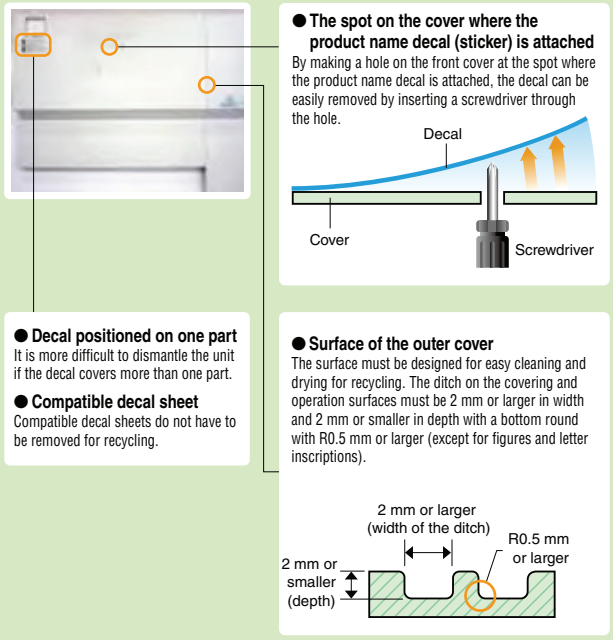
<Ricoh Co., Ltd. (Japan)>

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 the grading of material, strength design considering future reuse as well as the reduction of packaging materials, the 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 to discuss how to deal with revised rules and new laws and regulations, targeting designers of not only Ricoh's design division but also of its Group companies.

Effects of recyclable design



Recyclable design front cover



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 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)>

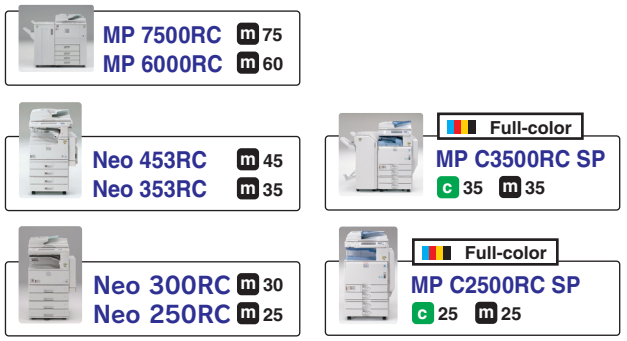
Ricoh copiers are offered mainly for lease in Japan, and every leased copier is placed under our management. This system facilitates the collection of used machines, and allows us to effectively utilize resources. The know-how accumulated through this practice is also made available in countries where 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 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%.

imagio RC* series, recycled multifunctional digital copiers that have achieved exceedingly high levels of eco-friendliness and quality

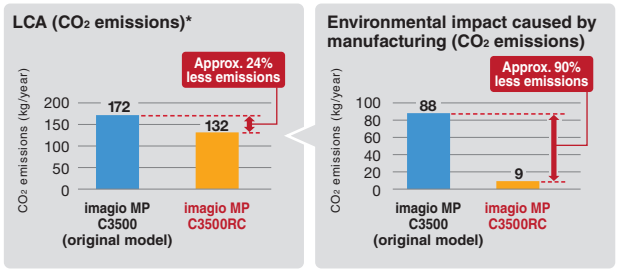
* RC = "reconditioned"

c Color mode continuous printing speed (ppm)
m Monochrome mode continuous printing speed (ppm)



Comparison of CO_2 emissions for the original model (copiers made with new materials) and recycled model

(As of September 2009, assessed by Ricoh)



* See page 24.

Notes:
1. The environmental impact is calculated per year over a five-year lifecycle for the original model and over a 10-year cycle for the recycled model (five years each for the original and recycled model period).
2. Figures for CO_2 emissions are rounded off to the nearest kilogram.

Recycling of highly functional components
<Office Machine Production Division, Ricoh Co., Ltd. (Japan)>

The Office Machine Production (OM) Division, a production department for Ricoh's Imaging Solution business, succeeded in reusing highly functional components of preventive maintenance (PM) units in fiscal 2010, as a result of making joint efforts with the product design and technology departments.

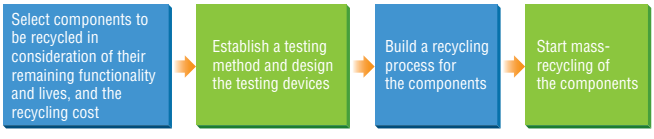
A PM unit is a unit to be regularly and unconditionally replaced with a new one—regardless of whether it has a problem or not. The PM unit had been recycled since 2007 but its functional components were excluded from the target of reuse because of their long operating hours and direct impact on imaging quality.

In order to make more effective use of resources and reduce waste, however, Ricoh also began recycling the functional components that met the following criteria by establishing the necessary methods and assessment technology for each of the components: (1) the functionality of recycled components must be assured; (2) the remaining life must be assessed; and (3) the recycling must provide a cost benefit.

For heating rollers (one of the functional components of a PM unit), our supplier manufactured them in China, making it difficult to recycle the used rollers in Japan. Upon a request from Ricoh, however, the supplier provided the company with detailed information, including a method to evaluate the electrical resistance of the products. The supplier also helped Ricoh procure the necessary tools and components for the testing and recycling of the used heating rollers within Ricoh's own premises. Also, the OM Division and the product design and technology departments jointly evaluated the relationship between the remaining life of the heating rollers and the degradation of their functionality, and established a highly accurate remaining life assessment method. As a result, heating rollers can now be recycled in large amounts, which will help reduce CO_2 emissions by 5.3 tons and waste by 4.9 tons annually, while at the same time reducing costs by 18 million yen.

The Ricoh Group cooperates closely with suppliers. We will continue to conduct activities to increase the number of highly functional components that can be recycled and reused in close cooperation with our business partners and suppliers.

Flow to assure the quality of recycled components



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 2010, about 70% of our copiers—or 48 models out of a total of 68—shipped within Japan have been packaged in these resin-based materials that can be used repeatedly. In addition, we offer the option of delivering products simply wrapped in damage-protection film direct from the factory to customers. This simple film packaging is employed mainly to wrap some models of high-speed copiers, for which packaging can be reduced by more than 100 kg per unit. We are working to expand the use of this packaging method to wider areas.

Through these efforts, we have reduced consumption of packaging materials by some 1,280 tons this fiscal year, equivalent to about 1,680 tons of CO_2 emissions.

* For more details, please refer to the related web page:
http://www.ricoh.com/environment/product/resource/03_01.html

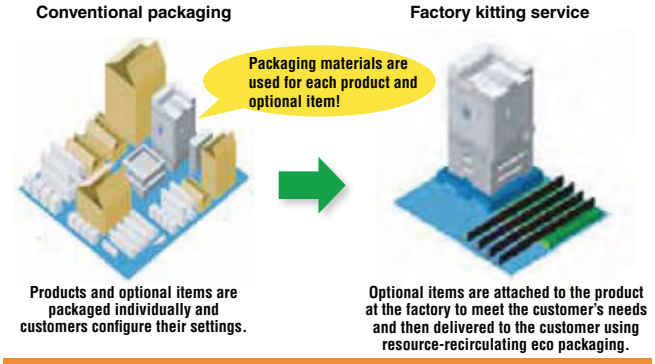
Resource-recirculating eco packaging

Factory kitting service using resource-recirculating eco packaging <Ricoh Co., Ltd. (Japan)>

Ricoh provides customers with a factory kitting service. Specifically, for the product to be delivered to a customer, the company attaches optional items and configures the necessary settings, including IP addresses, according to the specifications of the customer. Ricoh then directly delivers the product and all other items packed as one unit to the customer. This service helps shorten the installation time of the machine, and also contributes to a substantial reduction of packaging materials compared with the traditional delivery of items separately packaged in cardboard.

Moreover, the factory kitting service contributes to substantially improving the efficiency of logistics operations through direct delivery from the factory to the customer, and also increasing the transportation efficiency by reducing the overall shipping volume.

Conventional packaging versus the factory kitting service



Reducing the use of packaging materials and improving the transportation efficiency

Resource Conservation

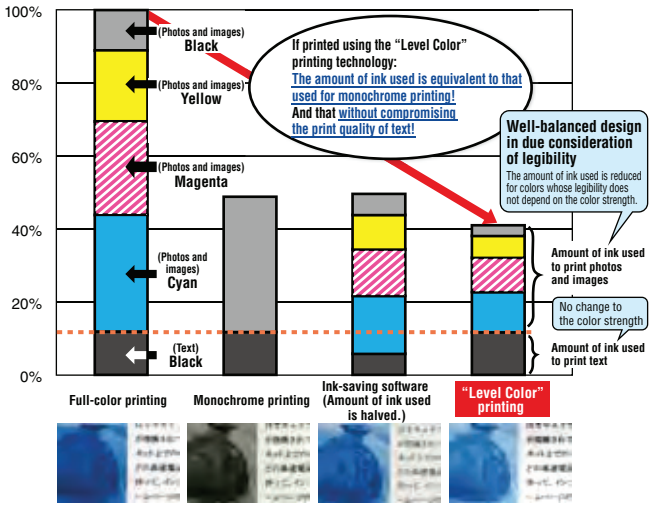
"Level Color" printing developed to substantially reduce the use of ink without compromising legibility <Ricoh Co., Ltd. (Japan)>

Ricoh's GELJET printer employs GELJET technology for high-quality, high-speed and high-color printing on plain paper, a requirement at offices. In 2004, the company independently developed "Level Color" printing technology to reduce the use of ink for images (photos, illustrations, graphs, etc.) without changing the amount of ink used for text, thereby making it possible to output color prints using an amount of ink equivalent to that used for monochrome printing. Subsequently, the technology was further advanced to make color printing more economical while maintaining the legibility of text and images. Specifically, utilizing the fact that the sensitivity of the human eye to colors varies depending on the color, the amount of ink for colors whose legibility does not depend on the color strength is reduced. This advanced "Level Color" printing technology was first applied to the IPSiO GX e3300 released in May 2009 and then also applied to the subsequently released IPSiO GX e2600, IPSiO GX e5500, and IPSiO GX e7700.

These models are also equipped with a newly developed ink feeding system*, which has greatly improved ink cartridge use efficiency. Ricoh will continue to develop product technologies and help customers reduce their environmental impacts.

* For more details, please refer to the related web page:
http://www.ricoh.com/environment/technologies/products/02_01.html

Amount of ink used to print a document including a photo (Example)



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

■ Concept

In order to minimize the adverse impact caused by environmentally-sensitive chemical substances contained in our products, we are committed to building a system to reduce and strictly manage such substances in all manufacturing processes including those conducted by suppliers. Because environmentally-sensitive chemical substances need to be treated individually when products containing them are disposed of, reducing the use of these substances in products will also considerably reduce the recycling cost in addition to lessening the environmental impact a product has during its lifecycle.

In addition, for more comfortable and safer use of our products by customers, we are proactively conducting activities to reduce the emissions of ozone, dust and VOCs* from the use of our products, and ensuring the safety of supplies to be used with the products through management systems built to our own criteria.

* VOCs: Volatile organic compounds

■ Targets for Fiscal 2010

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

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

■ Review of Fiscal 2010

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 copiers, multifunctional copiers, and printers in the 20 series launched in fiscal 2010 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	20
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 2010 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.

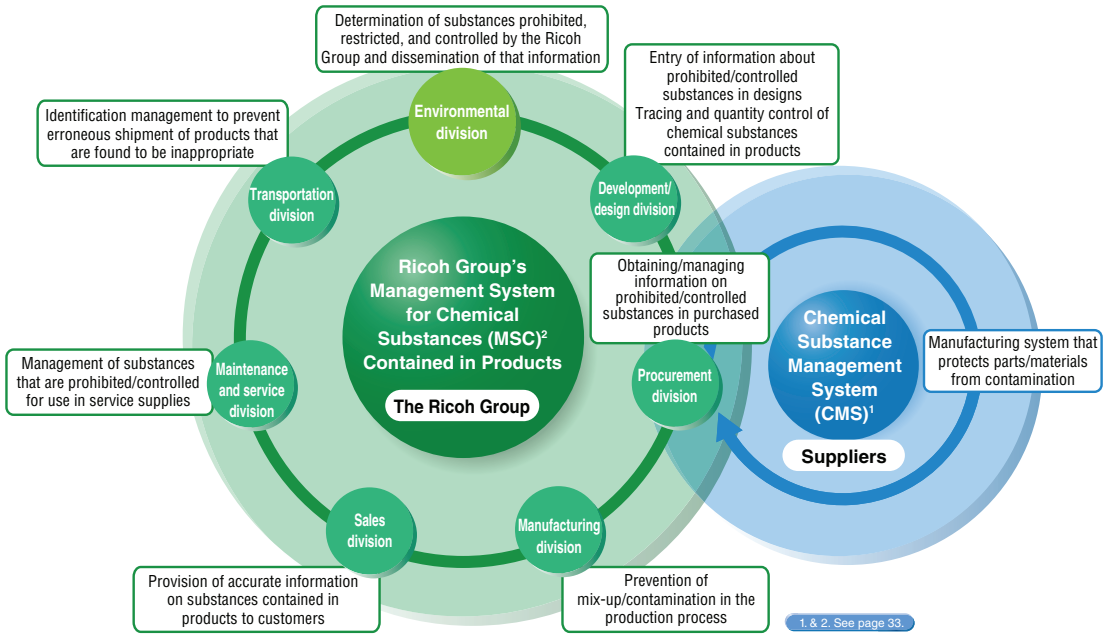
Ricoh is currently working on upgrading the management system for chemical substances (MSC)[2] contained in products by establishing a “first response flow” in case any harmful chemical substances should find their way into products. The MSC is designed to prevent the expansion of pollution (shipment 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], since fiscal 2007 we have been working 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 and 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 34.

Framework for chemical substance control (MSC and CMS)



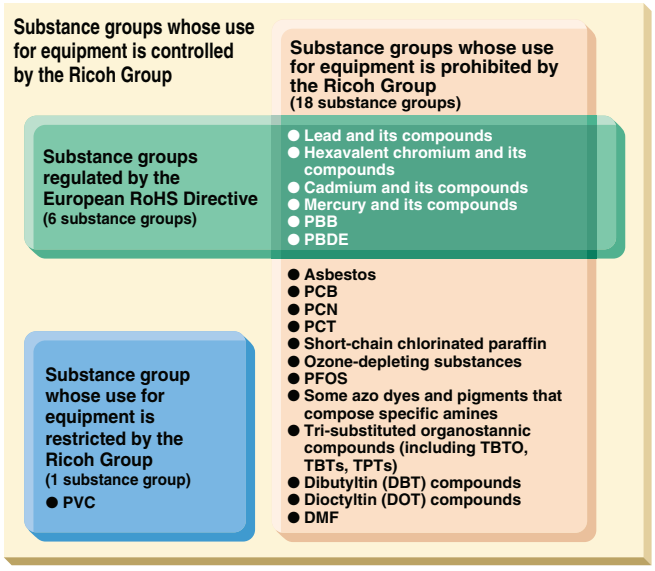
Compliance with the REACH Regulation

<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. Producers and importers are also required to fulfill their duties to communicate information to customers and general consumers on designated substances contained in products[2]. 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 developed a database and formulated common rules regarding 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 was implemented, 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 "leaders" of our chemical substance information management efforts. We have also developed and provided our suppliers with 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.

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



1. 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 35.

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)

Enhancing collaboration with JAMP, aiming to contribute to the realization of a society in which the impact of chemical substances on the environment is minimized

<Ricoh Group (Global)>

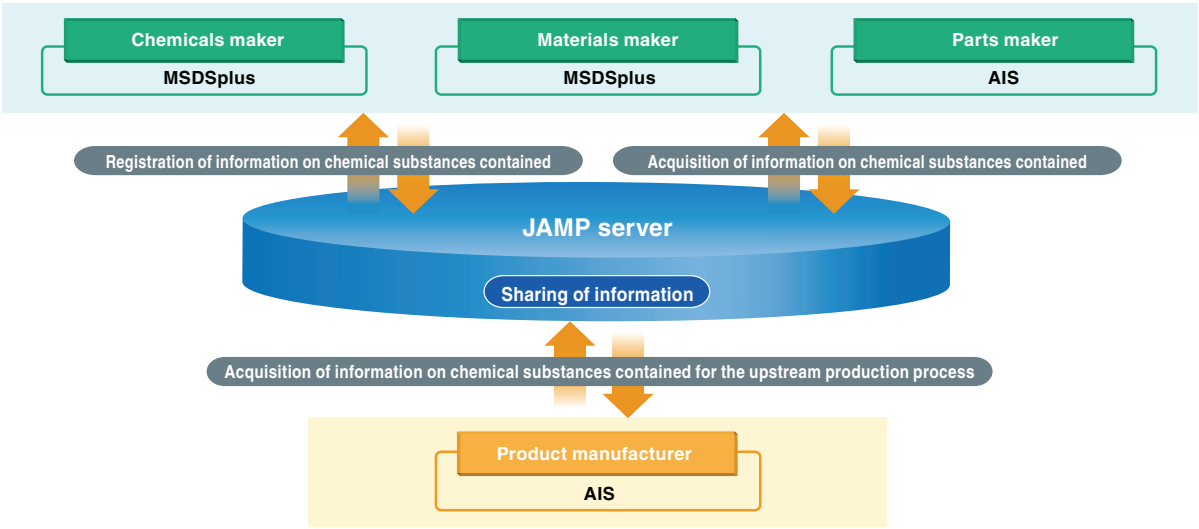
In accordance with the REACH Regulation, effective in 2007, under which registration of applicable chemical substances started in 2008, all manufacturers exporting products to Europe now need to get ready for full compliance. Since this regulation is being applied across the entire supply chain, manufacturers 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 a 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-IT, an information network system that enables manufacturers to register their chemical substances information on the JAMP server and share it among members. Launched in June 2009, this system eliminates 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 the JAMP system 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] In October 2010, the Group began to disclose the MSDSplus and AIS chemicals list for its main products through JAMP-IT.[4] We plan to add chemical information of other products to the list, thereby continuing to update the list. 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" refers 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
4. http://www.biz.jemai.or.jp/JAMP-GP/about/ (Japanese)

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 parts (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)>

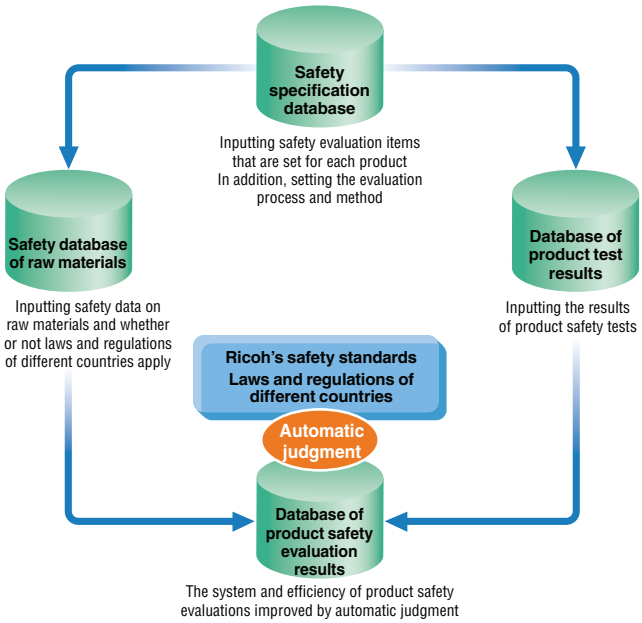
Various chemical substances are used in supplies, including toner and developer. Based on the belief that "product safety is a basic condition for customer satisfaction," the Ricoh Group ensures the safety of its supplies through appropriate chemical substance controls. We use an information system called 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.

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

3. See page 34.

Safety evaluation system for supplies



Reduction in environmentally-sensitive substances generated while in use

<Ricoh Co., Ltd. (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

As part of efforts to reduce the environmental impact of its products, 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 carry out 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 2010

Activities for reducing CO_2 emissions contribute not only to the prevention of global warming but also to the reduction of costs, leading to the reinforcement of suppliers' management practices. Based on this recognition, Ricoh is actively working with its suppliers to reduce CO_2 emissions by upgrading their operational processes. In fiscal 2010, Ricoh continued the initiative it started in fiscal 2009 to assist model suppliers with their efforts to reduce CO_2 emissions. We also collected information on measures taken by other suppliers to reduce CO_2 emissions. In addition, according to the Regulations of Ricoh Group Products Made of Wood, we are working to prevent the procurement of timber used in the manufacturing our products—not limited to paper products—from forests with high conservation value from the viewpoint of protecting biodiversity.

■ Future Activities

The Group will accumulate and share know-how and experience from the joint activities with suppliers for reducing CO_2 emissions to further step up these activities. Regarding compliance with environmental laws and regulations, we will work to refine the system that allows the Group and suppliers together to respond to the REACH Regulation* and other rules, and to expedite our response to any revision of related laws and regulations. * See page 34.

