



KONICA MINOLTA

Giving Shape to Ideas



**KONICA MINOLTA**  
Environmental Report  
**2013**

Management Philosophy  
The Creation of New Value

Communication Message  
Giving Shape to Ideas

Contents

**Overview of the Konica Minolta Group** .....2

**Environmental Management at Konica Minolta**

Eco Vision 2050 .....4

Environmental Management .....5

**Environmental Plan: Objectives and Efforts**

Medium-Term Environmental Plan 2015 .....8

Fiscal 2012 Targets and Results .....9

Fiscal 2013 Targets .....10

Three Green Activities .....11

Green Products Certification System .....12

Green Factory Certification System .....16

Green Marketing Activities .....18

**Preventing Global Warming**

Basic Concept/Targets and Results .....19

CO<sub>2</sub> Emissions from Product Usage .....20

CO<sub>2</sub> Emissions from Manufacturing .....21

CO<sub>2</sub> Emissions from Distribution .....22

CO<sub>2</sub> Emissions from Sales and Service .....23

**Supporting a Recycling-Oriented Society**

Basic Concept/Targets and Results .....24

Reduce Petroleum-Based Resource Usage .....25

Reduce Packaging Materials Usage .....26

Reduce Waste Discharged Externally from Manufacturing .....27

Product Recycling .....28

**Reducing the Risk of Chemical Substances**

Basic Concept/Targets and Results .....29

Chemical Substance Management .....30

Reduction of Atmospheric Emissions of VOCs .....31

Countermeasures against Contamination of Soil and Ground Water .....32

**Restoring and Preserving Biodiversity**

Basic Concept/Targets and Results .....33

Specific Initiatives .....34

**Environmental Communication**

Basic Concept/Environmental Information Disclosure .....35

Communication with Society .....37

**Environmental Data** .....39

**External Assurance** .....54

**Editorial Policy**

Konica Minolta reports on its major environmental efforts in Konica Minolta CSR Report 2013, and posts information in more detail on the website. The Konica Minolta Environmental Report 2013 is available in PDF format, with content focusing on the Group's basic concepts and on activities in fiscal 2012.

**Report Boundary**

This report covers Konica Minolta, Inc., and its consolidated subsidiaries. When data is given on a specific subset of companies, the boundary is separately indicated.

\* In this report, "Konica Minolta" refers to the Konica Minolta Group. "Konica Minolta, Inc." refers to Konica Minolta, Inc., alone. On April 1, 2013, Konica Minolta Holdings, Inc., the publisher of last year's report, restructured its management system, merging with seven companies, including business companies, and changed its trade name to Konica Minolta, Inc. In this report, the current company name is used even when discussing information dated before the reorganization.

**Reporting Period**

In principle, the report covers activities from April 1, 2012 to March 31, 2013. Some sections may include information on earlier initiatives or more recent activities.

In this report, "fiscal 2012" refers to the fiscal year starting April 1, 2012 and ending March 31, 2013.

**Publication Date**

November 2013 (next report: scheduled for November 2014; previous report: October 2012)

**Relevant Guidelines**

In making this report, Konica Minolta referenced the Global Reporting Initiative (GRI) Sustainability Reporting Guidelines Version 3.0 and the Environmental Reporting Guidelines 2012 issued by the Ministry of the Environment (Japan).

**Disclaimer**

In addition to facts about past or present circumstances, this report contains descriptions of the Group's current plans and projections for the future. These descriptions are based on information that is currently available and have been deemed reasonable based on the Group's current status. The Group's actual performance could differ from its predictions due to future changes in the business environment.

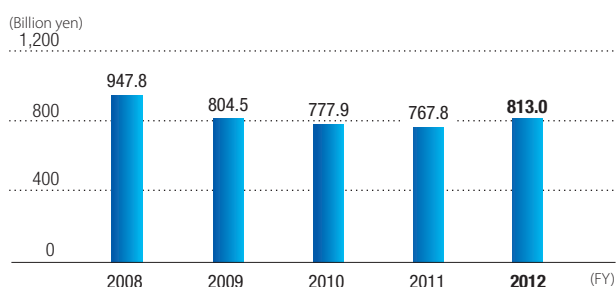
# Overview of the Konica Minolta Group

## Corporate Data

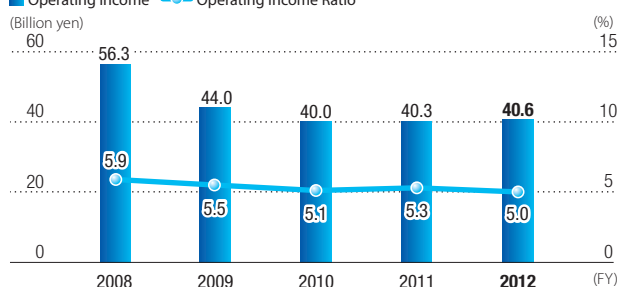
Company name	Konica Minolta, Inc.	Paid-in capital	37,519 million yen (as of March 31, 2013)
Head office	2-7-2 Marunouchi, Chiyoda-ku, Tokyo, Japan	Fiscal year-end	March 31
President and CEO	Masatoshi Matsuzaki	Number of employees	(Non-consolidated): 6,624 (as of March 31, 2013) (Consolidated): 41,844 (as of March 31, 2013)
Established	December 22, 1936		

## Financial Data

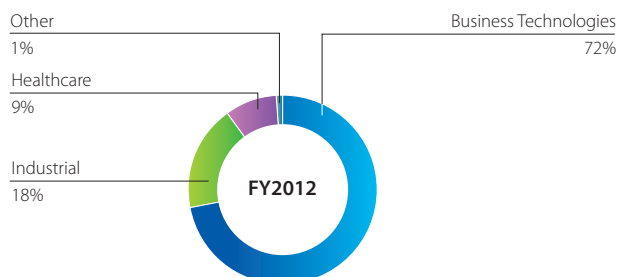
### Consolidated Net Sales



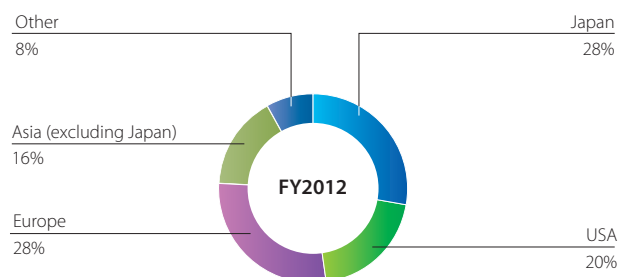
### Consolidated Operating Income/Operating Income Ratio



### Breakdown of Sales by Business Segment



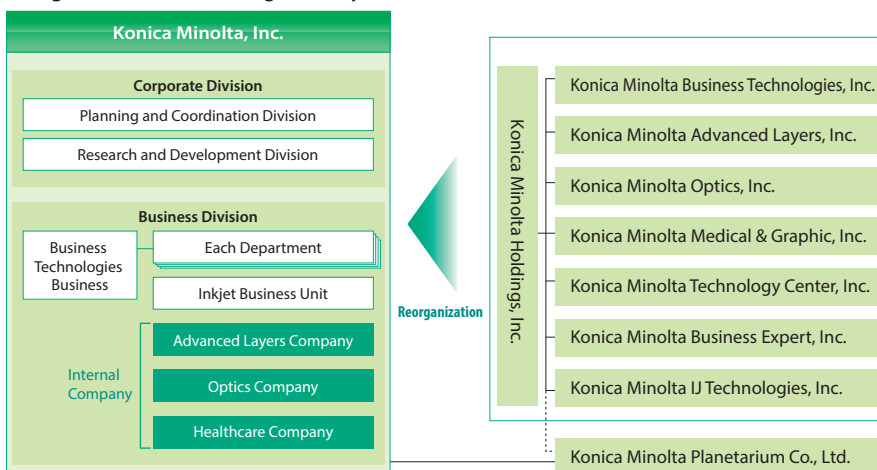
### Breakdown of Sales by Region



## Management System Restructured

Improving upon its holding company system, in April 2013 Konica Minolta Holdings, Inc. restructured its management, merging with seven companies, including business companies. It moved from a pure holding company structure to become a company that carries out business directly and changed its trade name to Konica Minolta, Inc. With this change, the Industrial Business and Healthcare Business were also made into internal companies.