Regulations of Ricoh Group Products Made of Wood <Ricoh Group (Global)>

In February 2010, the Ricoh Group established the group-wide 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 the Regulations of Ricoh Group Products Made of Wood, please refer to the specific section of our website at:
http://www.ricoh.com/environment/product/procurement/01_01.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 in fiscal 2005 to train and certify suppliers' employees as CMS examiners. 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 June 2011, there were 1,494 certified CMS examiners at 871 suppliers and CMS was in place at 1,980 sites of 922 first-tier suppliers, including 296 with important processes involving environmentally sensitive substances. The suppliers' CMS is checked every two years for certification renewal, and in fiscal 2010, 314 suppliers completed the renewal procedure.

* See page 33.

Supporting CO_2 reduction activities at suppliers
<Ricoh Group (Japan)>

Ricoh's global procurement headquarters and Ricoh Creative Service Company Ltd. have started a joint project to assist suppliers to reduce CO_2 emissions by utilizing the energy conservation know-how accumulated within the Group. Promoting CO_2 reduction activities as a useful approach for process improvement, cost curtailment and quality enhancement, the project facilitators introduce suppliers to a range of measures, including those to improve yield rates and introduce inverter-driven compressors, and actively support the suppliers to implement these measures appropriately. In order to conduct energy saving activities effectively, on-site evaluation, monitoring and analysis are important to identify where waste can be eliminated and to expose the causes of waste in a form of visual data. A notable success is the improved clean room air-conditioning control. Thanks to changes made based on findings from monitoring the room temperature and humidity, air-conditioning costs and CO_2 emissions have dramatically declined.

System for reliable information management

Building a system to increase the accuracy of environmental information communication
<Ricoh Group (Global)>

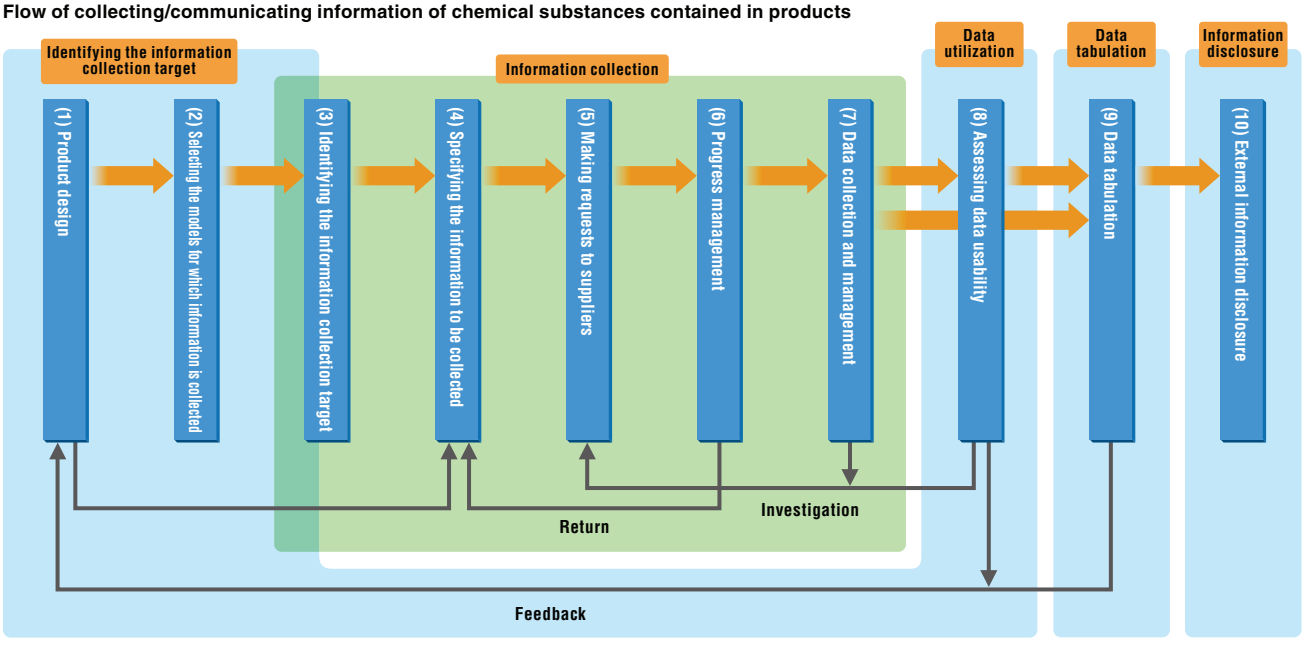
The Ricoh Group has been working to reduce its products' lifecycle CO_2 emissions, but most of the parts used in Ricoh products are manufactured and supplied by external vendors, who also often procure materials for their products from others. In order to reduce CO_2 emissions from its production activities, the Ricoh Group therefore needs to have a system to collect and communicate a vast amount of environmental information in an accurate manner in cooperation with its suppliers. To this end, the Group built a system to conduct environmental surveys on materials and parts used in its products and communicate the obtained environmental impact information on RaVenderNET, a network infrastructure operated jointly with its suppliers. The system has been in operation since 2001.

For the information communication flow, Ricoh's design department first selects the products and parts to be included in the information collection target, and then the materials procurement department specifies the information to be collected, such as the chemical substances contained in a particular material and the environmental impact caused by the production of the material. Subsequently, Ricoh asks suppliers to collect the necessary data and helps them operate the data collection tools and manage the collection process. Suppliers then submit the information to Ricoh. The submitted information is checked and an investigation is conducted as required. Information assessed as usable is then tabulated and disclosed.

For smoother and more accurate information collection and communication, Ricoh has been continuously conducting activities for suppliers in five global regions, such as providing them with education and training and creating manuals and guidelines in local languages.

Managing product information becomes more difficult the more materials and parts there are in them, and the risk of unexpected errors also increases. Based on this recognition, the design and production departments are implementing projects to collect information about materials, processing methods, and secondary materials used in production processes earlier than initially planned, in order to eventually narrow the target of information collection.

Flow of collecting/communicating information of chemical substances contained in products



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 developing Clean Development Mechanism (CDM)[1] projects as a scheme to prepare, as far as possible, for a rapid expansion of business through M&A and increased CO_2 emissions due to the 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 42. 2. See pages 17 and 18.

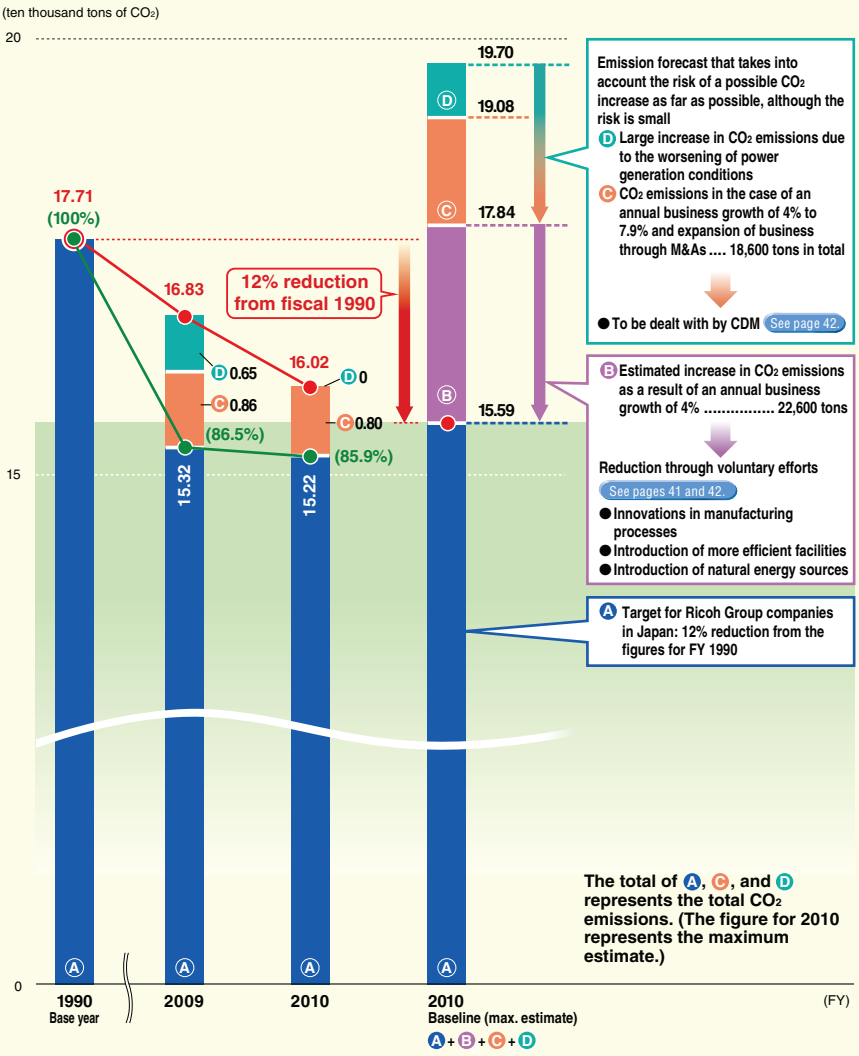
Targets for Fiscal 2010

◎ 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.

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



* Note: Results for Ricoh Printing Systems, Ltd. and Yamanashi Electronics Co., Ltd. are included in C.

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 2010

Total CO_2 emissions at production sites in Japan decreased by 9.6% from the fiscal 1990 level. This figure includes the results for Ricoh Printing Systems, Ltd. and Yamanashi Electronics Co., Ltd., which both were incorporated in the Ricoh Group after the 1990 base year (see Ⓐ + Ⓒ, fiscal 2010 results, in Scenario for reduction of total CO_2 emissions for Ricoh Group [Production] in Japan up to fiscal 2010, on page 39). When excluding the results for the two companies and other new businesses that were added later than 1990, the reduction rate is 14.1%, exceeding the fiscal 2010 target of a 12% reduction from the fiscal 1990 level (see Ⓐ in the Scenario). However, we failed to achieve the target for the same year of reducing the total amount of CO_2 emitted by the entire Ricoh Group to 155,875 tons, including emissions related to the bases and businesses added after 1990. To offset the difference (4,279 tons), the Group paid the equivalent Certified Emission Reductions (CER) credits—transferring them to the Japanese government's account—from the total credits the Group has earned through CDM projects.* Outside Japan, CO_2 emissions increased 20.3% over the fiscal 1998 level (see Graph ❸). Given business growth since fiscal 1990, the above figures suggest that efforts to reduce CO_2 emissions, particularly those to improve production processes, have brought steady results. As for greenhouse gases other than CO_2, the semiconductor business division achieved a 45.3% reduction, and the entire Ricoh Group, a 40.1% reduction, over fiscal 1995 levels (see Graph ❹).

* See page 42.

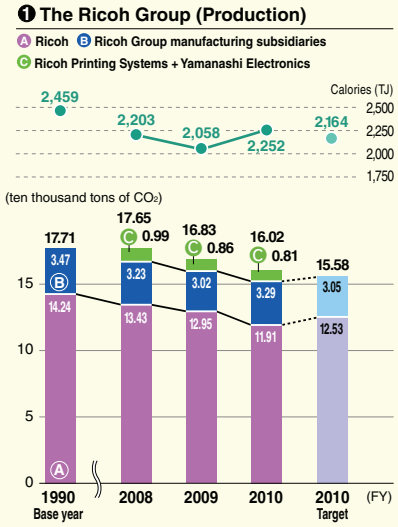
■ Future Activities

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 2011 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 by studying the most effective usage of such systems.

<Japan>

Energy consumption
(CO_2 conversion and calories)

❶ The Ricoh Group (Production)



Breakdown of major energy consumption

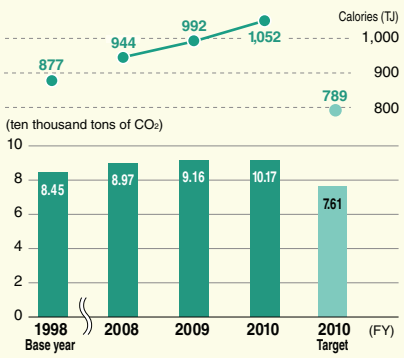
❷ The Ricoh Group (Production)

	FY 2007	FY 2008	FY 2009	FY 2010
Kerosene (kℓ)	1,389	1,404	1,398	1,099
Heavy oil A (kℓ)	2,706	2,945	2,194	1,686
Town gas (1,000 m³)	15,789	14,059	12,678	13,817
Natural gas (1,000 m³)	7,257	6,450	6,374	7,831
Electric power purchased (1,000 kWh)	296,150	313,902	309,490	329,652

<Outside Japan>

Energy consumption
(CO_2 conversion and calories)

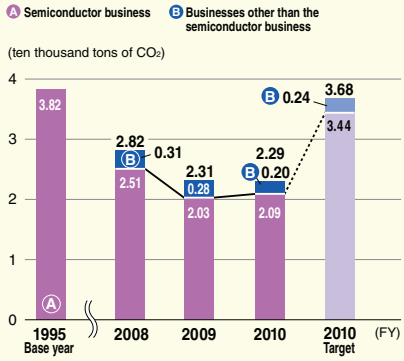
❸ The Ricoh Group (Production)



<The Entire Ricoh Group>

Greenhouse gas emissions other than CO_2* (CO_2 conversion)

❹ The Ricoh Group (Production)



* 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 in fiscal 2010: CO_2 emission coefficients specified for each utility released by the Japanese government on December 27, 2010 (calculated including the Kyoto carbon credits transferred to the government by the utility), based on Order on Calculation and Reporting of Greenhouse Gas Emissions, which was issued in relation to Act on Promotion of Global Warming Countermeasures;
Electric power purchased in fiscal 2009 or earlier: Guidelines for accounting and reporting of greenhouse gas emissions from industrial commercial sectors (draft) by the Japanese Ministry of the Environment;
Fuels: Greenhouse gas emissions accounting and reporting manual (ver. 3.1) by the Ministry of the Environment and Ministry of Economy, Trade and Industry.
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

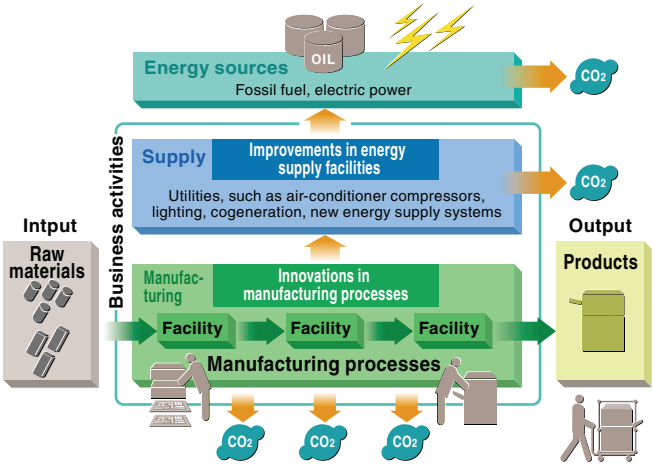
Innovations in Manufacturing Processes, Introduction of High-Efficiency Equipment, Introduction of Natural Energy

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

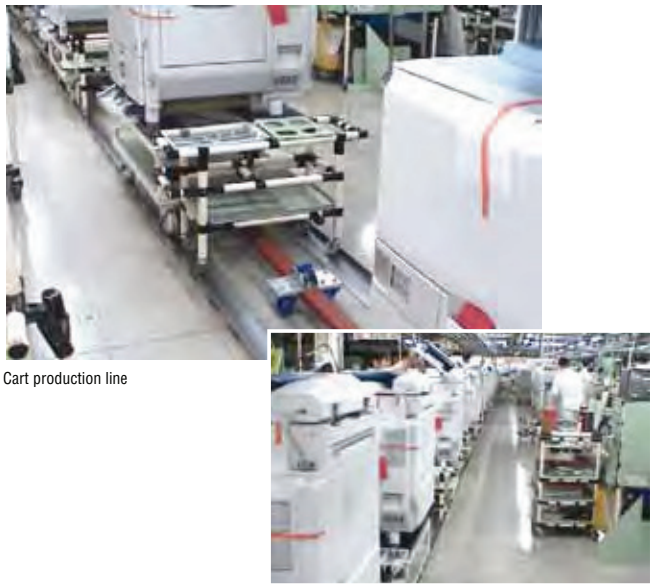


Highly productive, low environmental impact and highly flexible manufacturing—Ricoh's original cart production line

<Ricoh Co., Ltd. (Global)>

As of 2011, the Ricoh Group's production system is spread over 29 (major) production sites in five global regions: Japan, the 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;* moreover, because the layout can be freely changed, 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. This cart production line has been improved to be used as a model for introducing the layout-free production system in other production sites around the world.

* 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

Introducing a new solar power generation system
<Ricoh Electronics Inc. (The United States)>

Ricoh Electronics Inc. (REI, headquarters in Tustin, California), a manufacturing subsidiary in the U.S., has completed the installation of a rooftop solar power generation system which will annually supply up to 10% (about 350,000 kWh) of electricity used by the headquarters facility. Using the system, the company will be able to reduce its CO_2 emissions by 98.1 tons and its electricity costs by at least 56,000 dollars per year.

REI is located in sunny Southern California, a highly suitable place for the installation of a solar power generation system, so on the rooftop of the headquarters, about 1,000 panels are now installed. The cost of installation is about 60% covered by incentives offered by the federal and state governments, and the company aims to recoup the remaining cost within six years.

Many people participated in the completion ceremony held on February 9, 2011, including the Mayor of Tustin, Jerry Amante, Consul General Junichi Ihara of the Consulate-General of Japan in Los Angeles, and employees of REI and SPG Solar Inc., which cooperated with REI in the installation of the system. Several of Ricoh's customers and suppliers also attended the ceremony to celebrate the completion of the installation.

● Comment from then President Yoshinori Yamashita of REI

As for the introduction of a solar power generation system in this time of economic stagnation, there were criticisms and objections both within and outside the company. I, however, said to opponents, "This is the right time for us to do it," for the following three reasons:

(1) Ricoh should show its commitment to the environment as a leading environmental company all the more because it is difficult to do so now.

(2) Because other companies are refraining from making environmental investments, the price of solar panels, the production of which has been increased by manufacturers, is decreasing.

(3) By making investments in the system while the federal and state governments are offering generous subsidies, we can shorten the time required to recover our costs.

For me, the introduction of the system was a very strategic decision for both the environment and our business.

* News release (Nov. 9, 2010)
http://www.ricoh.com/release/2010/1109_1.html
* The Ricoh Group's natural energy utilization
http://www.ricoh.com/environment/office/energy/04_01.html

After the ceremony, participants went up onto the rooftop to observe the solar power generation system in action.

Consul General Junichi Ihara making a speech at the completion ceremony

Yoshinori Yamashita, president of REI, received a letter of thanks from Mayor Jerry Amante in commemoration of the completion.

CDM projects and use of carbon credits
<Ricoh Group (Global)>

As part of efforts to achieve the goal of reducing total CO_2 emissions in Japan by 12% by fiscal 2010 from the fiscal 1990 level, the Ricoh Group 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. By the end of fiscal 2010, the Group had received in total a 73,179-ton Certified Emission Reductions (CER) credit for investing in wind power generation projects in India.

Out of that amount, a 4,279-ton credit[1] was transferred on June 2011 to the Japanese government's account to offset the difference between the fiscal 2010 target of total CO_2 emissions in Japan and the actual result.[2] In fiscal 2010, another 1,650-ton credit was paid by Ricoh Europe PLC (RE), the Group's European headquarters, to implement "carbon balanced printing,"[3] RE's new program that enables customers to completely offset CO_2 emissions caused by their use of printers. The Group will increase its carbon credits to allow the Group members to use the credit scheme effectively for business and other activities, including RE's carbon balanced printing and "carbon offset lease," promoted by Ricoh Leasing Company Ltd.

1. Fiscal 2010 total CO_2 emissions target: 155,875 tons; Actual result: 160,154 tons
See pages 30 to 40.
2. Credit ID numbers: IN-000-000-027-139-579 to IN-000-000-027-143-857
3. See page 52.

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 for transportation between production sites inside and outside of Japan, as well as the discharged matter generated during the production of polymerized toners. In addition, we established a system in 2005 to conduct audits of contract waste disposal service providers to ensure appropriate disposal of our waste in Japan. To enhance this system, in October 2009 we launched 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 the production of polymerized toners by 17% from the level in fiscal 2007.

■ Review of Fiscal 2010

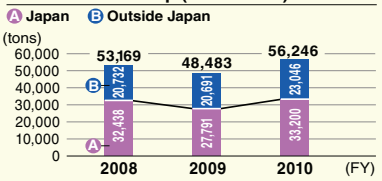
In fiscal 2010, the Group's total amount of discharged matter increased by 16.0% compared with the previous fiscal year (Graph ❶). In the area of discharged matter generated during the production of polymerized toners, reduction per production volume reached 19.5% from the fiscal 2007 level. Discharged matter from packaging materials used for site-to-site transportation decreased in five out of the six target production sites in Japan, due to the introduction of resource-circulating packaging and the review of delivery methods, while five out of the six sites failed to achieve the target of a 30% reduction, largely attributable to an increase in parts procurement from overseas. Discharged matter from the thermal media business increased by 8.6% over the fiscal 2006 level, reflecting an increase in production among other factors.

■ Future Activities

Under the new Environmental Action Plan, starting in fiscal 2011, we will continue to make efforts to reduce discharged matter focusing on the three priority areas. In the area of polymerized toner production, the new plant of Tohoku Ricoh Co., Ltd., which went on line in fiscal 2010, will be a new target site. To promote activities to reduce packaging materials for transportation to production sites, we plan to expand target sites in this priority area to 16 locations in Japan and overseas.

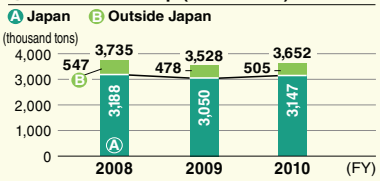
<The Entire Ricoh Group>

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



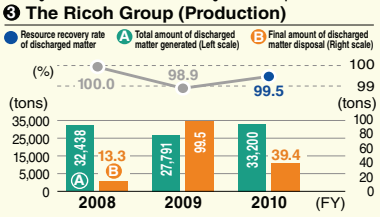
* The total amount of discharged matter generated outside Japan for fiscal 2008 and 2009 has been revised.

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



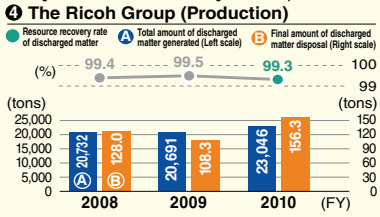
<Japan>

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)



* The total amount of discharged matter generated outside Japan for fiscal 2008 and 2009 has been revised. The 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 and 2010 rates.

* 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 and 2010 (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 and 2010 are attributable to this change in the calculation basis.

Developing a closed water recycling system using ozone micro-nano bubble technology
<Ricoh Co., Ltd. (Japan)>

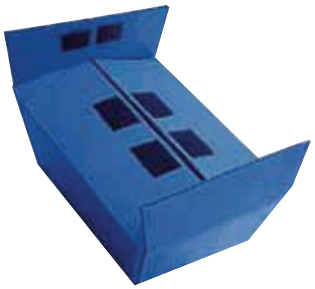
Ricoh has been developing recycling technologies to manufacture its products with the minimum use of virgin resources. In December 2010, Ricoh, REO Research Institute, and the National Institute of Advanced Industrial Science and Technology (AIST) succeeded in the joint development of a closed recycling system for industrial water used in the polymerized toner production process. This system, which was developed using ozone micro-nano bubble technology*, will help substantially reduce the environmental impact of the water treatment process and make it possible to produce polymerized toner without using virgin water resources. The first system will be completed within fiscal 2012 for use in the production process of Tohoku Ricoh Co., Ltd..

* For technological details See page 25.

Resource conservation by reducing packaging waste
<Ricoh Group (Global)>

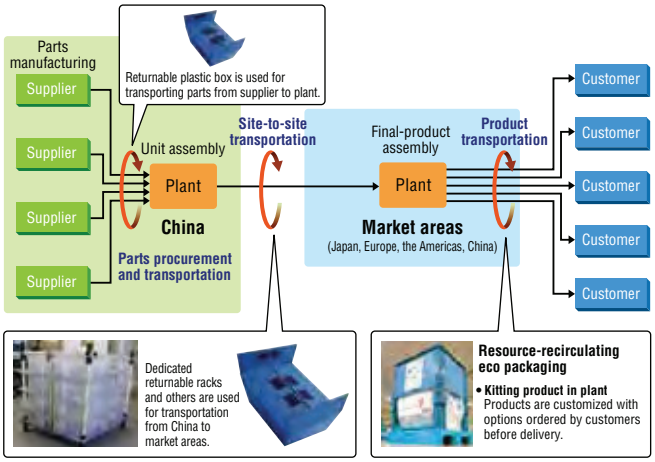
The Ricoh Group is working to reduce packaging waste over the whole delivery process ranging from suppliers to customers. To reduce the amount of packaging materials used for delivering products to our customers, we introduced "resource-recirculating eco packaging" in 2001. A similar model has been introduced to reduce packaging waste across the entire supply chain, for which we have developed original resource-recirculating packaging tools and systems. Previously, all the parts and units transported from Ricoh Asia Industry (Shenzhen) Ltd. (RAI) to production sites throughout the world were 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. Since 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. Improvement points were also identified in packaging used for the delivery of parts by suppliers, for which a huge amount of corrugated cardboard was consumed. To remedy this, the Group developed plastic boxes to be used repeatedly to transport parts from suppliers to RAI, and these have replaced corrugated cardboard boxes. In fiscal 2010, thanks to these returnable boxes, the amount of packaging materials used decreased by a total of roughly 212 tons and packaging costs by approximately ¥18.2 million.

Transportation by returnable rack



Returnable plastic box used for transportation of parts from suppliers

Resource conservation by reducing packaging waste



Auditing waste disposal service providers and implementing a Certification Program for Excellent Waste Disposal Service Providers
<Ricoh Co., Ltd. (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 is 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.[1] As of April 25, 2011, 33 sites at 23 companies have received certification under the program.[2]

In the certification program, we carefully conduct onsite inspections based on our own audit criteria, thereby detecting any risks of illegal waste disposal that might be overlooked in inspections through interviews or documents, thereby improving the operations of the audited service providers. We will cooperate with providers even more closely so that all of them can receive certification, thereby promoting the use of excellent waste disposal service providers.

1. http://www.ricoh.com/environment/office/resource/03_01.html
2. http://www.ricoh.co.jp/ecology/office/resource/pop01.html (Japanese)

Audit on a waste disposal service provider

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

In compliance with the Strategic Approach to International Chemicals Management (SAICM)[1], the Ricoh Group has established a system to manage the risks of chemical substances by applying a risk evaluation method, aiming to minimize the risk throughout the lifecycle of chemicals and to share related information. Under this risk management system, all the chemical substances used, discharged and disposed of in the manufacturing processes of Ricoh products are assessed in two steps: (1) screening in terms of discharged and used amounts, according to the GHS hazard[2] level scale; (2) for substances evaluated as above a specified level, hazard and exposure assessments are conducted. Based on the results obtained, we assess the risks of the hazardous substances to the health of local residents as well as other environmental risks. Enhancing this risk assessment scheme, we will establish a global system to reduce risks related to chemical substances. In addition, the Group has a system in place to manage environmental risks. To control soil and underground water contamination, we have formulated basic principles, provided in the group management standards and other guidelines. In case of contamination, we voluntarily conduct an investigation using the group's uniform standards and promptly take steps for remediation. Regarding soil and underground water contamination, PCBs, and asbestos, the Group started to make efforts to understand environmental liabilities that could have a financial impact.

1. See page 47.
2. Harmfulness to human beings and the environment

■ 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.
◎ Activity to eliminate chlorine organic solvents used by the Group, including companies that become new members of the Group, has been proceeded.

■ Review of Fiscal 2010

Regarding risk management, we conducted a study aiming to develop a scheme to assess the risks of chemical substances discharged into the air. In fiscal 2010, the use and emissions of environmentally sensitive substances were reduced 72.9% and 87.9%, respectively, compared to fiscal 2000 levels (Graph ❶). As part of the environmental liabilities survey, we completed a detailed investigation concerning asbestos (level 1 to 3)[3] for all 22 Ricoh sites, allowing us to calculate liabilities with greater accuracy. We also continued a global survey of the Ricoh Group on PCBs and asbestos covering the consolidated companies using an updated survey manual, and calculated environmental liabilities reflecting the results. The use of chlorine organic solvents for the production of any our products was totally abandoned by fiscal 2005, but these chemicals have continued to be used by some of the affiliates that joined the Group after 2005. To remedy this, we have formulated a plan to completely eliminate the use of this type of solvent at the sites of the new Group members, and are working to achieve the goal by fiscal 2011.

3. The hazard levels of materials containing asbestos, defined in the Ordinance on Prevention of Hazard due to Asbestos, under the Industrial Safety and Health Act. Level 1: sprayed asbestos; level 2: heat insulation materials, etc.; level 3: molded plates, etc.

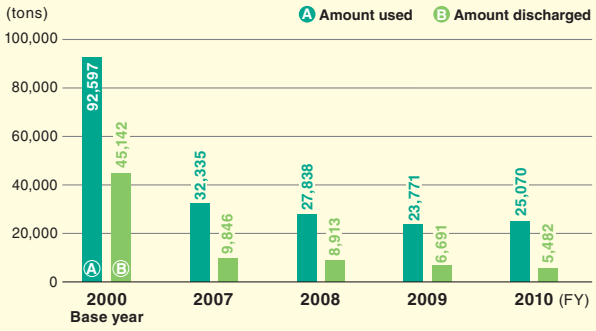
■ Future Activities

We will work to establish and upgrade a risk management system for chemical substances in terms of product lifecycle, aiming at realizing a new system of global management of chemical substances by the Ricoh Group.

<The Entire Ricoh Group>

Changes in the amount of environmentally sensitive substances used and discharged*

❶ The Ricoh Group (Production)



* 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.

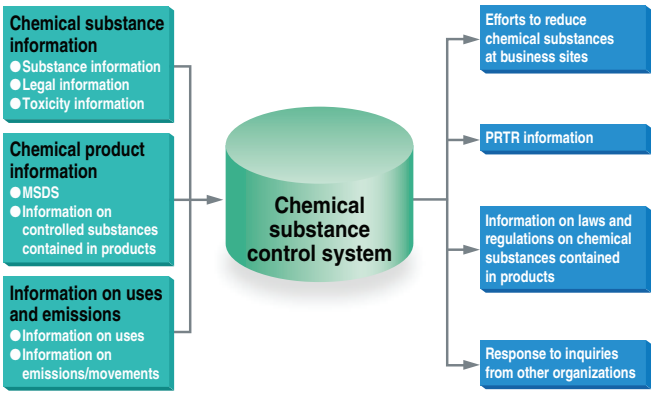
Chemical Substance Control

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



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 risk 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. In fiscal 2010, we made a detailed assessment of risks that may impact local residents in relation to the chemical substances used in the manufacturing processes in order to fully launch our group-wide chemical substance risk management system.

Activities for establishment of a 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.

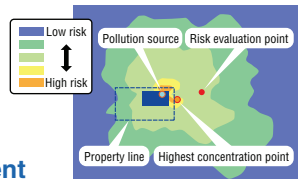
March 2011
- Risk management and reduction activities are being carried out through the introduction of green and sustainable technology.
- Information on risks is shared with the related parties through good communication.

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. This system was recommended in a U.N. resolution in July 2003.

TOPIC

Establishing a groupwide risk management system



Introducing environmental risk management approach based on risk assessment

The Ricoh Group is developing and enhancing a groupwide chemical substance risk management system. To start with, in fiscal 2009, the Group—in cooperation with the Research Institute of Science for Safety and Sustainability, National Institute of Advanced Industrial Science and Technology (AIST)—introduced an approach for assessing environmental risks that local residents may be exposed to arising from activities conducted at its production sites.

Prior to this, the Group had for more than 10 years controlled and reduced chemical substances used or discharged in its manufacturing processes under a system in which an environmental impact coefficient[1] is set for each substance and their environmental risk levels are ranked using the set coefficients and amount used/discharged, then higher-ranked substances are given higher priority for control and elimination. By this method, we have achieved a substantial 87.9% reduction for discharged hazardous chemicals from the fiscal 2000 level across the group. We intend to raise this figure to more than 90% by fiscal 2013. As an initiative aimed at this new target, we have begun to develop a groupwide risk assessment-based chemical substance risk management system in reference to the SAICM approach.[2] The new system, applied to all chemical substances used, discharged and disposed of in the course of manufacturing Ricoh products, consists of two evaluation steps. First, screening is conducted for each substance in terms of amount emitted according to the GHS hazard[3] level scale. Next, the substance for which the resulting value calculated exceeds the predetermined threshold level will be subject to a diffusion simulation analysis incorporating weather information of surrounding areas of the production sites, aimed at assessing health risk to local residents. To ensure that our assessment activities have no impact to the neighboring areas, we have set hazard standards, including no observed adverse effect level, and other specific safety limits for use of assessed substances at sufficiently strict levels. By conducting simulation analysis, an approach for assessing impact risks that chemical substances can have on the environment and human health, we can manage those hazardous substances more effectively. In addition, we plan to expand this initiative to establish a methodology for assessing chemical risks for the ecosystem. In this way, the Ricoh Group is committed to developing and operating a groupwide system to manage chemical substances, employing the world's advanced risk management approach.

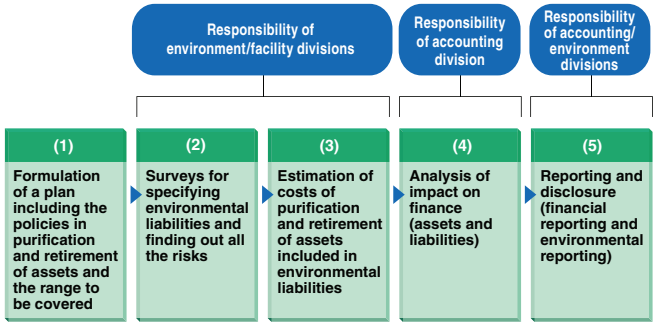
1. Ratings of individual substances on a scale of 1 to 1,000 in reference to a number of environmental indicators, including those for carcinogenicity, acceptable concentration level, LD50, global warming potential, ozone depletion potential
2. Strategic Approach to International Chemicals Management (SAICM): a policy framework to promote the sound management of chemicals adopted in February 2006 by the International Conference on Chemicals Management (ICCM) and endorsed by the United Nations Environment Programme (UNEP)
3. An international indicator of harmfulness to human beings and the environment (See the table "Activities for establishment of risk management system" on page 46).

Environmental Risk Management

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 its sites for possible soil/ underground water contamination, asbestos and PCBs-related hazard, as well as recognizing the obligation to return sites to their original state, in order to appropriately reflect the impact on corporate performance of the cost of fulfilling that responsibility (environmental liabilities) in financial accounting. Based on the assessments of our facilities, conducted jointly by the accounting, environment, and facility divisions, 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 ¥2,950 million[2] as of the end of fiscal 2010. In addition, the Group provided ¥860 million in reserves for soil purification.

Implementation flow and roles of the environmental liabilities calculation project



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. In Japan, the Accounting Standard for Asset Retirement Obligations was introduced in fiscal 2010.
2. Asbestos: ¥1,603 million; other hazardous substances: ¥205.77 million; restoring buildings and land to their original state: ¥1,140 million

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 fiscal 2009, and has been evaluating environmental risks according to the standard. 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 standard applies to all acquisitions, sales, and lease of property within the Ricoh Group (all the group companies subject to the consolidated accounting). Our environmental risk management conducted under this standard follows three key principles: (1) to identify significant environmental

risks and the 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 relevant 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 the matter before deciding whether to finalize the property transaction under negotiation.

Asbestos and PCBs

<Ricoh Group (Global)>

A survey of asbestos used at Ricoh's business sites and facilities, concerning content in materials (level 1 to 3)* was completed in fiscal 2010. Measures to prevent dispersal have been taken at all relevant sites and the substance has been confirmed at a level that will not negatively affect human beings, whether in adjacent neighborhoods or at the facility. 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 Group, and has managed them and completed notification in compliance with the relevant laws and regulations. In fiscal 2010, we began to conduct a group-wide survey of PCB micro-contamination of waste electric components and other equipment. Including this micro level content in waste, the Group plans to complete disposal of PCBs held at its sites by fiscal 2016.

* See page 45.

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. We began an investigation of the soil and underground water at our sites in Japan in the early 1990s. Since then the investigation has expanded globally to cover all sites of the Group, including non-production facilities and offices, and improvements have been made as necessary. At sites where contamination has been detected, appropriate measures have been taken according to the specific scenario that each site has drawn up for complete remediation, based on the group standards and in compliance with the applicable regulations of each country. These activities have been completed at all the related sites except a number of facilities, where improvements are progressing steadily. Therefore, we have reduced soil/underground water contamination risks sufficiently to secure a certain level of safety as an entire group (see the table below). Pollution cleanups are often costly. As a measure to deal with this risk, Ricoh sets aside adequate reserves for possible future losses from the cleanup of environmental damage based on reasonable cost estimates, upon determining that there is a good likelihood that a cleanup may involve the incurring of significant costs.

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 2010)

Business site		Survey (voluntary/ mandatory)	Target substance	Highest yearly-averaged density recorded at monitored spots (mg/ℓ)	Reference standard & value	
					Reference standard	Reference value (mg/ℓ)
Japan	Ricoh Elemex Corporation, Okazaki Plant	Voluntary*	1,1-dichloroethylene	0.04	Environmental quality standards for groundwater (Specified based on Basic Environment Act)	0.02
			Trichloroethylene	1.0		0.03
			Cadmium	0.14		0.01
			Hexavalent chromium	3.4		0.05
	Ricoh Elemex Corporation, Ena Plant	Voluntary*	1,2-dichloroethylene	0.33	Environmental quality standards for groundwater (Specified based on Basic Environment Act)	0.04
			Trichloroethylene	0.51		0.03
			Carbon tetrachloride	0.006		0.002
			Hexavalent chromium	1.3		0.05
			Fluorine and its compounds	7.4		0.8
	Ohmori Office	Voluntary*	Trichloroethylene	0.04	Environmental quality standards for groundwater (Specified based on Basic Environment Act)	0.03
	Ricoh Optical Industries Co., Ltd.	Voluntary*	1,2-dichloroethylene	0.10	Environmental quality standards for groundwater (Specified based on Basic Environment Act)	0.04
			Trichloroethylene	0.58		0.03
			Tetrachloroethylene	0.79		0.01
	Ricoh Keiki Co., Ltd.	Voluntary*	Vinyl chloride monomer	0.022	Environmental quality standards for groundwater (Specified based on Basic Environment Act)	0.002
Outside of Japan	Ricoh UK Products Ltd. (U.K.)	Voluntary*	Tetrachloroethylene	23.00	Environment protection Act (Target based on Environment Agency process)	5.69
	Ricoh Industrie France S.A.S. (France)	Voluntary*	Tetrachloroethylene	0.207	Each master plan for improvement and water manegement	0.01
	Ricoh Electronics Inc., Irvine Plant (U.S.A.)	Mandatory	Tetrachloroethylene	1.2	EPA Regulation	0.1

* Investigated by Ricoh

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, lighting, disposal of waste, etc. to see what causes a higher environmental impact. Based upon the quantified data, systematic efforts are made to carry out measures to reduce the impact. 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 2010

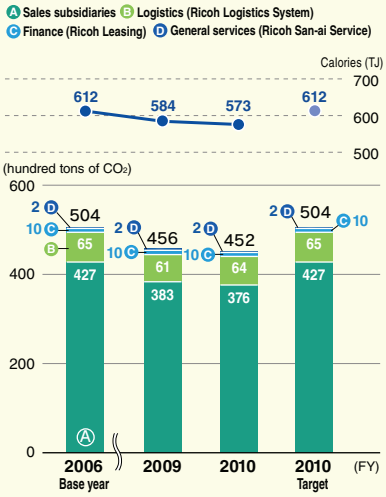
CO_2 emissions in offices were reduced by 10.3% from fiscal 2006, achieving the 2010 target, as a result of improvement activities incorporating the revision of working styles and workflows. Among these efforts, a major contribution was made by decreased gasoline consumption. As part of the working style-related initiatives, sales subsidiaries have been reducing their fleet of vehicles and switching to low-emission cars, which account for 64.6% of the total currently held. For activities participated in by all employees, including a campaign to have all employees leave the office without working overtime on particular days, we have achieved continuous results. We also conduct activities to promote the use of energy-saving features in Ricoh products in our own offices—including reviewing the settings of energy-saving modes—which leads 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, thereby expanding the use of the environmental functions of our products. In addition, we are increasingly using the print on demand (POD) method for printing our catalogs and manuals, as part of our efforts to reduce costs and environmental impact.