### Reorganization of the Management System





Overview of the Konica Minolta Group

Creating the new value that society is demanding in the broad scope of the Group's businesses.

Business Segment	Principal Products	Business Fields
Business Technologies Business	<b>Business Solution</b> <ul style="list-style-type: none"> <li>● MFPs (Multi-functional peripherals)</li> <li>● Laser printers</li> <li>● Filing devices</li> <li>● Facsimile machines</li> <li>● Software and peripheral devices</li> </ul> 	<ul style="list-style-type: none"> <li>● Corporate offices</li> <li>● SOHO</li> </ul>
	<b>Production Print</b> <ul style="list-style-type: none"> <li>● Digital printing systems</li> <li>● Digital color-proofing systems</li> <li>● CTP (Computer to Plate)</li> <li>● Remote color management systems</li> <li>● RGB work-flow products</li> <li>● Prepress production systems</li> </ul> 	<ul style="list-style-type: none"> <li>● Printing companies</li> <li>● Corporate printing departments</li> </ul>
	<b>Industrial Inkjet</b> <ul style="list-style-type: none"> <li>● Inkjet printheads</li> <li>● Inkjet textile printers</li> <li>● Inkjet print units</li> <li>● Inkjet inks</li> </ul> 	<ul style="list-style-type: none"> <li>● Digital printing</li> <li>● Textile dyeing</li> <li>● Printed electronics</li> </ul>
Industrial Business	<b>Performance Materials</b> <ul style="list-style-type: none"> <li>● TAC film for LCD polarizers</li> <li>● VA-TAC film for increasing viewing angle</li> <li>● High-precision photo plates</li> <li>● Barrier film</li> <li>● Functional film for windows</li> <li>● Organic light emitting diode</li> </ul> 	<ul style="list-style-type: none"> <li>● Electronics industries</li> <li>● Factories</li> <li>● Research institutes</li> <li>● Hospitals</li> </ul>
	<b>Optical Devices</b> <ul style="list-style-type: none"> <li>● Pickup lenses for optical disks</li> <li>● Prisms for pickups</li> <li>● Glass substrates for HDDs</li> <li>● Micro-camera modules</li> <li>● Lens units</li> </ul> 	
	<b>Sensing</b> <ul style="list-style-type: none"> <li>● Spectrophotometers, colorimeters</li> <li>● Luminance meters, illuminance meters, and luminance colorimeters</li> <li>● Spectroradiometers</li> <li>● Non-contact 3D digitizers</li> <li>● Pulse oximeters</li> <li>● Solar cell measurement and calibration equipment</li> <li>● Spectrometers</li> </ul> 	
Healthcare Business	<ul style="list-style-type: none"> <li>● Digital X-ray diagnostic imaging systems (CR, DR)</li> <li>● Digital mammography</li> <li>● Diagnostic ultrasound systems</li> <li>● Medical imaging filing systems</li> <li>● All-in-one medical imaging information workstations</li> <li>● Medical management support and service</li> <li>● Diagnosis medicine</li> </ul> 	<ul style="list-style-type: none"> <li>● General hospitals</li> <li>● Clinics</li> </ul>
Planetarium Business	<ul style="list-style-type: none"> <li>● Optical planetariums</li> <li>● Digital full-dome systems</li> <li>● Dome screen</li> <li>● Digital full-dome show</li> <li>● Management and operation for planetarium facilities</li> </ul> 	<ul style="list-style-type: none"> <li>● Planetariums</li> <li>● Restaurants</li> <li>● Amusement facilities</li> <li>● Art museums</li> </ul>