■ Future Activities

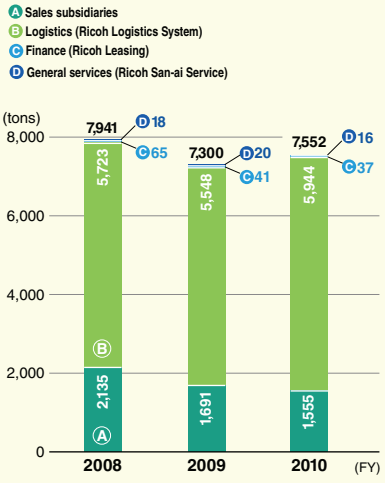
Particular efforts will be made for the reduction of CO_2 emissions, mainly through the improvement of operations. The know-how obtained from in-house activities will be shared throughout the Group, while being accumulated as know-how to be used in the office solution business as well as in recommendations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



Super Fresh-up Day enhanced by reduced lighting <Ricoh Co., Ltd. (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 expected to leave the office by 18:30. As a measure to strictly implement this campaign, the office lighting control system is programmed to turn off half the lights in each room at 18:15 and the other half at the finishing time. To continue to work after hours at offices on days this measure is implemented, employees need to switch on their desk lights, which is expected to help eliminate unnecessary lighting in unoccupied spaces. Our calculation of the effects of this campaign at the Head Office, where 1,939 employees work, showed that CO_2 emissions were reduced by about 0.127 tons on average on a Super Fresh-up Day, or a total of about 11.9 tons per year. In relation to this, the Ginza Mitsui Building, which houses Ricoh's Head Office, received one of the top awards of the Tokyo Metropolitan Government on May 26, 2011 in recognition of efforts to address global warming under the Tokyo Metropolitan Ordinance on Environmental Preservation.

TOPIC

Printing catalogs and manuals via POD

Introducing color production printing to support POD operations, aiming to reduce costs and environmental impact

POD Center in Heiwajima

<POD Center, Ricoh Creative Service Company, Ltd. (Japan)>

Ricoh Creative Service Company, Ltd. (RCS), a subsidiary which prints manuals and catalogs of Ricoh products, has begun to switch from offset printing to print on demand (POD)[1] for printing these documents, aiming to reduce costs and environmental impact. RCS runs a network of five POD Centers based in Heiwajima (main), Gotemba, Ebina and other locations, where the company undertakes the production and printing of documents for Ricoh's products and corporate communications. Ricoh launched its production printing business in 2008, and then developed the high-quality color production printer RICOH Pro C900 series. RCS introduced this printer to the POD Centers to undertake self-printing via POD and reduce outsourced printing operations. Behind this move is the diversification of Ricoh's product mix, which has been intensifying in recent years with an enhanced lineup of imaging products and shorter lead time to the launch of new models. In response to the shift toward high-mix low-volume manufacturing, the company began to review its catalog/manual printing operations, in order to deal with the need to shorten the lead time as well as to print diversified documents in small quantities due to the rising number of product models while the number of copies required for individual models is declining. Offset printing is highly cost-efficient for mass volume printing, but less cost-effective for high-mix low-volume production. Another issue with this conventional printing technology is the considerable inventory costs incurred due to the printing process, which requires a relatively long lead time for new print production, attributable to the need for resetting for each document and tuning according to document design. This compels the company to keep a substantial stock of catalogs/manuals in order to provide them promptly on receiving a request. Worse yet, it often happens that a large portion of the stored copies end up being disposed of as waste after the end of their applicable period. All these issues were solved by introducing the RICOH Pro C900 printers to launch POD, which, by eliminating the work required for different settings and dramatically reducing lead time and inventory costs, is particularly suitable for limited-volume printing. We surveyed roughly 1,300 items of our catalogs/manuals to compare cost-competitiveness for the two types of printer, and calculated the break-even point. The calculation results show that offset printing performs better when printing more than 10,000 copies annually or booklets with more than 25 pages; otherwise POD has the advantage. Following this analysis, we conducted a detailed evaluation of printing quality and selected 178 catalog/manual items to go POD. As a result of this, we reduced costs related to plate making, printing, storing and disposing of printed material by a total of ¥14 million. One of the key elements for promoting POD is to create documents by effectively using POD features, aiming at enhanced visual quality of printed documents. To ensure understanding and practice of this principle across the Group, RCS's POD Centers have developed instructions and manuals for POD document design and creation, which have been distributed to related departments of the Group companies. Use of the POD functions of the RICOH Pro C900 printers has expanded, including variable data printing (VDP)[2], a feature technique for printing direct-mail advertising and educational materials for training and seminars. Drawing on the know-how developed in these in-house POD operations, RCS plans to provide a POD service to a wide range of customers as an innovative solution to reduce costs, lead time and environmental impact while enhancing operational efficiency and advertising effectiveness.

1. Print on demand (POD): A method of printing developed as a feature of office digital printers which is suitable for high-mix low-volume printing
2. Variable data printing (VDP): A form of on-demand printing, in which elements, such as text and images, can be changed from one printed piece to the next, without slowing down the printing process. It is anticipated to increase the advertising effectiveness by creating marketing and promotion tools tailored to individual customers.

* For details of the color production printer RICOH Pro C900 series , please refer to the related section of the web page at: http://www.ricoh.com/products/index.html#01

Variable Data Printing

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 2010

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. With the new products with enhanced energy-saving functions launched in 2010, we will step up our efforts to help our customers globally to reduce their environmental impact.

■ 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.

Supporting sustainable environmental management of our customers through the Total Green Office Solution <Ricoh Group (Global)>

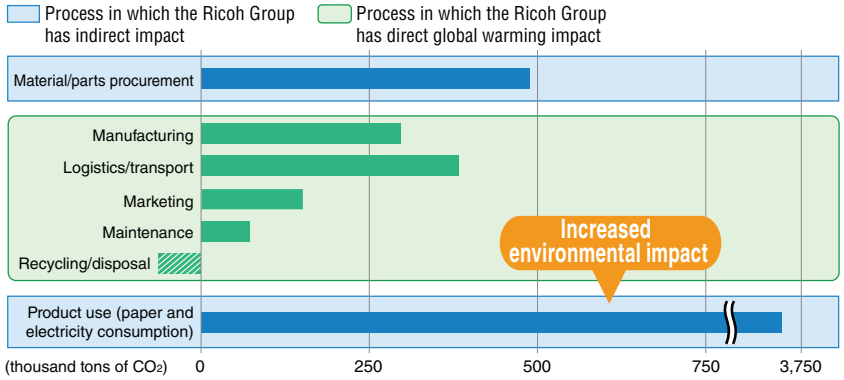
Our assessment of the impact of our products on global warming shows that more greenhouse gases (GHG) are emitted from energy consumption and paper use as a result of product use by customers than by Ricoh Group manufacturing operations. Therefore it is essential that we help our customers to efficiently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

These activities are organized into the Total Green Office Solution (TGOS), under which the environmental impact of customers' actions related to the use of our office equipment is assessed in three phases—purchase, use and return for recycling—and the assessment data is used to support customer efforts to reduce their environmental impact. TGOS aims to simultaneously achieve an improved workflow and lower cost at customer sites.

http://www.ricoh.com/tgos/top.html

CO_2 emissions over the lifecycle of Ricoh products



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. See page 32.

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 page 51. 2. Multifunction printer

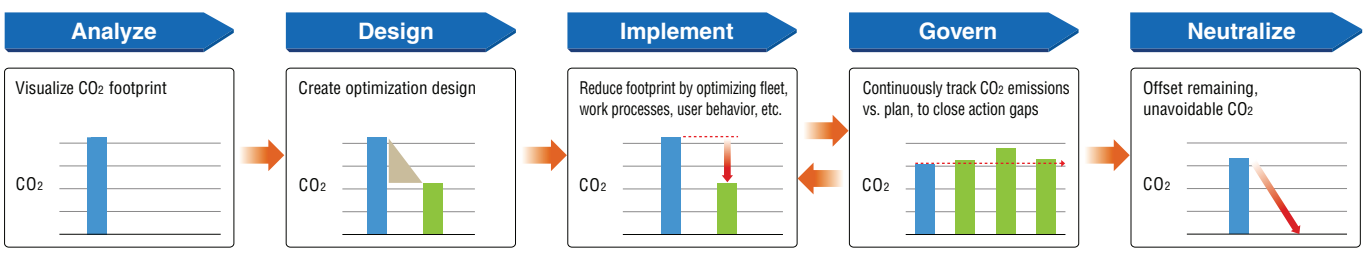
Sustainability Optimization Programme aiming at zero carbon footprint for document workflow

<Ricoh Europe PLC (Europe)>

Ricoh Europe PLC (RE), the European sales headquarters within the Ricoh Group, has introduced the Sustainability Optimization Programme (SOP), in line with Total Green Office Solution (TGOS), the Group's strategy to provide customers with solutions to reduce their costs and environmental impact. This program aims to help users of Ricoh products to minimize the Total Cost of Ownership (TCO) and the carbon footprint related to document workflow, by collecting relevant data to assess the current situation before creating and implementing an improvement plan, followed by continuous effectiveness monitoring for further improvement. Behind the launch of RE's new program is the increasing focus placed by business managers on the importance of conserving the environment while simultaneously pursuing business growth. Under ever-intensifying competitive pressure, companies are striving to further streamline operations to enhance business efficiency while, amid the globally rising concerns over climate change, they are expected to assume greater responsibility for reducing the impact of their activities on the environment. In a bid to offer a solution to this challenge, RE has developed SOP, consisting of five steps. The first step is analyzing in detail the document output environment of the customer's office, focusing on quantifying costs and CO_2 emissions, to establish accurate baselines. The assessment results provide the basis for an improvement plan, including fleet optimization design and TCO/CO_2 reduction targets. In the implementation phase, to ensure the new design will work to raise document output efficiency as planned, RE offers various forms of support, including staff training to raise environmental awareness and providing know-how to make the most of the energy-saving mode, double-sided printing and other green functions. The performance of the newly optimized fleet and process will be monitored to help achieve continuous sustainability improvement, particularly by comparing actual CO_2 emissions against the set targets on an ongoing basis, aimed at allowing for interventions to be made where appropriate. The final phase of SOP offers Carbon Balanced Printing, a new option for taking an additional step toward environmental contribution, specifically, neutralizing the minimal carbon emissions that unavoidably remains after all possible steps taken under SOP, using carbon credits obtained by Ricoh[1]. This carbon offset scheme covers primarily power and paper use of each device operated for office document output. RE's SOP makes it easier for its customers to meet their environmental goals and fulfill their social responsibility at reduced cost. The program has been employed by a number of major companies, who provided generally favorable feedback, including "This is an outstanding program that can achieve both optimal business management and environmental contribution," or "a viable and effective option that help achieve environmental targets." The calculation method and other systems incorporated in the program have been assessed and accredited by the British Standards Institution (BSI). In recognition of this initiative, RE was selected from among 21 candidates to win the EFQM Sustainability Good Practice Competition 2011, hosted by European Foundation for Quality Management.[2] RE will work to evolve SOP to enhance process optimization functionality, and offer industry-specific improvement proposals, seeking to expand employment of the program by a diverse range of customers.

1. The carbon credits used for offsetting are certified emission reduction (CER) credits earned for investing in UNFCCC registered CDM projects. See page 42.
2. For more details, please visit the web site at: https://sites.google.com/site/efqmgoodpracticecompetition/

Five steps of Sustainability Optimization Programme



Our managed document service being used at COP 10 <Ricoh Co., Ltd. (Japan)>

Ricoh provided outsourced document output management services during COP 10 (the Tenth meeting of the Conference of the Parties to the Convention on Biological Diversity) and COPMOP 5 (the Fifth meeting of the Conference of the Parties serving as the meeting of the Parties to the Cartagena Protocol on Biosafety) held in Nagoya in October 2010. Ricoh was selected to provide outsourced services because of the high quality of its global managed document services (MDS)*, and the following endeavors by the Group to be environmentally responsible: 1) significant efforts to reduce environmental impact in line with its sustainable environmental management strategy and concurrent efforts over many years to conserve biodiversity to improve the Earth's capabilities to recover and 2) efforts to reduce environmental impact not only by improving the environmental performance of its products but also through various measures at every stage of the lifecycle. We provided 114 copiers and other equipment for these meetings, including multifunctional digital copiers and printers equipped with energy-saving technology. Cooperation between Ricoh, Ricoh Japan, Ricoh Technosystems and Ricoh Logistics System, enabled us to install equipment in locations that would allow documents to be output efficiently with the least number of units. Maintenance support was provided around the clock to assist the smooth operation of COP 10. Our services included collection and destruction of classified documents to ensure security. The Ricoh Group will make good use of the experience and expertise gained in these large-scale conferences to build networks and expand its business to IT services so that it can contribute to the effective running of conferences and meetings both in Japan and abroad and to reducing environmental impact.

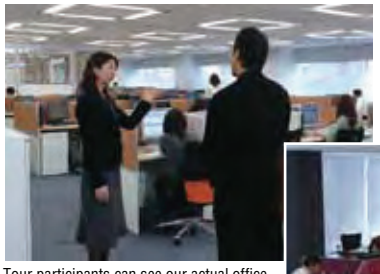
* Managed Document Services (MDS) is a service that advises companies on how to improve the efficiency of their document printing services, including a document workflow solution: Based on a detailed analysis of how customers input and output documents at their offices, proposals for the optimum locations of devices and the most effective workflow are made; and operation and management of the proposed printing environment as a whole are handled by the service provider. The Ricoh Group provides MDS globally.

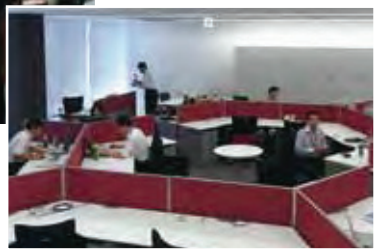
Demonstrating Ricoh's own efforts toward work style innovations in our demonstration offices, "ViCreA" <Ricoh Japan Corporation (Japan)>

We at the Ricoh Group propose a wide range of ideas to improve our customers' operational efficiency, to make their offices more environmentally friendly, and to optimize their work style, etc., based on our own practices and experiences. To demonstrate how we "walk the talk," our demonstration offices, "ViCreA," are open to customers. In these offices, we present examples of our own practices in sustainable environmental management and seven other focus areas. In addition, a tour of our actual office is offered to visitors to ViCreA, providing real-life examples of how our solution ideas can work in their offices. We have also started to share our energy-saving ideas and measures as many customers have developed a greater interest in energy conservation in the wake of the tight power supply situation caused by the earthquake and resulting nuclear plant accident in Japan. In fiscal 2010, about 8,000 people visited our ViCreA locations in the Kanto area (the region including Tokyo and its environs) alone.

Categories of internal practice examples presented at ViCreA

- **Risk management:** Reducing a wide range of risks to become a stronger organization.
- **Effective use of information:** Enhancing operational efficiency by sharing and effectively using information across the company.
- **Cost reduction:** Eliminating waste in operations and optimizing costs.
- **Enhancing customer and employee satisfaction:** Increasing customer satisfaction and becoming the company most valued and admired by customers. Creating a vibrant, fulfilling workplace.
- **Strengthening compliance efforts and social contribution activities:** Fulfilling our responsibility to society and achieving business goals to enhance our corporate value. Conducting activities that will make a positive contribution to society.
- **Work style innovations and operational efficiency improvement:** Creating a comfortable, motivating workplace. Improving operational efficiency to enhance the quality of each employee's performance.
- **Sustainable environmental management:** As a global citizen, operating our business in an environmentally responsible way.
- **Improving employee morale and performance:** Offering working conditions in which employees can develop their capabilities to motivate them to achieve even better performance.


Tour participants can see our actual office.


New type of office that enables work style innovations

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, cargo-carrying efficiency, and modal shifts, 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 2010

For the three years from fiscal 2008 to fiscal 2010, our average CO_2 emissions per basic unit were reduced by 1.9% as a result of our efforts. The data also reflects the improvement of data accuracy due to the upgrade of relevant systems conducted during the period. We started to collect the data regarding our CO_2 emissions during transportation in Japan in fiscal 2006, when we developed and started to operate a system to obtain the data from transport information. Since fiscal 2008, the scope of this process has been expanded to cover transportation between Japanese sites and overseas sites.

■ Future Activities

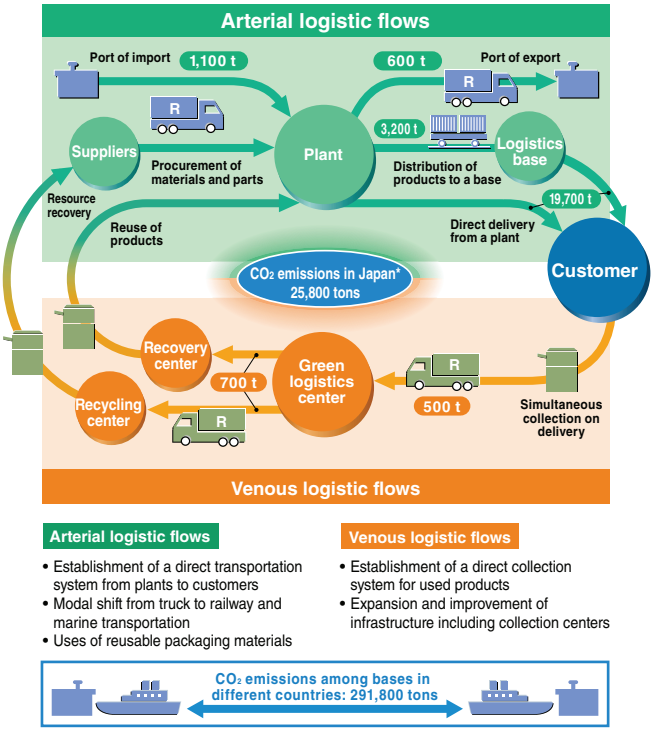
We have collected data on CO_2 emissions associated with our logistics operations within Japan as well as logistics from and to Japan. From fiscal 2011 and onwards, we will expand the scope of the data collection to a global scale and will set global emission reduction targets accordingly. As part of our sustainable environmental management, we will work to reduce CO_2 emissions and distribution costs in our logistics processes by implementing groupwide activities at all related business divisions and group companies both within and outside of 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 monthly transportation volume of products and parts from China to Japan is enough to fill 400 40-foot containers. To the Americas and Europe, products and parts of a volume equivalent to 1,000 40-foot containers are shipped from China each month. Given these volumes, 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 packaging materials, transportation, space, trans-shipment, and storage.

CO_2 emissions in logistics
(FY 2010, Ricoh and Ricoh Japan Corporation)



Arterial logistic flows

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

Venous logistic flows

- Establishment of a direct collection system for used products
- Expansion and improvement of infrastructure including collection centers

CO_2 emissions among bases in different countries: 291,800 tons

* CO_2 emissions in Japan (fiscal 2010 results) have been calculated in compliance with the Energy Saving Law.

Views held by employees

INTERVIEW

The Ricoh Group's Logistics Reform

We aim to build a global production and logistics system to maintain low-cost and low-CO_2 emission operations regardless of any changes to the environment.

Hiroyuki Murai
Logistics Innovation Group Leader
MONOZUKURI (Engineering Process) Innovation Center

Use of packaging materials largely depends on transportation method

I began to engage in activities to reduce the environmental impact of logistics operations in 1999, when our team implemented a joint project to create reusable packaging materials with the product and packaging design departments. As a result, we were able to develop "resource recirculating eco packaging" materials using resin. Subsequently we began work on full-scale packaging reforms, and have since been developing and promoting the use of unique packaging materials, such as eco-packaging materials for large machines and mini-racks to be used for delivery to households. We need to review the transportation methods if we want to reduce the use of packaging materials, which are designed to protect products during the transportation, transshipment and storage processes. In other words, we can transport our products with simple packaging—using only plastic wrap, for example—if we choose to and manage the appropriate transportation method for the products. In developing packaging materials, it was essential to visualize the entire logistics operations. We were able to achieve the "packageless" delivery of our products, such as delivering products simply wrapped in plastic, because we conducted activities targeting the entire logistics operations.

Reduction of packaging materials

"Resource-recirculating" packaging

- **Resource-recirculating eco packaging**
  Resin racks that can be used repeatedly

- **Simple racks**
  Simple racks made of pipes

"Packageless" delivery

- **Use of plastic wrap**
  Minimizing the use of packaging materials by using plastic wrap along with cushioning materials

Reducing CO_2 emissions from logistics operations through "visualization"

In the middle of 2000, the use of cardboard for transportation between our production bases began to increase rapidly in accordance with the full-scale launch of the global production system.

Logistics operations are the "blood vessels" of the supply chain, which connect the procurement, production, distribution, and recovery operations. At least 10 departments are related to the logistics operations for each of the domestic transportation routes. For global transportation, the number of related departments (including outsourcing partners) is doubled, because legal regulations and commercial customs differ by region and the frequency of transshipment is higher. It requires a considerable amount of work to collect precise information about daily transportation activities from related parties and to check the actual logistics situation. However, once the logistics operations are "visualized," we can easily identify what needs to be improved to reduce CO_2 emissions and if we make the improvements, the effects will accumulate day by day, leading to substantial reductions in both CO_2 emissions and cost.

In line with the three-year plan started in fiscal 2008, the Logistics Innovation Group has been conducting activities to minimize waste across five areas of packaging, transportation, space, transshipment, and storage, utilizing the ratio of logistics cost to sales, the use of cardboard, and CO_2 emissions from transportation as major management indicators. From fiscal 2011 onwards, we will further promote activities based on the results of past visualization and reduction activities. By 2013, we aim to build a group-wide production and logistics system to always respond flexibly to requests from the procurement, production, sales, and service departments as well as to changes in the environment surrounding logistics, and to choose optimal packaging materials and transportation routes to ensure low-cost and low-emission logistics operations.

* For examples of the activities for logistics reforms see page 56.

Improving the loading efficiency of marine transportation containers

<Ricoh Co., Ltd./Ricoh Electronics Inc. (Global)>

The Ricoh Group has production bases in five global regions (Japan, the Americas, Europe, China, and Asia-Pacific). In each of the regions, we have built a "local production and consumption" system. Specifically, in each region, our sales and production staff cooperate closely with each other to develop products and services that meet the true needs of local customers and to provide the customers with these products and services in a speedy and appropriate manner. Parts, semi-finished products and finished products are transported between these production bases, and the total transportation volume has exceeded the amount that can be transported using 20,000 40-foot containers. As part of its measures to promote logistics reform, the Ricoh Group has been endeavoring to visualize the loading efficiency of marine transportation containers used for its logistics operations.

Ricoh Electronics Inc. (REI), which is based in Tustin, California in the United States, has an assembly factory for copiers and a warehouse for finished products. The factory and warehouse had multiple contact points accepting cargos, and these contact points had different functions and delivery destinations. For marine transportation between Japan and the factory and warehouse, cargoes were delivered separately, although they shared the same location, because separate delivery was believed to be more efficient. However, by visualizing the loading efficiency of containers used for the transportation (a total of about 100 containers per month were used), it was revealed that the loading efficiency of containers used for transportation to some specific contact points within the site was low and that the efficiency was particularly low for containers used to transport large products.

In response, Ricoh and REI reviewed the flow of the logistics operations and the cargo handling in the warehouse, and made adjustments to shipments from the warehouse, shifting the focus from partial optimization by each contact point to total optimization. As a result, the companies decided to have parts and semi-finished products delivered to the assembly factory and finished products kept in the warehouse for delivery to a range of destinations transported in a mixed manner in a container, thereby improving the loading efficiency of marine transportation from Japan to the site.

As a result, the loading efficiency was improved by 10%, leading to substantial reductions in both the cost and CO_2 emissions associated with container transportation. It is estimated that at least 30 million yen can be saved per year and CO_2 emissions can be reduced by at least 700 tons a year through this improvement.

REI's plant in Tustin, California, the United States

"Packageless" delivery of production printers

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

The Ricoh Group is committed to reducing the use of packaging materials through such activities as promoting "resource-recirculating eco packaging." Production printers, the largest products both in terms of weight and size among our imaging systems, were traditionally delivered to users on wooden pallets and packaged in cardboard. This delivery method, however, resulted in a high packaging cost and a large environmental impact. It also caused inconvenience to customers, because it took time for them to open the packages, and a sufficiently large space was also necessary. In addition to these problems, "resource-recirculating eco packaging" was not very effective for large products produced only in a small quantity by model in terms of both cost and environmental impact reduction.

In response, the Logistics Innovation Group launched a project for the "packageless" delivery of production printers. First, the team asked all the departments related to the transportation of the printers, including the product design, logistics, and sales departments to join the project. Then the team "visualized" the transportation routes and methods for each of the transportation phases to examine how to transport the products in a better way. For three days in early August, the team conducted a transportation test on a route from Tohoku to Kansai via Kanto (1,830 km). In this test, production printers and accompanying bookbinding units wrapped in plastic wraps and fixed on pallets by belts were transported. In order to prevent the machines from being damaged by the belt, cushioning materials were used as required and also sleepers were applied to prevent the products from sliding on the pallets while being transported by truck. The team compared the temperature and moisture in the truck between the tested method and the conventional method, and it was revealed that the peak humidity was the same for the two methods, the highest temperature was 2°C lower in the tested method, thus giving less thermal impact on the products.

Based on the test results, the "packageless" delivery of production printers was actually started, and since January 2010, the transportation area for which this delivery method is used has been gradually expanded.

This activity has led to a reduction in the cost of packaging materials used for production printers and (bookbinding units). Specifically, the cost was reduced by about 40,000 yen per unit, and the waste of packaging materials was also reduced by 115 kg, equivalent to 70 kg in terms of CO_2 emissions reduction. Moreover, the time required for unpacking was reduced by as much as 70 minutes.

Implementing the packageless delivery

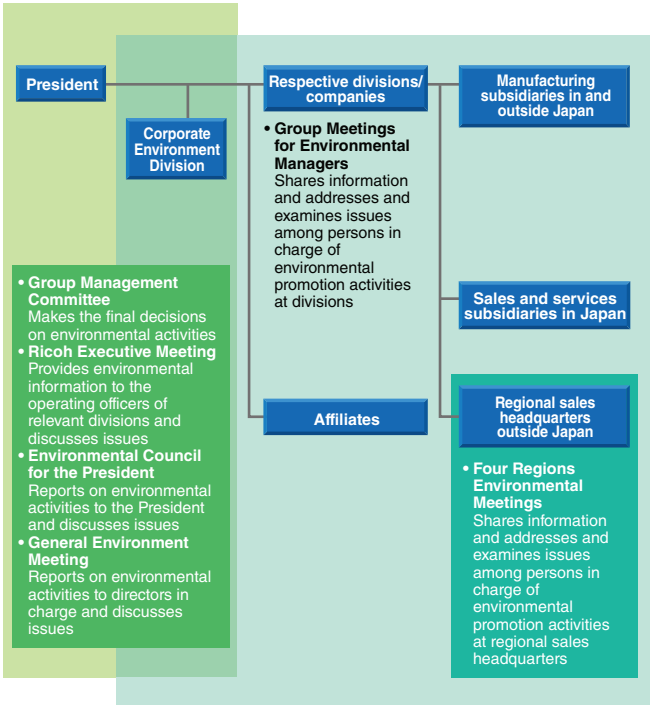
All packaging materials, except for the plastic wraps, can be reused, including the belts, cushioning materials, and sleepers.

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

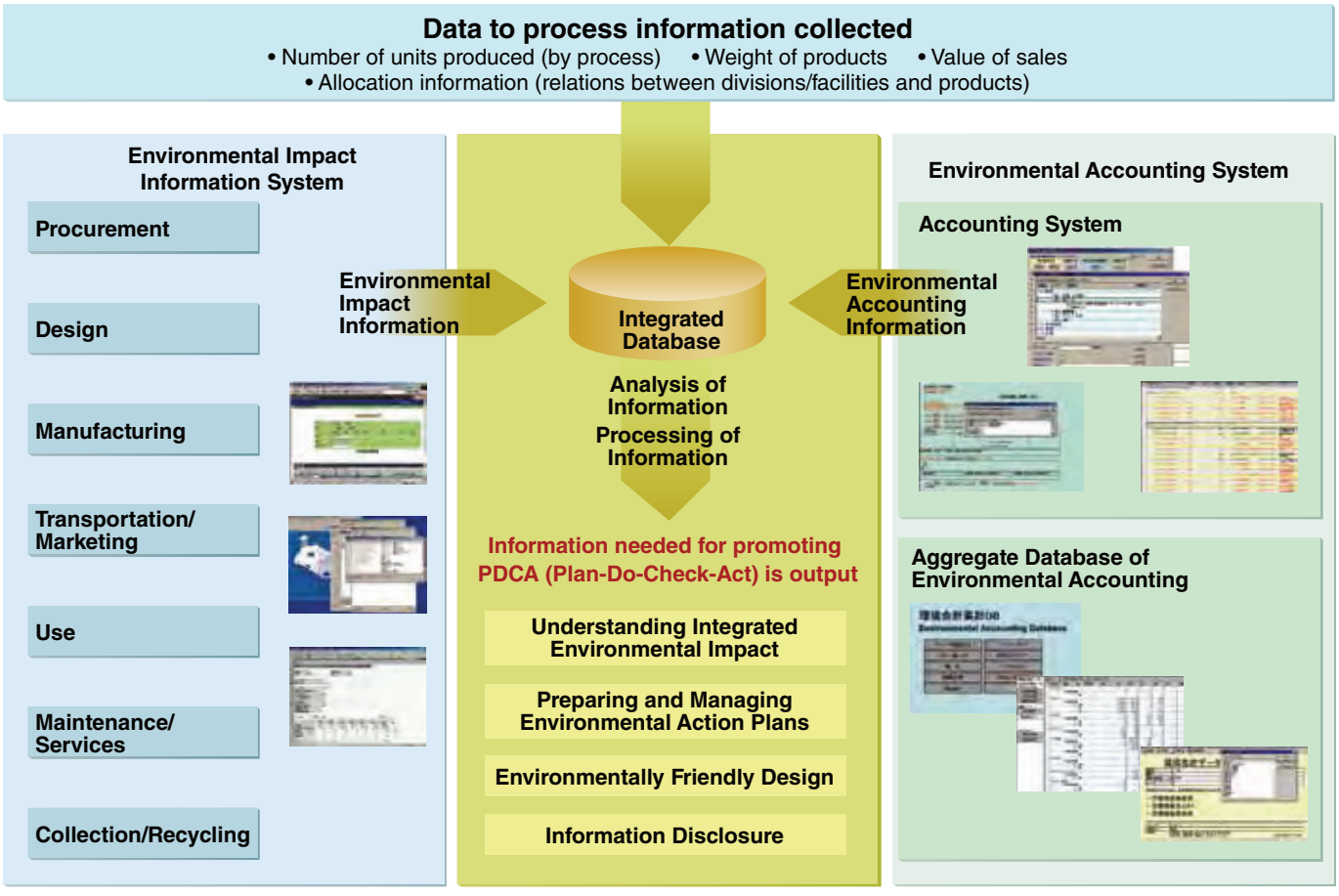
To realize sustainable environmental management, it is essential to pursue environmental conservation and business operations under a united decision-making scheme instead of implementing two separate, sometimes incompatible missions. The Ricoh Group promotes sustainable environmental management by incorporating 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 pages 60 and 61. 2. See pages 19 to 22. 3. See pages 61 and 65.

Chart of Ricoh Group's sustainable environmental management system



Sustainable Environmental Management Information System



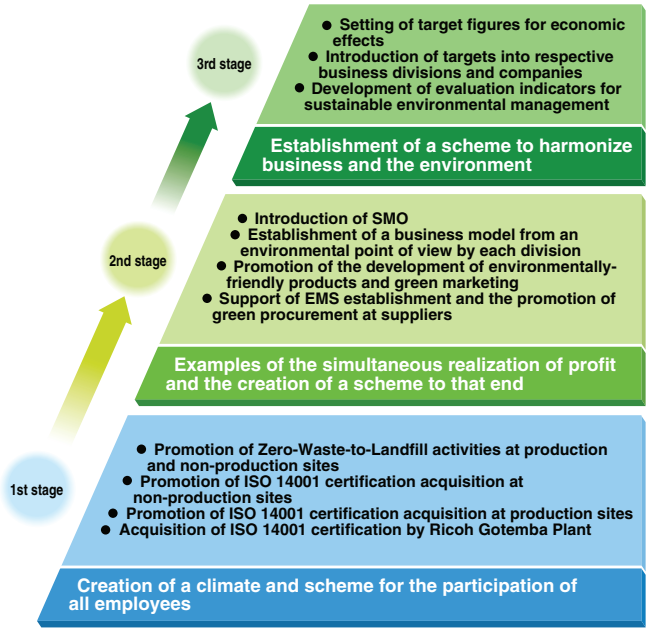
* For more information, visit http://www.ricoh.com/environment/base/02.html

Upgrading the level of the environmental management system

At the Ricoh Group, we have been working to develop and improve environmental management systems (EMS), initially on a business site basis, to accelerate our environmental conservation activities. Starting with the 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 February 2007, our business site-based EMS worldwide were revised to become business-division based ones, aiming to integrate environmental activities with business activities and thus enable effective sustainable environmental management. After the revision, decision-making on business activities and environmental conservation activities can be made by the same business division relevant to the activities. In the same year, Ricoh and its sales subsidiaries in Japan acquired integrated ISO 14001 certification. 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.

* 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

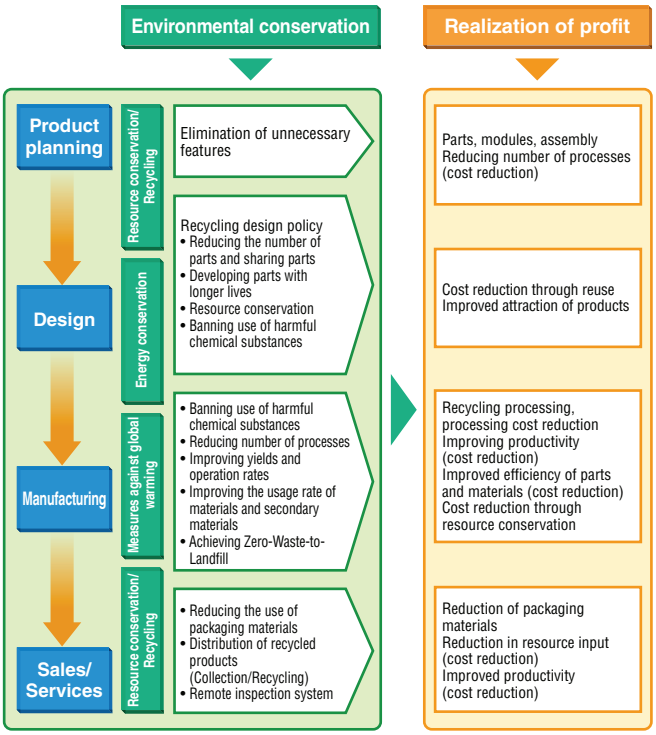


Participatory approach by all employees

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.

Sustainable environmental management activities participated in by all employees



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.

Penalties and fines concerning the environment (Ricoh Group)

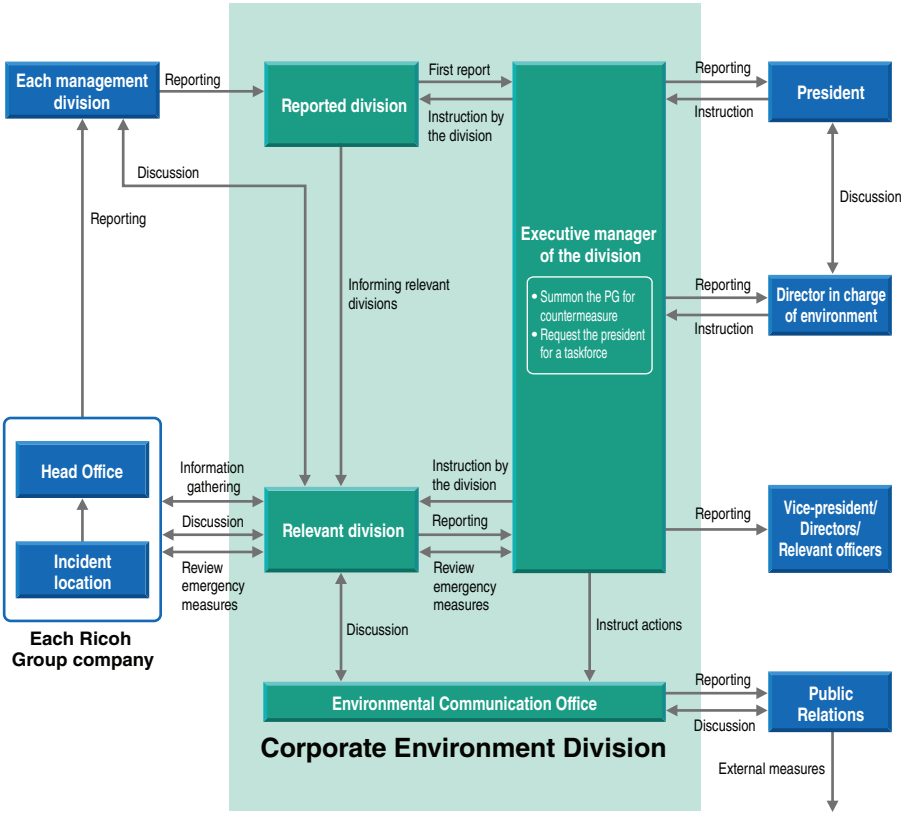
	FY 2008	FY 2009	FY 2010
No. of cases	0	0	0
Amount	0	0	0

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.

Action flow for environmental crises



Pursuing even greater reliability of environmental information

Improving the precision of environmental information

<Ricoh Group (Global)>

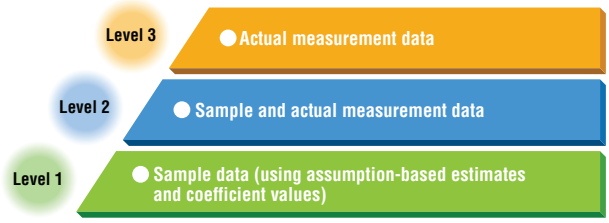
The Ricoh Group Sustainable Environmental Management Information System was launched in Japan in 2001 and on a global scale in 2002 to foster sustainable environmental management. Ricoh established this system with a view to reducing the lifecycle environmental impacts of its products, including not only the environmental impact of the activities of Group companies, but also from the procurement and manufacturing practices of the Group's parts suppliers and during use of its products by customers.

In order for a company to effectively conduct environmental management through a PDCA cycle, it is crucial to collect precise environmental performance data. It is, however, difficult for a company to measure the environmental impacts caused by a number of suppliers and the impacts resulting from the use of its products by customers, although it is possible for the company to obtain precise data about its own direct environmental impact. The company, however, cannot set specific environmental targets if it does not make an eco-balance assessment because it is difficult to collect precise data.

To deal with this problem, Ricoh has classified the environmental performance data collected, including actual results and sample values, which vary in precision level, into levels 1 to 3 and has been working to improve data precision for each of the levels. Also, in accordance with the business growth of the Ricoh Group, we have expanded the scope of data collection on a global scale to include businesses and companies newly joining the Group. We have thus strived to improve both the data precision and scope.

We make effective use of the collected environmental performance data in every aspect of sustainable environmental management, for example, in preparing and managing environmental action plans and promoting environmentally friendly design. We also use the data for annual environmental reporting and for the appropriate disclosure of information about our use of chemical substances and product recycling. In recent years, companies have been required to manage a huge amount of data on chemical substances to ensure compliance with the REACH Regulation*, for which our existing information system infrastructure has proved to be very useful. Moreover, in line with the action plan started in fiscal 2008, we have been fostering global environmental conservation activities. For example, we help customers reduce their environmental impact based on data about their rates of energy-saving product functions usage and we are improving the precision and scope of data on our logistics-related environmental impacts. * See page 34.

Levels of environmental performance data

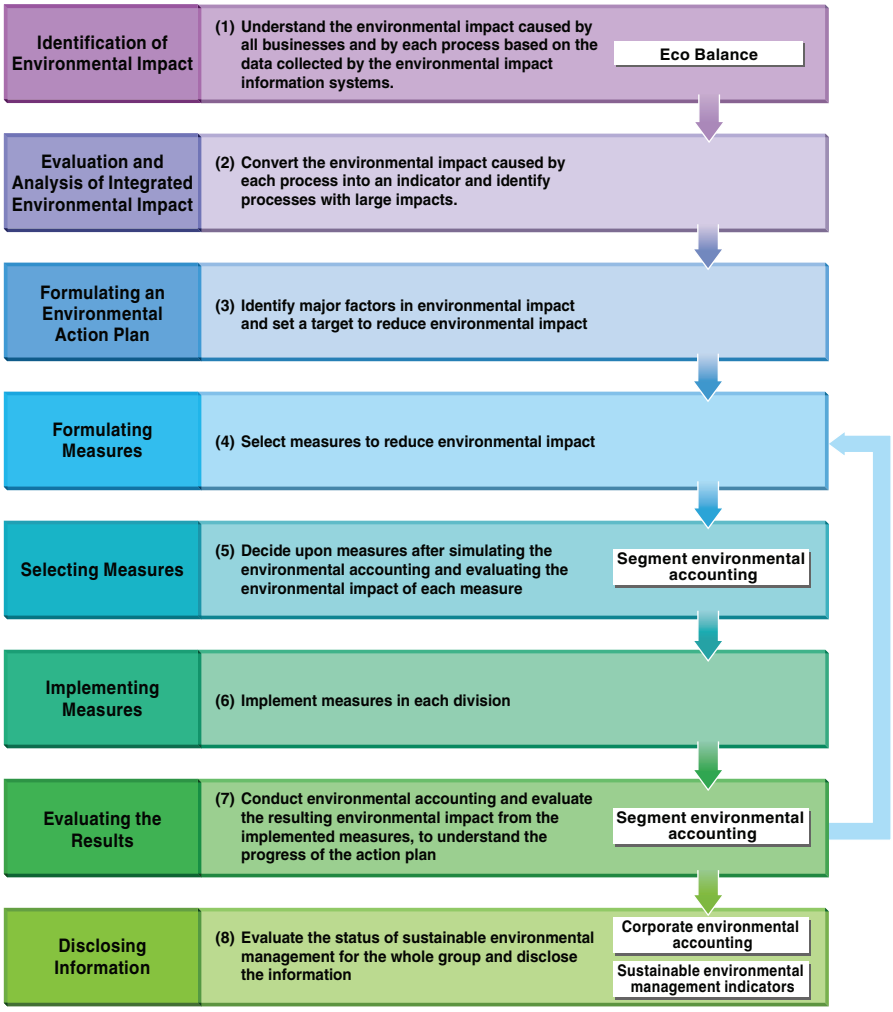


Action plans are mapped out and sustainable environmental management is evaluated using Eco Balance, integrated environmental impact, and environmental accounting as tools.