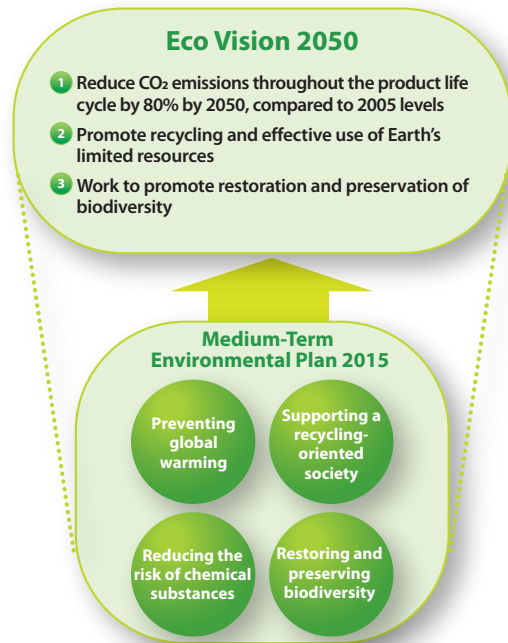
# Eco Vision 2050

## Formulation of Eco Vision 2050 for a sustainable earth and society

In January 2009 Konica Minolta formulated Eco Vision 2050 as its long-term environmental vision. This vision guides Konica Minolta in the right direction to achieve its future objectives and fulfill its responsibility as a global corporation by contributing to a sustainable earth and society.

Konica Minolta created the Medium-Term Environmental Plan 2015 as a milestone marker toward the goals outlined in its Eco Vision 2050.

Relevant Information ● Medium-Term Environmental Plan 2015 ▶ P. 8

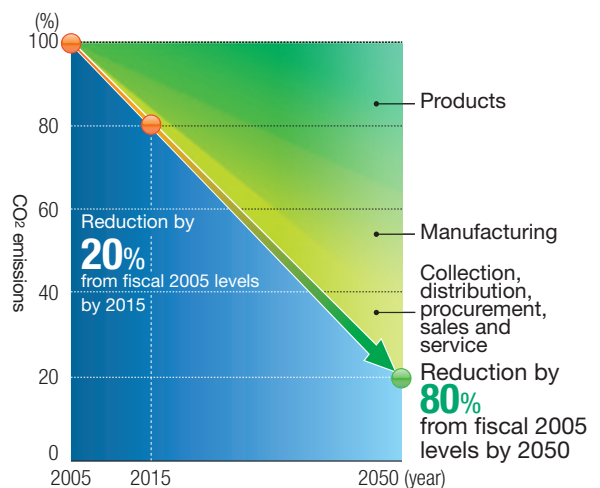


## Konica Minolta's Long-Term Environmental Targets

According to the Intergovernmental Panel on Climate Change (IPCC), greenhouse gas emissions in 2004 were 49 billion t-CO<sub>2</sub>, which, divided by a world population of 6.4 billion people, amounts to 7.66 t-CO<sub>2</sub> per person per year. The amount of greenhouse gases that the earth can absorb naturally is thought to be 11.4 billion t-CO<sub>2</sub>. Divided by the projected population of 9.2 billion people in 2050, this means the earth could naturally absorb 1.24 t-CO<sub>2</sub> per person in 2050. That is 80% less than current annual per capita emissions.

These estimates were used to determine the Eco Vision 2050 target of an 80% reduction in product lifecycle CO<sub>2</sub> emissions by 2050, compared to a fiscal 2005 baseline.

Reductions in CO<sub>2</sub> Emissions





# Environmental Management

## Environmental Policy

### Implementing an integrated environmental management system that ensures that corporate activities are good for both people and the environment

The Konica Minolta Group conducts all of its corporate activities in harmony with people and the environment by integrating environmental, economic and social perspectives into the Group's corporate strategy, as the Environmental Policy of the Konica Minolta Group. The Group's basic approach is to work steadily to solve environmental issues, based on securing reliable data and quantitative measurement

of performance and impacts.

Based on this policy and approach, the Group works to reduce the environmental impact of its products and services over their entire life cycle. The Group places particular emphasis on preventing global warming, supporting a recycling-oriented society, reducing the risk of chemical substances, and restoring and preserving biodiversity.