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 developed so that suitable action plans can be mapped out to reduce the environmental impact caused by all our businesses, and that effective measures can be examined and implemented, with the results 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 and 18. 3. See pages 62 and 63. 4. See page 61. 5. See pages 61 and 65.

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 a large environmental footprint. 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 a large environmental footprint. 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 61. 3. See page 59. 4. See pages 19 and 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. Since then, 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. Such data is prepared 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 the Group's 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 65.

● 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.

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).

Review of environmental accounting in fiscal 2010

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 compiling environmental accounting data for fiscal 2010, part of the existing data collection processes pertaining to the recycling business outside of Japan and to environment-related labor costs in Japan were revised. The purpose of this revision was to remove redundant entries detected in certain data regarding the recycling business outside of Japan, and to include the part of environmental-related labor cost in Japan which was erroneously omitted in the previous process. As a result of the revision, the labor costs in question increased approximately 15%.

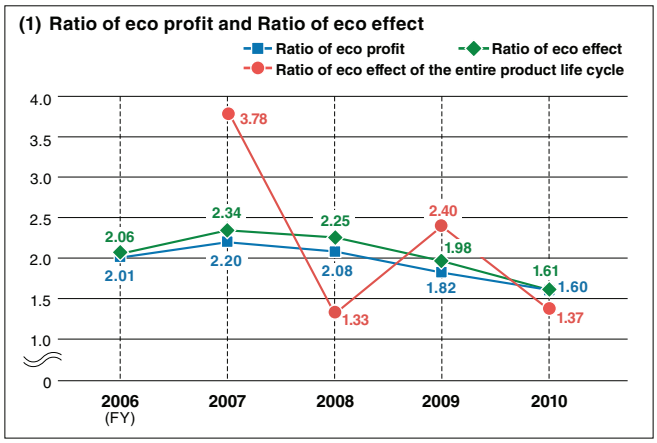
Other changes include the discontinuation of data collection of reduction effects in society's waste disposal cost reduction effects, which were included in the "social effect" category.

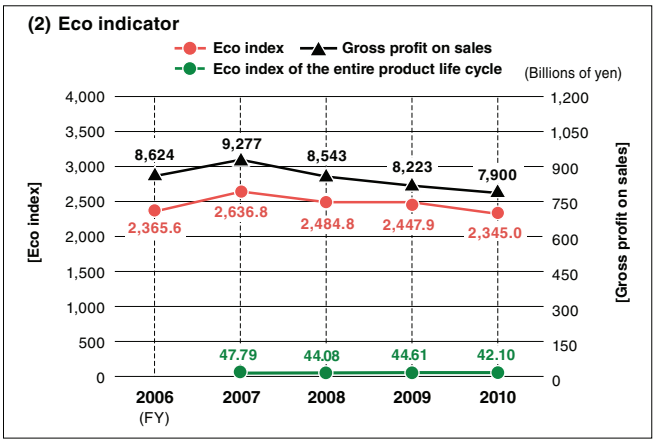
For fiscal 2010, the total environmental impact of the Ricoh Group showed a slight decline to 336,889 from 335,926 in fiscal 2009. However, our Eco Index for the fiscal 2010 saw a decline from the previous year because of the decrease in gross profit on sales affected by sluggish economies in and outside of Japan (see graph (2)).

The Ratio of Eco Profit and the Ratio of Eco Effect (an indicator that takes into account social cost reduction values) for fiscal 2010 also decreased from the previous year, mainly due to the increase in environmental conservation costs as a result of the aforementioned revision of environmental-related labor cost calculation (see graph (1)).

Meanwhile, recycling-related items, which make up the majority of costs and economic effects, showed relatively good progress during fiscal 2010, particularly in Japan, although our overall trend during the year was affected by the global economic downturn. We anticipate this upward trend of recycling-related items is likely to continue in the future.

Changes in the Ricoh Group's sustainable environmental management indicators





The Ricoh Group's sustainable environmental management indicators (fiscal 2010)	Results in fiscal 2010	Calculation formula
REP: Ratio of Eco Profit	1.60	Total economic benefit (35.77) / Total environmental conservation cost (22.38)
REE: Ratio of Eco Effect	1.61	[Total economic benefit (35.77) + Social cost reduction values (–0.02 + 0.25)] / Total environmental conservation cost (22.38)
Eco Index	2,345.0	Gross profit on sales (790.0) / Total environmental impact (33,688.9) × 10^5
RPS: Ratio of Profit to Social Cost	191.7	Gross profit on sales (790.0) / Total social cost (4.12)

* Unit: Billions of yen

Sustainable environmental management indicators of the entire product lifecycle (fiscal 2010)	Results in fiscal 2010	Calculation formula
REP: Ratio of Eco Profit	1.60	Total economic benefit (35.77) / Total environmental conservation cost (22.38)
REE: Ratio of Eco Effect	1.37	[Total economic benefit (35.77) + Social cost reduction values (–5.26 + 0.25)] / Total environmental conservation cost (22.38)
Eco Index	42.1	Gross profit on sales (790.0) / Total environmental impact (1,878,200.2) × 10^5
RPS: Ratio of Profit to Social Cost	3.44	Gross profit on sales (790.0) / Total social cost (229.78)

* Unit: Billions of yen

■ Review of Fiscal 2010

In fiscal 2010, the integrated environmental impact of the Ricoh Group increased by 1.9% from the previous year's level. The increase in product sales volume during the year (despite a 3.7% decline in our consolidated net sales in value terms) entailed an increase in our environmental impact during the "procurement of raw materials and parts," "manufacturing" and some other stages, which more than offset the reduction of our environmental impact during the "Use: Electric Power" and "Use: Paper" stages mainly due to the development of energy-saving technologies for color MFPs and greater use of energy-saving and duplex copying functions by customers.

(Dealing with new business and developing countries)

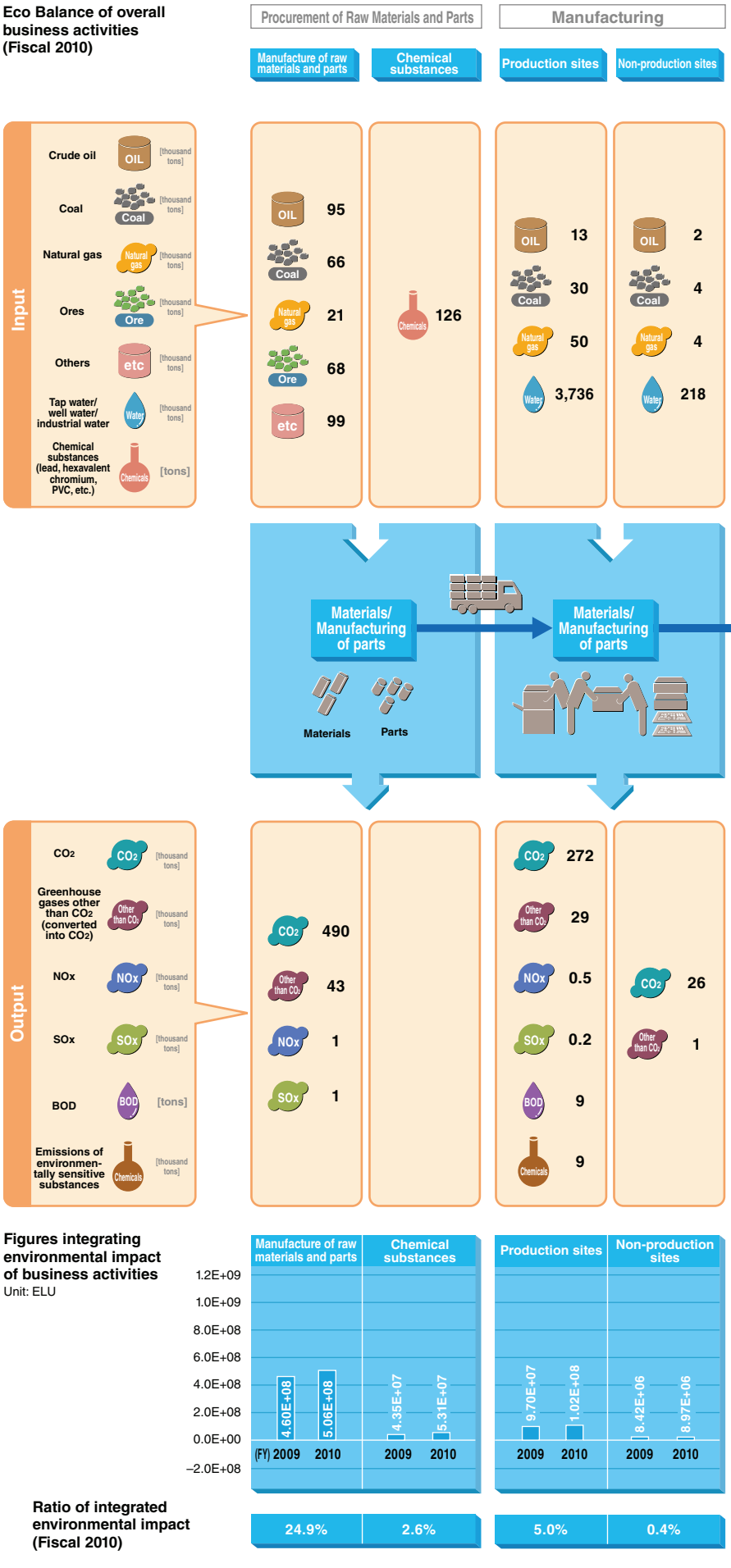
The "Eco Balance of overall business activities" here includes data for new businesses, such as those that were acquired through M&A in and after fiscal 2000, and businesses that are targeted to emerging nations and developing countries. It covers the environmental impact of the entire group. On the 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.

* About 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).

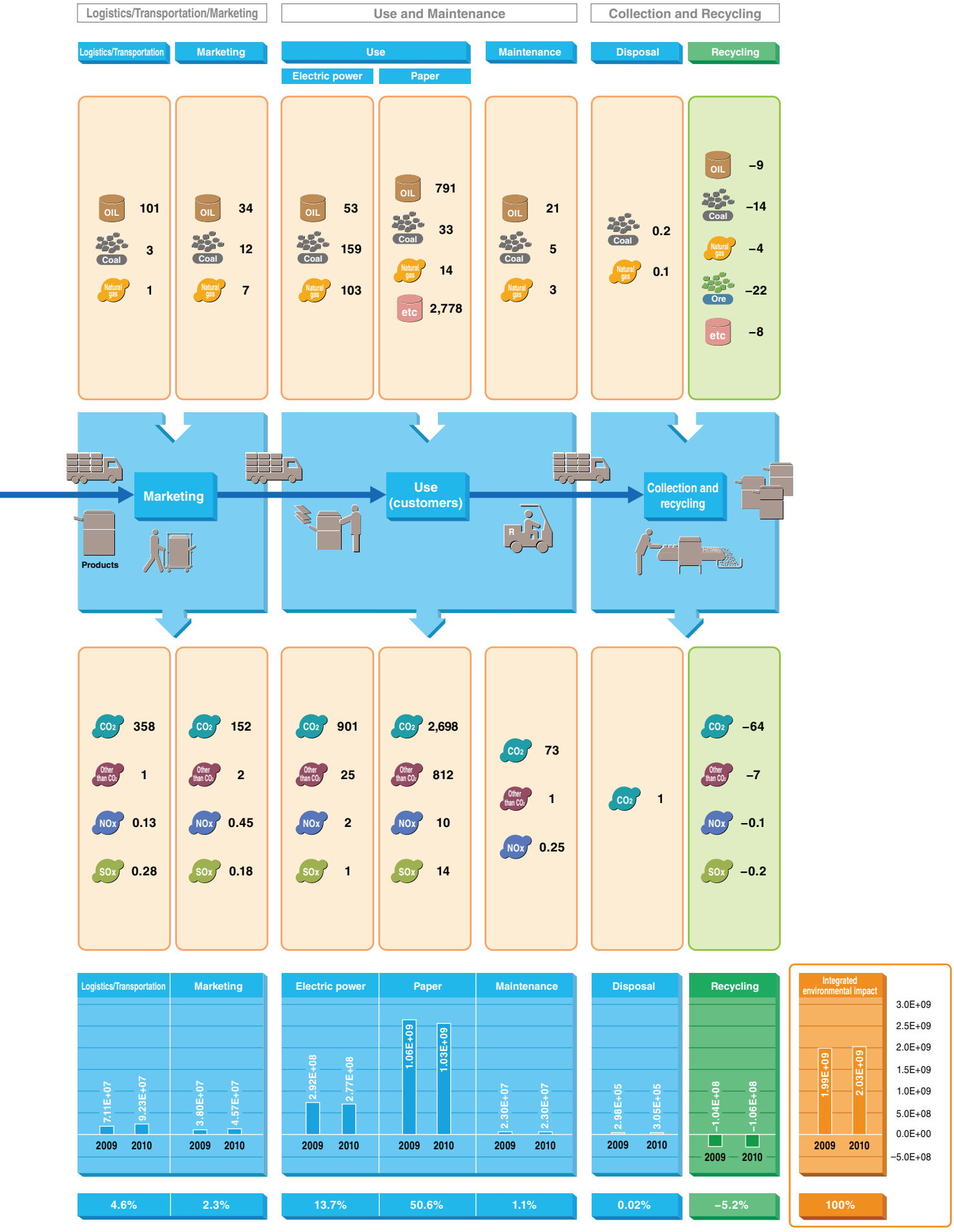
Eco Balance of overall business activities (Fiscal 2010)



Figures integrating environmental impact of business activities
Unit: ELU

Ratio of integrated environmental impact (Fiscal 2010)

24.9%	2.6%	5.0%	0.4%



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

Ricoh Group's corporate environmental accounting in fiscal 2010

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 = ¥85.77 €1 = ¥113.28)

Item	Costs			Economic Benefits		
	Environmental Investments	Environmental Costs	Main Costs	Monetary Effects	Category	Item
Business area costs	3.4	13.5	Pollution prevention cost ..... 2 Global environmental conservation cost ..... 2.3 Resource circulation cost 9.2	22.1	a1	Energy savings and improved waste processing efficiency
				62.2	b	Contribution to value-added production
				11.6	c	Avoidance of risk in restoring environments and avoidance of lawsuits
Upstream/ Downstream costs	0.0	138.7	Cost of collecting products, turning recycled materials into saleable products, and so forth	208.9	a1	Sales of recycled products, etc.
Administration costs	0.1	38.5	Cost to establish and maintain environmental management system; costs of preparing environmental reports and advertisements	10.8	b	Effects of media coverage, environmental education and environmental advertisements
Research and development costs	1.6	30.7	Research and development costs for environmental impact reduction	42.0	a2	Contribution to gross margin through environmental research and development
				[2.5]	S	Reduction in user's electricity expenses thanks to an improved energy saving function and product performance
Social activity costs	0.0	0.6	Cost for nature conservation and green landscaping outside business sites	—	—	None
Environmental remediation costs	0.0	0.7	Costs of restoring soil and environment-related reconciliation			
Other costs	0.0	1.0	Other costs for environmental conservation			
Total	5.1	223.8		357.7	Sum of a1: 230.9, a2: 42.0, b: 73.1, and c: 11.6	
				2.5	Total S's	

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

- **Environmental investment rate: 0.8%**
  [= Environmental investment (5.1)/Total investment (669)]
- **Environmental R&D cost rate: 2.8%**
  [= Environmental R&D cost (30.7)/Total R&D cost (1,108)]

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_2 126.1	1.0	126	0.02	CO_2 287,343	1.0	287,343	35.15
NOx –30.1	19.7	–592	–0.07	NOx 184	19.7	3,624	0.44
SOx –0.1	30.3	–4	0.00	SOx 6	30.3	181	0.02
BOD –0.6	0.02	0.0	0.00	BOD 7	0.02	0.1	0.00
Final amount of waste disposal 11.3	104.0	1,172	0.14	Final amount of waste disposal 261	104.0	27,188	3.33
Emissions of environmentally sensitive substances	(Ricoh standards per substance)	–2,309	–0.28	Emissions of environmentally sensitive substances	(Ricoh standards per substance)	18,553	2.27
Environmental impact reduction in lifecycle as a whole				Environmental impact in lifecycle as a whole			
CO_2 356,145	1.0	356,145	43.57	CO_2 4,906,659	1.0	4,906,659	600.29
NOx –11,256	19.7	–221,743	–27.13	NOx 14,180	19.7	279,343	34.18
SOx –6,260	30.3	–189,678	–23.21	SOx 16,283	30.3	493,389	60.36
Fossil fuel –	(Ricoh standards per substance)	–36,754	–4.50	Fossil fuel –	(Ricoh standards per substance)	7,316,545	895.12
Mineral resources –	(Ricoh standards per substance)	–318,613	–38.98	Mineral resources –	(Ricoh standards per substance)	2,806,014	343.29
Other –	(Ricoh standards per substance)	–19,250	–2.36	Other –	(Ricoh standards per substance)	2,980,052	364.59
Total (environmental impact reduction at business sites)		–1,607	–0.20	Total (environmental impact at business sites)		336,889	41.22
Total (environmental impact reduction in lifecycle as a whole)		–429,893	–52.59	Total (environmental impact in lifecycle as a whole)		18,782,002	2,297.84

* 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 63 and 64 (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 47 for the asset retirement obligations (environmental liabilities).

Data coverage
● **Companies: Major members of the Ricoh Group** See page 79.
● **Period: From April 1, 2010 to March 31, 2011 (for costs and total environmental impact)**
* Environmental impact reduction represents the difference of figures between fiscal 2009 and fiscal 2010.
* Social cost is calculated using the factor 108 of Euro/t-CO_2 (12,234 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

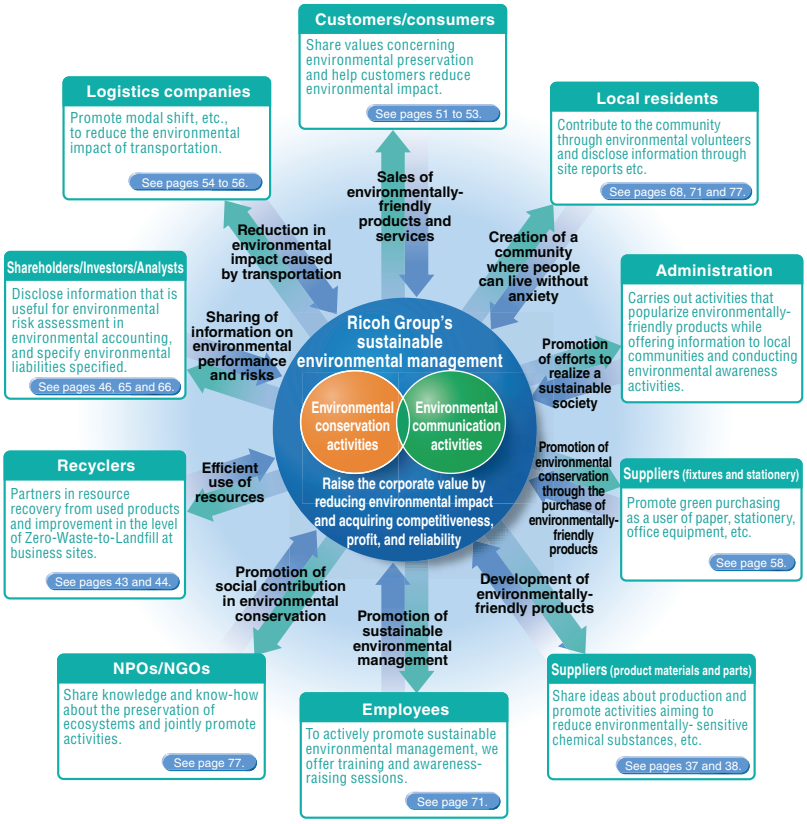
(5) Formula for social effects (S) (economic benefits from use of products by customers)

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 Co., Ltd. (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 Co., Ltd. (Japan)>

In December 2010, Ricoh participated in Eco-Products 2010, a general environmental exhibition held annually at Tokyo Big Sight. A total of 745 companies and organizations had booths at the event, which attracted 183,000 visitors. Ricoh organized a categorized exhibition at its booth according to three themes: environmental impact reduction in manufacturing process, environmental impact reduction in office operations, and biodiversity conservation activities. The company also introduced its unique technologies and efforts to contribute to environmental preservation. The highlights of the 2010 exhibition included new technologies developed for purifying water used for manufacturing, QSU function for color copiers, "level-color" mode printing as well a cart production line system.

Production of TV commercials on the environment
<Ricoh Co., Ltd. (Japan)>

Ricoh believes in contributing to the reduction of environmental impact in society in general by effectively using communication tools. In fiscal 2010, we aired a series of TV commercials under the title "Eco Banashi" (roughly translated as "eco-friendly stories"), which introduce simple ways to be eco-friendly. This advertising received a TV Commercial Excellence Award at the 14th Environmental Communication Awards hosted by the Japanese Ministry of the Environment and the Global Environmental Forum. In addition, the stationary placement version within the series (about reducing unnecessary clutter but maintaining efficiency at work) was awarded a bronze prize at the 50th Advertisement Selected by Consumers Contest hosted by the Japan Advertisers Association.

* For more details regarding the competition, please visit the website of the association at: http://www.jaa.or.jp/about_01.html (Japanese only)

* Click the following URL to watch the video: http://www.ricoh.co.jp/no1/ecobanashi/movie1.html (Japanese only)

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

The Ricoh Group's environmental reports have been issued annually since the first was published in April 1998, which disclosed fiscal 1996 data. Since the 2004 edition, we have been issuing three Sustainability Reports (Environment, Corporate Social Responsibility, and Economic) and a corporate profile*, which are all published in June. The 2010 Sustainability Reports received an Excellence Award at the 14th Environmental Communication Awards hosted by the Japanese Ministry of the Environment and the Global Environmental Forum. The Sustainability Report (Environment) 2010, meanwhile, was chosen to receive an Excellence Award at the 14th Environmental Report Award hosted by Toyo Keizai, Inc. and Green Reporting Forum.

Award ceremony for the 14th Environmental Report Award

* http://www.ricoh.co.jp/release/2010/0625_1.html (Japanese only)

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 departments, local residents, 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. The Environmental Report 2010 issued by Ricoh Electronic Devices Company was chosen as a recipient of a Site Report Award at the 14th Environmental Report Award.

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

Environmental web site
<Ricoh Co., Ltd. (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/

Installing a 100% renewable-energy powered billboard in London
<Ricoh Group (Global)>

On June 28, 2001, Ricoh unveiled an advertising billboard powered by 100% renewable energy. Located about halfway between Heathrow Airport and central London, it is the company's second eco billboard, following the fully solar-powered billboard installed in New York's Times Square in April 2009. Designed under Ricoh's sustainable environmental management initiatives, the purpose of these two billboards is to demonstrate the company's commitment to renewable energy. The new billboard, three meters high by 12 meters across, is powered by an efficient combination of solar and wind energy generated by 96 solar panels and five wind propellers, which average approximately 12,612 Wh/day. The amount of power generated will vary from day to day depending on the weather, meaning that on some days the board will not be lit up while on others surplus energy can be stored in the battery.

Eco billboard in London

Ricoh Global Eco Action 2010

<Ricoh Group (Global)>

We launched Ricoh Global Eco Action in 2006 as an annual event held to raise the environmental awareness of Ricoh Group employees. In the event, which is held on a day during the period around the UN's World Environment Day, participants think about and conduct activities for the global environment. For example, 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. Again, in 2010, many employees in each geographical area participated in the event and enjoyed conducting activities with local people. The range and scope of activities conducted in the event have expanded with the participation of not only employees but also their families and friends, customers, neighboring companies, and local governmental agencies.

■ Japan

Experiencing biodiversity under Tokyo Tower

■ The Americas

Ricoh El Salvador
Inviting employees' children to the office to raise their environmental awareness
(An environmental presentation held for the children)

Ricoh Latin America
Competition for artworks based on environmental themes
(Youngster and artwork in the competition)

■ Europe

Ricoh Europe London Head Office
Weeding alien plants around the Thames

■ China

Ricoh China
Regularly holding a joint event for the promotion of the World Environment Day with the government
(Donation ceremony held as part of the event)

■ Asia Pacific

Ricoh Australia
Creating a "power cycle" with a local football team

Lighting rugby stadium with green power
<Ricoh Co., Ltd. (Japan)>

There was something special about an official match of the Japan Rugby Top League (organized by the Japan Rugby Football Union) held on September 18, 2010—the game between Ricoh and Fukuoka Sanix at Chichibunomiya Rugby Stadium in Tokyo was powered by natural energy. Using a green power certificate that Ricoh had purchased from Japan Natural Energy Company Limited made it possible to deem the electricity used to illuminate the stadium during the night game and operate the large stadium screen as "green power" generated from natural sources. The green power used during the rugby match totaled approximately 2,000 kWh, equivalent to the average seven-month electricity consumption of one family.

* For more details, please visit the Ricoh Black Rams official web site at: http://www.ricoh.co.jp/rugby/news/2010-2011/info/201009.html (Read the story dated September 14, 2010.) (Japanese only)

Encouraging Group employees to make their houses eco-friendly
<Ricoh Leasing Co., Ltd./ Ricoh Creative Service Co., Ltd. (Japan)>

The Ricoh Group encourages Group employees in Japan to make their houses eco-friendly by providing them with preferential interest rate loans and the right to receive carbon offset credits[1].

When targeted employees add solar power generation systems, heat insulating materials or other devices as described in (1) to (3) below to their houses, Ricoh Leasing will provide them with loans at preferential interest rates, and Ricoh Creative Service[2] will also provide them with consulting services for the installation/refurbishment work.

(1) Solar power generation systems for household use installed by professional engineers
(2) EcoCute natural refrigerant heat pump electric hot water suppliers or Ene Farm battery-type generation systems for household use installed by professional engineers
(3) Equipment targeted in the "Eco Point" system implemented by the Japanese Ministry of the Environment[3]

Moreover, employees taking out loans will receive carbon offset credits according to the amount of CO_2 emitted from their households over one or five years (depending upon the details of the installation/refurbishment work), enabling the employees to lead carbon-neutral lives.

The diffusion rate of solar power generation systems is still only 0.1% among households in Japan and it is expected that many more households in Japan will have their houses refurbished to make them more energy-efficient and eco-friendly, for example by increasing their heat insulation performance.

The Ricoh Group will encourage employees to reduce their environmental impact at home, thereby making an extra contribution to the creation of a sustainable society in addition to making contributions through its business operations.

1. To enable those who emit CO_2 and other greenhouse gases in their daily lives or economic activities to invest in greenhouse gas emission reduction activities to offset their own emissions on the premise that they make their best efforts to minimize their emissions, the Japanese Ministry of the Environment established a domestic offset credit system in March 2008.
2. Ricoh San-ai Service was integrated with Ricoh Engineering to become Ricoh Creative Service on April 1, 2011.
3. Under the "Eco Point" system, people can earn "eco points" by applying heat insulating material to the windows, outer walls and roofs of their houses and also by installing solar power generation systems, water-saving toilets, highly heat-insulated bathtubs, and barrier-free facilities in their homes.

Ricoh Group's environmental management incorporated into study materials at HBS
<Ricoh Group (Global)>

Environmental management at the Ricoh Group has been incorporated into case study materials for the Advanced Management Program (AMP) at Harvard Business School (HBS) in Boston, in the United States.

AMP is an intensive course that runs six days a week for eight weeks, with formatted discussions covering the latest topics in business administration and using examples of excellent management at global corporations. Most of the students on the course are in managerial positions or on the fast track to management, and they stay in accommodation on the university campus during the course, which helps them develop relationships that can prove useful in their careers. Environmental management at Ricoh was selected as the first case study, when HBS decided to incorporate a case related to sustainability and management in 2010. In March 2009, Dr. Robert Eccles, Senior Lecturer at HBS, visited Japan with the purpose of collecting data in meetings with Ricoh's president and CEO, executives in charge of finance and environment, and specialists at the Gotemba and Numazu Plants.

Work in the classroom finally started on May 18, 2010 with case materials prepared from the data collected by Dr. Eccles on his visit to Ricoh. Tatsuo Tani, the former general manager of the Corporate Environment Division at Ricoh, was invited to this first class.

The students consisted of 140 executives from 40 different countries. The night before the classroom session, the students were asked to read the materials on Ricoh and participate in preliminary group discussions; so they were well prepared. The students engaged in discussions packed with acute insight regarding Ricoh's long-term environmental impact reduction goals for 2050 and the company's environmental management activities. Student comments, such as, "Preempting social changes in 2050 is necessary for corporations," and "We should do a better job of telling consumers and investors how environmental management is linked to improvements in competitive strength," showed that the students had empathy with Ricoh's environmental management. The discussions were very substantial and provided food for thought for Ricoh in our quest to raise the level of quality management.

* The case study materials prepared and used for the HBS class reported above have been compiled under the title "Ricoh Company, Ltd." (Eccles, Robert G., Amy C. Edmondson, Marco Iansiti and Akiko Kanno. Harvard Business School, 2010), and are offered in a downloadable PDF format ($6.95) at the Harvard Business Review online store at: http://hbr.org/product/ricoh-company-ltd/an/610053-PDF-ENG?Ntt=Ricoh

Mr. Tani (center) answers questions in the HBS class.

Communication with Local Communities

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 over 1,500 students from more than 65 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 top awards were given to Yinshuo Zhang and Kyle Scott Saleeby in an award ceremony held in Los Angeles, California.

(From left) Robert Whitehouse (Director, Environmental Management and Product Compliance, RAC), Yinshuo Zhang, and Kyle Scott Saleeby

Creating a Butterfly Trail
<Ricoh (Singapore) Pte. Ltd., Ricoh Asia Pacific Pte. Ltd. (Singapore)>

On November 27, 2010, Ricoh (Singapore) Pte. Ltd. (RSP) and Ricoh Asia Pacific Pte. Ltd. (RA) organized a tree planting event in Istana Park, Singapore. More than 300 volunteers, including RSP and RA employees and their families, as well as some customers of the two companies participated. On that day, a Butterfly Trail was also opened in the park. The creation of the trail, including tree and greenery planting to make the park a better habitat for butterflies, was a national project, aiming at creating a place where local citizens, students, and tourists could relax in the beautiful natural environment and gain a better understanding of the local ecosystem. As keen supporters of the project, RA and RSP worked closely with the National Parks Board and the Singapore Nature Society, a non-governmental organization, to create the nature trail in Istana Park.

Participants, including children, planting seedlings

Nobuaki Majima, Managing Director, RA (left) and Vincent Lim, Managing Director, RSP, holding the sign for the Butterfly Trail

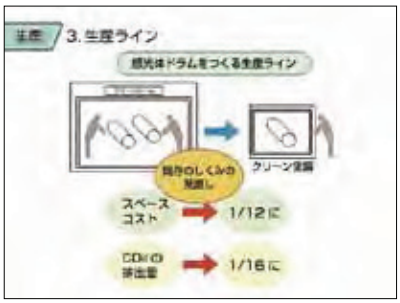
Environmental Education/Awareness Building

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 it is also important is to give all 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. The training also motivates them to proactively encourage as many people as possible to join them in pursuit of sustainable environmental management.

Environmental education programs for employees
<Ricoh Group (Global)>

Ricoh Group employees can take environmental e-learning courses through the in-house LAN system*. The curriculum includes “Companies’ Missions in Global Environment Problems,” and “Activity Cases in Respective Divisions.” To help every employee incorporate sustainable environmental management perspectives into their day-to-day operations, many case studies of environmental activities are included in the course materials. We upgraded the course curriculum in fiscal 2010. In addition to the existing three focus areas: energy conservation and prevention of global warming, resource conservation and recycling, and pollution prevention, a new section focusing on biodiversity was included in the course subjects. The additional section is designed to explain the meaning and importance of the consideration for biodiversity conservation in the course of our business activities. The e-learning courses offer an intermediate program for the managers and staff in charge of environmental promotion at each business division, so they can learn how to effectively incorporate environmental perspectives into the daily operations of their respective divisions, how to evaluate the outcome of sustainable environmental management, etc.

* Outside of Japan, the courses are offered on compact disk.



Example screenshots from our e-learning course

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

As indicated in Ricoh's Environmental Principles*, 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. In line with this policy, we have started new initiatives to reduce our impact on biodiversity in our overall business activities and to contribute to biodiversity conservation, in addition to a variety of existing measures, including ecosystem conservation programs and employees' voluntary activities.

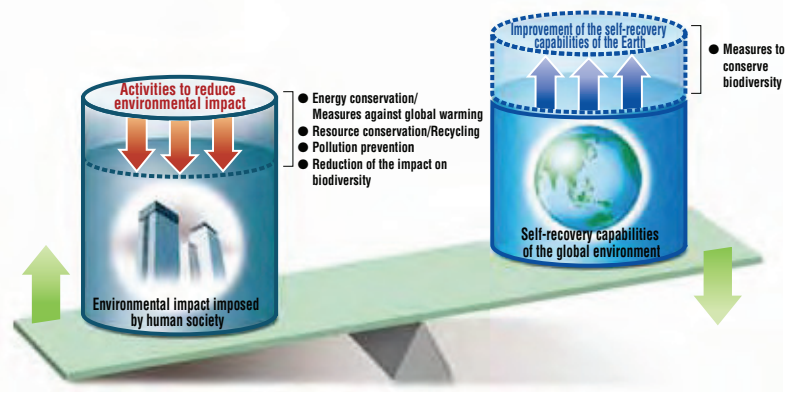
* See page 16.

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 combined 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 Co., Ltd. (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 37.

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

The Ricoh Group created and uses the Map of Corporate Activities and Biodiversity that shows the relationship between corporate activities, such as product lifecycle and land use, and biodiversity. 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 are using the discoveries from the mapping to enhance our biodiversity conservation activities in close cooperation with each business division.

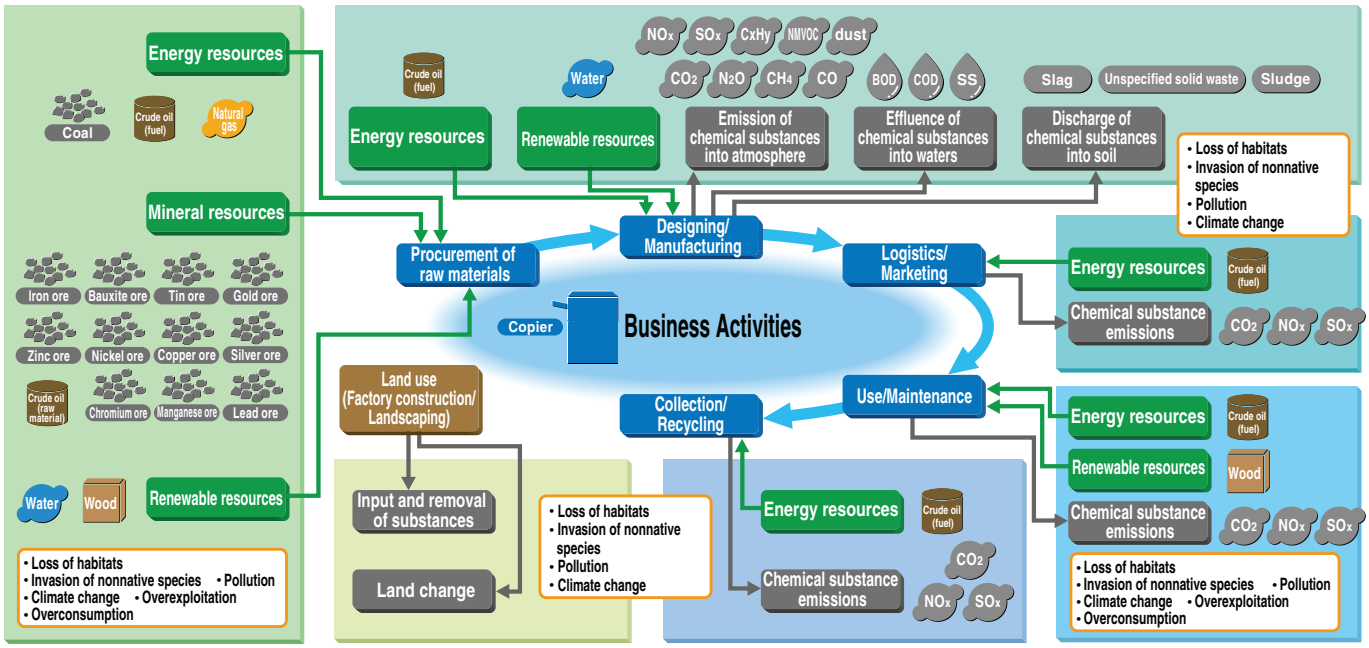
Conserving the biodiversity of office and factory premises
<Ricoh Co., Ltd. (Japan)>

At the Ricoh Group's office and factories around the world, green space and greenery constitute an important part of these business sites. Some locations even have lush green forests within their premises. To conserve the biodiversity of such natural environment within our properties, the current Environmental Action Plan, effective for three years from fiscal 2011, calls for: (1) higher greenery coverage, (2) removal of invasive alien species, and (3) minimal use of chemical pesticides and fertilizers.

Managing office and factory premises using the IPM method
<Ricoh Ohmori Office (Japan)>

Continued use of chemical pesticides and fertilizes to maintain green space will make the place an unsuitable habitat for a wide variety of creatures. In light of this finding of our monitoring of the creatures inhabiting the premises of the Ricoh Ohmori Office, we started to manage the green space in the office under the approach of integrated pest management (IPM)*, a comprehensive approach to pest and weed management with minimal use of chemicals, in fiscal 2010. We are currently experimenting with IPM with the aim of recovering the health of the ecosystem of our premises. From fiscal 2011, periodical monitoring of the green space in question will begin to assess the effects and challenges of IPM. Based on the assessment results, we will be formulating a green space management manual and follow the instructions specified therein to maintain greenery in our office and factory premises around the world.

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



* Integrated pest management: An integrated approach for pest and weed control, which has been internationally adopted in agricultural operations in recent years. IPM adopts an optimal combination of pest and weed prevention and control means based on the consideration of every possible technique available. It aims to reduce the use of pesticides and other chemicals to minimal levels while at the same time preventing the proliferation and growth of pests and weeds and reducing and minimizing hazards to human health and the environment. Major IPM components include:
- Physical control: Using light, sound, heat and mechanical methods;
- Chemical control: Applying chemicals derived from natural ingredients;
- Biological control: Introducing natural enemies of target pests; and
- Cultivation control: Improving the quality of soil (e.g. enhancing drainage and ventilation)

Specialist Interview

INTERVIEW

Providing professional support for Ricoh's ambitious initiative

● **GREEN WISE Co., Ltd.**
Mr. Yuichi Tamaru, Chief Executive Officer

Supporting pioneering IPM-based corporate greenery management toward biodiversity conservation

Our company offers biodiversity-friendly green solutions to clients through our green management service. In response to Ricoh's request, we are helping them manage the green space in their Ohmori Office by practicing integrated pest management (IPM). IPM is a new approach for pest control, which has been increasingly adopted in the agricultural sector worldwide in recent years. By utilizing nature's disease and pest control mechanisms, it aims to minimize adverse impact on human health and the environment. Ricoh Ohmori Office became the first corporate facility to introduce this method in its greenery management, while IPM has been already adopted in green houses or other closed spaces.

When we started to practice IPM 11 years ago, even our employees—green management specialists—thought that it was impossible to manage green spaces or farms without using chemicals. However, chemically maintained soil cannot support the lives of organisms, apart from an extremely limited range of creatures, and it makes crops less healthy, more vulnerable to pests and diseases over time. Considering these facts and many other negative effects of the use of agrochemicals, such as health risks to plant growers, the extinction of beneficial insects, and the increase of pests' resistance, we concluded that we had no choice but to introduce IPM. After shifting from conventional pest management to IPM, site monitoring and manual pest control is important. During the initial phase after the introduction of IPM, abnormal outbreaks of pests sometimes occur. Regular site monitoring to detect and remove pests will eliminate the need to use chemical agents (naturally derived pesticides may be applied when necessary, though). While this approach is labor- and cost-intensive from short-term perspectives, it will create such an environment that the population of beneficial insects that eliminate pests will increase, the soil will become more fertile, and organisms helping the growth of plants can inhabit the site from the middle- to long-term. Therefore, it is fair to say that IPM is a rational, low-maintenance pest control method, eliminating dependence on chemicals.

I believe biodiversity conservation activities can generate greater effects when implemented broadly on a regional basis. I hope the introduction of IPM at Ricoh, a corporate environmental leader, will promote public recognition of this new methodology and inspire other organizations to follow.