### Konica Minolta Environmental Policy

The Konica Minolta Group aims to promote sustainable development and profitable growth. We integrate environmental, economic and social perspectives into our business strategies so that our business activities are implemented in harmony with human lives and with the environment in all aspects.

Our concept is to make steady progress toward resolution of environmental challenges based on quantitative measurement and analysis of reliable data in regard to environmental performance and impact. This basic concept is demonstrated in the following affirmation:

#### "Management Based On Facts"

**1. Working toward a sustainable society as a global citizen**

In response to the call for a sustainable society, we will conduct business activities from the perspective of on-going enhancement of performance in environmental preservation, economic growth and social responsibilities (ethics). Every one of us will enhance its knowledge and awareness on the environment, economies and societies on a global scale and act with responsibility in pursuit of a sustainable society.

**2. Compliance with laws and other requirements**

We will comply with legal requirements in respective countries and regions, as well as our Group standards. In addition, we will respect, in an equitable manner, expectations of our stakeholders and consensus in the international community.

**3. Consideration for the environment throughout the entire life cycle of products and services**

We are committed to reducing the environmental load in all stages throughout the entire life cycle of products and services, recognizing that responsibility for a product rests with its manufacture.

**4. Initiatives to counter global warming**

We will continuously reduce greenhouse gas emissions that derive from our business activities from the perspective of the life cycle of our products and services throughout the entire Group, recognizing that global warming is one of the most important world issues.

**5. Initiatives toward a recycling-oriented society**

We are always reviewing what we can do as a corporate citizen in order to create recycling-oriented society while striving for minimizing consumption of natural resources and promoting "Zero Waste Emission" activities. In addition, we will accelerate initiatives for the recovery and recycling of end-of-life products and packaging materials.

**6. Prevention of chemical pollution and minimization of potential risks to the environment**

We will take every countermeasure for preventing chemical pollutions, recognizing that chemical substances can impose significant impact on human health and safety and the environment. At the same time, we will continuously suppress use of chemicals and reduce discharge volume in order to minimize environmental risks.

**7. Promotion of information disclosure**

We will execute accountability to all the stakeholders by actively disclosing environmental information and ensuring risk communication. We will as well make every effort to accomplish our commitment to the societies. Our Environmental Policy is to be disclosed to the public.

**8. Establishment of environmental objectives and targets**

We establish and administer environmental objectives, targets, and management programs to translate this Environmental Policy into reality. We will continuously review such objectives, targets and programs for further improvement of our environmental performance.

April 1, 2013  
Konica Minolta Holdings, Inc.  
President and CEO

Masatoshi Matsuzaki



## Environmental Management

### Management System

#### Operating environmental management system based on ISO 14001

To ensure efficient implementation of environmental management throughout the Group as a whole, Konica Minolta operates its management system based on ISO 14001, and adopts as its basic policy that all Group production sites around the world obtain ISO 14001 certification.

To address a range of environmental issues, it is necessary to implement measures that take into account each stage in the product life cycle. To accomplish this, Konica Minolta believes that it must operate not only its manufacturing sites, but also its product development, sales and administration divisions, under an integrated management system with efficient cooperation between divisions. Based

on this concept, Group companies in Japan have acquired multi-site ISO 14001 certification so that the entire Group can be managed under a single ISO certification. In addition, all the main production sites outside Japan has acquired ISO14001 certification based on the policy that Group production sites having large environmental impact should acquire the certification.

In conducting activities, the Group sets numerical targets and periodically evaluates attainment. The evaluation results are reported back to each site to enable continuous improvement.

### Organization

#### All aspects of environmental management overseen by the Executive Officer in charge of environment

Konica Minolta, Inc. has appointed an executive officer in charge of environment with the authority and responsibility for Group-wide environmental issues. Furthermore, Konica Minolta has established an Environmental Managers' Committee headed by the General Manager of the Corporate Social Responsibility Operations as an organization for

oversight of the environmental target implementation plan for the whole Group. The committee meets on a quarterly basis in principle, and in addition to promoting the environmental target implementation plan, it monitors progress and manages information concerning environmental issues across the Group.