When considering biodiversity conservation, public attention tends to focus on the protection of endangered spices. However, achieving optimal balance of overall ecosystems is also equally important. We would like to make our utmost efforts to help Ricoh succeed in their project at the Ohmori Office, and then expand IPM practices to other Ricoh sites and surrounding areas, and eventually to other corporations.

GREEN WISE Co., Ltd. (Tama City, Tokyo)

(From left)

Mr. Norifumi Hirata
Manager, Business Development Group, Sales Management Division

Mr. Yuichi Tamaru
Chief Executive Officer

Ms. Keiko Takeuchi
Business Development Group, Sales Management Division

An example of IPM application utilizing the balance of nature. To grow crops which are likely to become prey to birds and insects, natural herbs, green onions, and other strongly smelling species are often planted around them or an environment where natural enemies of target pests can live is created.

● **Mr. Norifumi Hirata, Manager, Business Development Group, Sales Management Division**

"For the past 10 years, we have been developing and accumulating the experience and know-how of IPM practices on our own, as the regulatory framework for agrochemicals and organic farming has yet to be sufficiently developed. Crops grown by IPM are fresh and vigorous, with a strong aroma and a deep, distinct flavor. You can tell what the optimal environment for plants should be."

● **Ms. Keiko Takeuchi, Business Development and Sales Group, Sales Management Division**

"We conduct weekly monitoring of the green spaces of the Ohmori Office, to which chemical agents are no longer applied. Early detection and removal of harmful insects can eliminate the need for insecticide use. So far, the occurrence of pests has been maintained within the expected range."

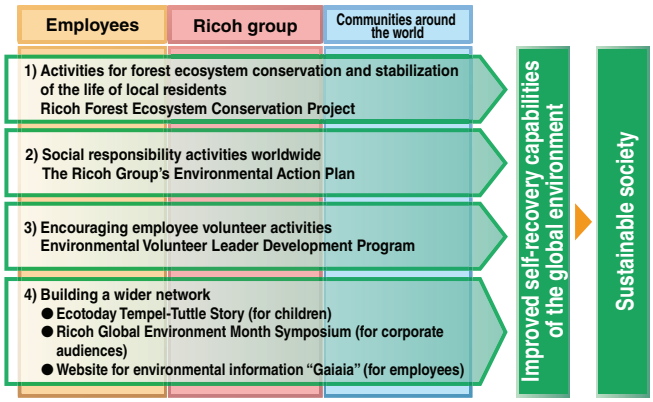
* Corporate website of GREEN WISE Co., Ltd.: http://www.greenwise.co.jp/ (Japanese only)

Social Responsibility Activities

Social responsibility 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, group-wide social responsibility activities, promotion of employee volunteer activities, and building a wider network. With regard to social responsibility 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 social responsibility activities



Forest management project at Ena Plant
<Ricoh Elemex Corporation (Japan)>

The Ena Plant of Ricoh Elemex Corporation (REX) in Gifu Prefecture has extensive woodland on its 430,000-square meter premises. Indeed, the plant building takes up only 23,000 m^2. To conserve this forest, REX launched the Ena-no-Mori Zukuri in fiscal 2010 in corporation with the C.W. Nicol Afan Woodland Trust and started to operate the project in earnest in fiscal 2011. On April 9, 2011, 21 participants from the Ena Plant as well as from REX Head Office, Technical Center and Okazaki Plant (all located in Aichi Prefecture), conducted a vegetation survey* and thinned out the forest under guidance from the trust. Learning how to use the appropriate tools and tree cutting techniques, the participants cut down unnecessary trees in the forests, using saws and chainsaws. Despite the rainy weather, they were able to complete the planned work as scheduled because they increased their work speed when the weather started to recover.

Other fiscal 2010 activities at Ena Plant—home to a wide variety of indigenous wetland plants and wild birds, surrounded by untouched nature including extensive forest and numerous streams—include nature walk events and workshops to help obtain the necessary knowledge and skills to protect the natural inhabitants and manage the forest in a sustainable manner. In fiscal 2011, REX will be conducting forest conservation activities on a monthly basis and inhabitant protection activities on a quarterly basis to create a sustainable forest.

* A field study to understand the vegetation of the target area by identifying component species of the target area and their degree of coverage

* http://www.ricoh.co.jp/ecology/history/all/2011/0409_01.html (Japanese only)

Vie & Couleurs project
<Ricoh Industrie France (France)>

Ricoh Industrie France S.A.S. (RIF) launched and is promoting the Vie & Couleurs (Life & Colors) project in fiscal 2009, with the aim of achieving environmentally, socially and economically sustainable development. Through this biodiversity conservation project, the European manufacturing subsidiary is working to create a comfortable environment not only for its employees but also for plants, birds, and other animals in the vicinity. In cooperation with a local environmental organization called the Regional Association for Initiation into the Environment and Nature in Alsace, employee volunteers plant trees and clear land on the factory premises. The project has the following three objectives:

(1) Increasing the biodiversity in the 120,000 square-meter area of RIF's premises and thereby contributing to the development of a "green network" in Alsace;
(2) Protecting indigenous species in Alsace and conserving the wild flora and fauna of the surrounding areas; and
(3) Promoting awareness of environmental conservation to RIF employees, partner companies, and the broader public.

Under the Vie & Couleurs project, RIF volunteers have created a biotope pond, a pasture, and a flower field of some 1,400 m^2 with various kinds of flowers in all four seasons; installed birdhouses; and developed the inventory list of flora and bird species inhabiting the factory premises. During fiscal 2010, the project participants also created hedgerows and planted fruit trees, and conducted a feasibility study regarding the possible launch of sustainable beekeeping on the site.

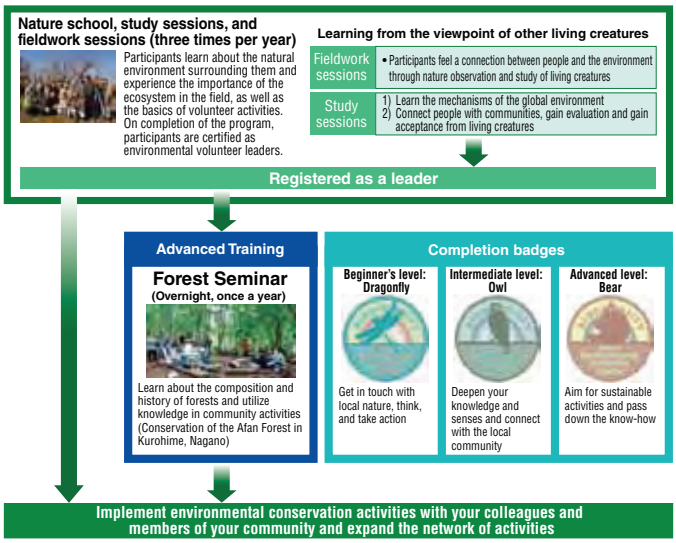
In addition to implementing the activity, RIF has been focusing on communicating its biodiversity conservation efforts to the public. For instance, the company provided related employee education programs, and produced a video introducing its green activities which it showed in external seminars and lecture events. Such communication activities were praised as an exemplary case of environmental education at a host of related conferences in France.

Activities by Our Environmental Volunteer Leaders

<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 more than 500 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

Training "environmental volunteer leaders" to become more effective communicators so that they can widely share their experiences in the natural world, including interactions with other creatures

On September 12, 2010, the Ricoh Nature School was held in Aoyama Elementary School, Tokyo, in collaboration with the elementary school and the Aoyama Merchants Association. In the same elementary school, the Ricoh Nature School Practice Courses took place in February 2010 and Ricoh's environmental volunteer leaders and local students created a man-made biotope pond, aiming to restore natural space in the urban environment. The biotope pond which was created has been monitored on a weekly basis. Although located in the middle of Tokyo, the tiny pond has become a home to various plants, frogs, dragonflies, and other creatures, which together create a dynamically changing ecosystem. Environmental volunteer leaders need to communicate such observations and other experiences effectively in their own words in order to expand the network of biodiversity conservation. With this recognition, the latest Ricoh Nature School was designed to build the necessary knowledge and skills to become effective communicators who can deliver their findings, inspirations and emotions.

The program started with an introduction of the "Land Has Memory" project by Mr. Hirokazu Ichikawa of Aoyama Merchants Association, a biodiversity conservation initiative in the Aoyama district. Then, Risako Noguchi of the Nature Citizen Institute gave a lecture on a biotope's roles and the possibilities in restoring once-lost natural environment. Following that, the 25 volunteer leader participants were trained to become more effective communicators by, for instance, sharing their experiences and teaching about the role of a biotope through group work and other activities. The volunteer leaders expressed their positive comments, such as: "Knowing is one thing and explaining is quite another!" and "My understanding was actually improved by explaining the topic to other people."

A participant's comment: "Giving an explanation with a creature you're talking about present is far more compelling than a classroom explanation!"

Tree thinning and mochi-pounding event at Ricoh Chiba Fureai-no-Mori forest

On December 18, 2010, the Chiba Fureai-no-Mori Conservation Group conducted its 65th activity in Ricoh Chiba Fureai-no-Mori forest in Wakaba-ku, Chiba City, with 32 participants, including employees of Ricoh Japan, Ricoh Technosystems and other Ricoh group companies and their families. Despite the cold wave prevailing across Japan, the volunteers thinned out unwanted trees and comfortably enjoyed the annual mochi-pounding because sunshine abundantly penetrated the forest. With the help of the participants' children, pounded mochi was seasoned and served with *tonjiru* (miso soup with pork). With a sense of accomplishment and gastronomical satisfaction, the volunteer group wrapped up its 2010 activities.

The group started its activities in 2004, when it entered into an agreement—based on Chiba Prefecture's ordinance on conserving rural landscape—with the forest owner, who was looking for help with the maintenance of his cedar forest, which was plagued with rampant bamboo. Since then, the volunteer group has been working mainly in the following three areas: (1) weeding to promote the growth of forest trees, (2) creating space to build recreation facilities, and (3) using the timber from thinned out trees to build the recreation facilities.

Employees and their families who joined the tree thinning event

Forest conservation activities at Tanzawa-Harudake-no-Mori

On August 28, 2010, the Yadoriki Shinboku Group carried out forest conservation activity in Tanzawa-Harudake-no-Mori. This environmental volunteer group of Ricoh employees started its activities in 2001, when Kanagawa Prefecture launched its Forest Development Partnership Program. While initial activity revolved around the conservation of Yadoriki spring, the group has expanded its activities since 2006 to include the management and monitoring of a mixed forest (including zelkova trees) in Tanzawa-Oyama Kanagawa Prefectural Natural Park, as well as the development and management of many bamboo forests in the prefecture. For their latest, or 53rd, activity event, the volunteers changed their activity plan from controlled burning to revetment work at Harudake Stream, due to the health concerns related to the extremely hot weather that day, which was the beginning of fall according to the calendar. The stream, 1.5 m wide and 30 cm deep (near the entrance of Harudake-no-Mori), often causes flash floods and washes away mud and trees in the surrounding area. As recent flash floods had created two stream lines (incidentally, a bridge they built in 2009 managed to stay intact), the volunteers dammed up one of the lines and strengthened the stream bank with rocks. As a result of the hard work, a robust, easy-to-walk steam bank was completed, allowing visitors to easily walk into the stream and enjoy playing in the water.

After the volunteer work it is much easier to walk into the stream and enjoy playing in the water.

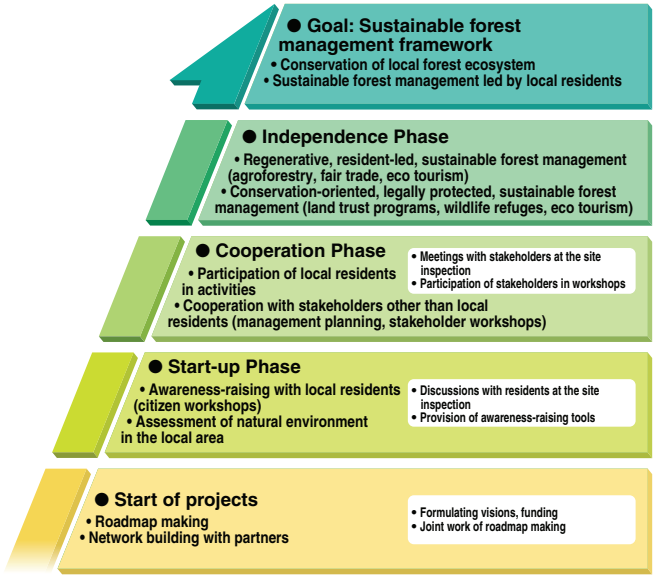
Forest Ecosystem Conservation Projects

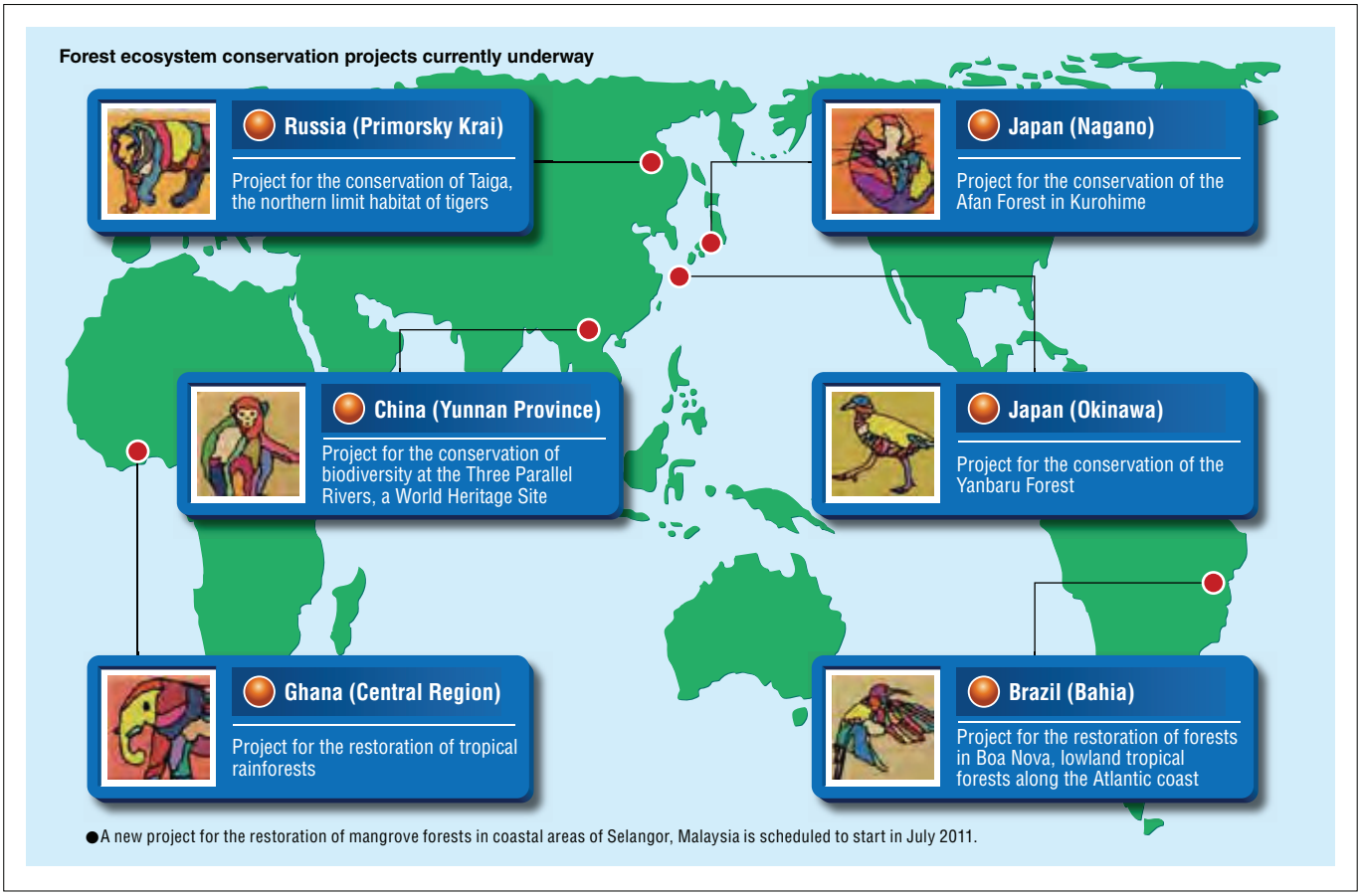
<Ricoh Co., Ltd. (Global)>

Various flora and fauna 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. The reserve is funded annually based on the approval of Ricoh's general shareholders' meeting and the reserve 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





* The progress of each project can be monitored at: http://www.ricoh.com/environment/biodiversity/forest_ecosystem/01_01.html

Supporting forest recovery projects

<Ricoh Co., Ltd. (Japan)>

Ricoh has been supporting the Afan Forest Project since November 2001. The project, organized by the C.W. Nicol Afan Woodland Trust since its founding in 2002, aims to create forests in which a wide variety of species and humans can maintain harmonious relationships. The trust accordingly conducts ecological surveys and research and conservation activities in a roughly 100,000 square-meter forest in Kurohime, Nagano prefecture. Once degraded, forest ecosystems cannot easily recover—sometimes it requires hundreds of years if left to natural capacities only. It is therefore, important for us to help forests recover from their wounds. Envisioning the woodland 100 years from now, the project has been working to restore the ecosystem in the forest by selecting priority trees and facilitating the natural regeneration process. As a result, the variety and the population of forest inhabitants, including Glirulus japonicas (Japanese Dormouse) and other endangered species, have been increasing at a steady pace.


The Afan Forest at the initial phase of the project


The forest is restored as a result of our project.

Boa Nova Green Corridor Project in Brazil

<Ricoh Co., Ltd. (Global)>

Since August 2007, Ricoh has been a supporter of a project to restore lowland tropical forests along the Atlantic coast in the region of Boa Nova in Bahia state, Brazil. The project, led by local and Japanese non-profit organizations, SAVE Brazil and BirdLife Asia, respectively, is conducted as a part of the Green Corridor Project in the Atlantic coast areas. Bao Nova, a region of rich biodiversity, is home to 220 species of birds and other animals. This great wildlife habitat—i.e., the forests in the region—has been increasingly destroyed over the years mainly due to illegal logging, overgrazing, and conversion to plantations. To restore lost and damaged forest, the project members have been working closely with 80 land owners, local civil society organizations, and other stakeholders. Based on the forest resource management plan developed, the project aims to create a sustainable community and achieve a harmonious relationship between the forests and local residents. The Brazilian government has also provided strong support for this project. In addition to the provision of a grant totaling 150,000 dollars for the three years from 2009, the government created a national park in Boa Nova in June 2010. The active engagement of the national government has added momentum to the forest restoration project.


Elementary students learning about the environment during their field trip to the forest

Targeted Period/Scope of This Report

Targeted Period

This report describes the sustainable environmental management activities of the Ricoh Group in fiscal 2010 (April 1, 2010 to March 31, 2011).

Environmental impact and environmental accounting data: fiscal 2010 data
Descriptions in articles and chronological tables: fiscal 2010 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

There were no material changes in subsidiaries (i.e., there were no changes in subsidiaries which require a change in the scope of financial consolidation) during the report period.

● Past and Future Reports

The Ricoh Group has published annual environmental reports every year since 1997, which covered fiscal 1996. The 2011 Report in English was issued in October 2011 due to the delay in data collection affected by the Great East Japan Earthquake. The 2012 Report in English will be issued in September 2012.

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
- **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]
- **Major non-manufacturing subsidiaries:**
  Ricoh Logistics System Co., Ltd.; Ricoh Japan Corporation; 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 subsidiaries:**
  Ricoh Asia Pacific Pte. Ltd. (Singapore) and other sales subsidiaries in the region

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

Founding Principles

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

Mission, Vision, and Values

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.

In 2011, a clear statement on the Ricoh Group's responsibility was added to our management philosophy to declare our commitment to helping society develop and prosper in a sustainable manner in the future.

■ Mission Statement

At the Ricoh Group, we are committed to providing excellence to improve the quality of living.

■ Vision Statement

To be the most trusted brand with irresistible appeal in the global market.

■ Values Statement

To be one global company, we must care about people, our profession, our society, and our planet. We must dedicate our winning spirit, innovation and teamwork to sharpen our customer centric focus, and we also must commit to the highest standards of ethics and integrity.

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 so that stakeholders do not 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 (December)

	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	• Published the first issue 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 • 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	• 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 • 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 • 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 • 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 • Ricoh participated in the Japan Climate Leaders' Partnership (Japan-CLP) • Ricoh released its first digital full-color recycled copier, the imagio MP C3500RC/2500RC series • Released the imagio MP 6001GP, the world's first multifunctional digital copier using biomass toner

Data

Index by Term

Our earth, Our tomorrow

Please send all comments and inquires regarding this report to:

● The Americas

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