### Environmental Audits

At Konica Minolta, the Group Internal Environmental Auditing Committee, which is chaired by the head of the Corporate Audit Division, directs the internal environmental auditing for the entire Group.

In addition, internal environmental audits are carried out at least once a year to confirm proper functioning of the management system and to assess compliance. In this way, the Group ensures that all its organizations are fully compliant.



## Environmental Management

### Compliance with Environmental Regulations

#### Strengthening the global compliance system

As environmental problems such as global warming and the depletion of energy resources increase in scope to encompass entire regions and indeed the entire world, government policies and regulations at the regional and national levels around the world are being reconsidered and strengthened in order to ensure sustainable growth.

As a global business enterprise, Konica Minolta is strengthening its global compliance system to ensure that all of its production sites and sales offices comply with all legal regulations. In fiscal 2012, the Group reinforced communication with all sites and sales companies, mainly through personnel in charge of the environment in Europe,

North America, and China. It also promoted the sharing of regulatory trends, the improvement of issues related to compliance diagnoses, and the adherence to regulations (e.g., chemical substances regulations such as the REACH regulations<sup>\*1</sup>, the revised RoHS Directive<sup>\*2</sup>, and recovery and recycling regulations).

Continuing from fiscal 2011, in fiscal 2012 all production sites and sales offices implemented compliance diagnoses. None were found to have made a significant violation of any environmental regulation.

\*1 REACH regulations: Regulations enacted by the EU in June 2007 concerning the registration, evaluation, authorization and restriction of chemicals, to consolidate existing regulations concerning chemical substances.

\*2 RoHS Directive: Regulations enacted by the EU in July 2006 prohibiting the use of specified hazardous substances in electrical and electronic equipment.

#### Strengthening the Compliance System in China

As part of its efforts to strengthen its global compliance management system, Konica Minolta is working hard to assure adherence to environmental as well as health and safety regulations in China's quickly evolving regulatory environment. The Group established an environmental umbrella organization in Konica Minolta Business Solutions (China) Co., Ltd., a sales company in China, in fiscal 2012. Led by this organization, the Group has strengthened its adherence to environmental

laws and regulations related to production sites and sales in China. Following up on past compliance diagnoses, personnel made regular visits to production sites to review regulations and confirm the status of compliance on-site. With respect to sales, the Group is reinforcing the monitoring of trends in product-related environmental laws and regulations, and promoting compliance with certification systems and pursuing the acquisition of environmental labels.





# Medium-Term Environmental Plan 2015

Konica Minolta has established its Medium-Term Environmental Plan 2015 as a milestone marker toward the goals outlined in Eco Vision 2050. The plan comprises specific approaches and targets for four objectives: preventing global warming, supporting a recycling-oriented society, reducing the risk of chemical substances, and restoring and

preserving biodiversity. The Group has designated these objectives as goals for all of its businesses to pursue, and is incorporating them into its business plans while formulating specific measures for their achievement, with the overall aim to successfully carry out the Medium-Term Environmental Plan 2015.

## Medium-Term Environmental Plan 2015

Objectives	Major Fiscal 2015 Targets (Base Year: Fiscal 2005*1)		Initiatives
Preventing global warming	CO <sub>2</sub> emissions throughout product life cycle	-20%	
	CO <sub>2</sub> emissions from product usage	-60%	<ul style="list-style-type: none"> <li>Develop new energy-saving technologies and incorporate them in products</li> </ul>
	CO <sub>2</sub> emissions from manufacturing (per unit of sales)	-10%	<ul style="list-style-type: none"> <li>Improve energy efficiency by developing better production technologies</li> <li>Achieve Green Factory Certification standards on a business unit basis</li> </ul>
	CO <sub>2</sub> emissions from distribution (per unit of sales)	-30%	<ul style="list-style-type: none"> <li>Improve distribution efficiency through SCM*2</li> </ul>
	CO <sub>2</sub> emissions from sales and service (per unit of sales)	-50%	<ul style="list-style-type: none"> <li>Increase efficiency in sales and services</li> </ul>
Supporting a recycling-oriented society	Petroleum-based resource usage (per unit of sales)	-20%	<ul style="list-style-type: none"> <li>Develop new technologies of resource conservation and incorporate them in products</li> <li>Reduce the volume of waste from manufacturing activities by developing new production technologies</li> <li>Reduce fuel consumption via more efficient sales and service activities</li> </ul>
	Packaging materials usage (per unit of sales)	-25%	<ul style="list-style-type: none"> <li>Decrease the volume of product packaging</li> </ul>
	Waste discharged externally*3 from manufacturing (per unit of sales)	-50%	<ul style="list-style-type: none"> <li>Reduced production loss through better production technologies and production innovations (zero waste activities)</li> <li>Achieve Green Factory Certification standards on a business unit basis</li> </ul>
	Product recycling: Build up product recycling systems in each region and aim for a recycling rate of 90% or more		<ul style="list-style-type: none"> <li>Optimize resource recovery systems in each region</li> </ul>
Reducing the risk of chemical substances	Chemical substance management: Maintain strict management of chemical substances, including the entire supply chain*4		<ul style="list-style-type: none"> <li>Establish a new chemical substance management system</li> </ul>
	Atmospheric emissions of volatile organic compounds (VOCs) (environmental impact index*5)	-75%	<ul style="list-style-type: none"> <li>Reduce VOC risk through better production technologies and production innovations</li> <li>Achieve reduction plan on a business unit basis</li> </ul>
Restoring and preserving biodiversity	Help restore and preserve biodiversity		<ul style="list-style-type: none"> <li>Create programs for biodiversity preservation and restoration</li> </ul>

\*1 Many international frameworks use 1990 as a base year for greenhouse gas reduction targets. Konica Minolta, however, decided to use fiscal 2005 as its base year, as the result of a Group merger in 2003 and the considerable changes that have been made to its business portfolio since then.

\*2 **Supply Chain Management (SCM)**: A method for effectively managing the flow of goods from procurement to production, and from sales to final product delivery to the customer.

\*3 **Waste discharged externally**: Volume discharged outside Konica Minolta sites, obtained by subtracting the internally recycled and reduced volumes from the total waste generated in production processes.

\*4 **Supply chain**: In this case, the process by which raw materials from upstream companies pass through component manufacturers and are delivered to Konica Minolta.

\*5 **Environmental impact index**: An index unique to Konica Minolta designed to measure impact on the environment, obtained by multiplying VOC emission volume by a hazard factor (impact on human health and environmental impact) and a location factor.

Relevant Information ● Green Factory Certification System ▶ P. 16

## Changed Unit for Indexes

Until now, Konica Minolta set its targets based on unit of sales as an index for assessing environmental impact reduction outcomes. However, such an index no longer reflects reduction outcomes appropriately due to exchange rate fluctuations and falling prices. Accordingly, in fiscal 2013 a

switch has been made to unit of production, or another index that best suits each target, which is not influenced by these factors, to enable appropriate assessment of environmental impact reduction outcomes.



# Fiscal 2012 Targets and Results

Targets have been set for each fiscal year under the Medium-Term Environmental Plan 2015.

## Fiscal 2012 Targets and Results (Base Year: Fiscal 2005)

Self-assessment ★★★: Achievement more than 100% ★★: Achievement more than 80% and less than 100% ★: Achievement less than 80%

Objectives	Fiscal 2012 Targets		Fiscal 2012 Results and Key Measures		Achievement
Preventing global warming	CO <sub>2</sub> emissions throughout product life cycle	-48.1%	-50.0%		★★★
	CO <sub>2</sub> emissions from product usage	-67.7%	-67.7%	Marketed products with high energy-saving performance	★★★
	CO <sub>2</sub> emissions from manufacturing (per unit of sales)	+32.5%	+27.7%	Improved energy efficiency in production	★★★
	CO <sub>2</sub> emissions from distribution (per unit of sales)	-4.4%	-13.7%	Reduced air freight	★★★
	CO <sub>2</sub> emissions from sales and service (per unit of sales)	-15.2%	-11.4%	Increased efficiency in sales and services Introduced eco-cars and eco-driving	★★
Supporting a recycling-oriented society	Petroleum-based resource usage (per unit of sales)	+15.7%	+10.3%	Reduced resources used in products Reduced waste in production Introduced eco-cars and eco-driving	★★★
	Packaging materials usage (per unit of sales)	+9.7%	+6.1%	Reduced packaging through improved design Made packing boxes returnable between production facilities	★★★
	Waste discharged externally from manufacturing (per unit of sales)	+8.1%	+3.3%	Improved production efficiency and promoted internal recycling	★★★
	Product recycling •Market re-manufactured MFPs worldwide •Investigate packaging and parts reuse			Creation of next-period scenarios for reconditioned copiers Investigation of additional packaging reduction measures	★★★
Reducing the risk of chemical substances	Chemical substance management •Plan alternatives to materials targeted for reduction •Respond to RoHS* self-declaration of conformance			Initiative plan for substances targeted for reduction Response to the RoHS self-declaration of conformance	★★★
	Atmospheric emissions of volatile organic compounds (VOCs) (environmental impact index)	-70.5%	-75.3%	Implementation of the VOC reduction plan	★★★
Restoring and preserving biodiversity	•Pursue compliance with the Guidelines for Biodiversity Preservation •Deploy the ecosystem impact assessment •Establish the procurement standards for paper and prepare global deployment			Undertook activities according to the guidelines for biodiversity preservation Deployed the ecosystem impact assessment outside Japan Prepared global deployment of the procurement standards for paper	★★★

\* RoHS Directive: Regulations enacted by the EU in July 2006 prohibiting the use of specified hazardous substances in electrical and electronic equipment.



# Fiscal 2013 Targets

## Fiscal 2013 Targets (Base Year : Fiscal 2005)

Objectives	Fiscal 2013 Targets	
Preventing global warming	CO <sub>2</sub> emissions throughout product life cycle	-51%
	CO <sub>2</sub> emissions from product usage	-69%
	CO <sub>2</sub> emissions from manufacturing (per unit of production*)	-28%
	CO <sub>2</sub> emissions from distribution (per unit of distribution*)	-32%
	CO <sub>2</sub> emissions from sales and service (per unit of sales*)	-47%
Supporting a recycling-oriented society	Petroleum-based resource usage (per unit*)	-27%
	Packaging materials usage (per unit of sales*)	-28%
	Waste discharged externally from manufacturing (per unit of production*)	-42%
	Product recycling <ul style="list-style-type: none"> <li>•Define next-step scenario for re-manufactured MFPs</li> <li>•Implement packaging and parts reduction measures</li> </ul>	
Reducing the risk of chemical substances	Chemical substance management <ul style="list-style-type: none"> <li>•Develop and put into practice a system for managing reduction of hazardous substances reduction</li> <li>•Develop a system for complying with the revised RoHS Directive</li> </ul>	
	Atmospheric emissions of volatile organic compounds (VOCs) (environmental impact index) (per unit of production*)	-92%
Restoring and preserving biodiversity	Initiatives in line with the guidelines for biodiversity preservation, a standard for the Green Factory Certification	

\* Until now, Konica Minolta set its targets based on unit of sales as an index for assessing environmental impact reduction outcomes. However, such an index no longer reflects reduction outcomes appropriately due to exchange rate fluctuations and falling prices. Accordingly, for fiscal 2013 a switch has been made to unit of production, or another index that best suits each target, which is not influenced by these factors, to enable appropriate assessment of environmental impact reduction outcomes.



# Three Green Activities

## Three Green Activities

Environmental innovations via three green activities that support the Medium-Term Environmental Plan 2015

Konica Minolta is implementing Three Green Activities as part of its effort to realize the Medium-Term Environmental Plan 2015. First, the Green Products Certification System promotes the development of environmentally responsible products. Second, the Green Factory Certification System allows for a comprehensive evaluation of its production sites'

environmental activities. Third, Green Marketing activities ensure sales companies around the world make and execute environmental activity plans that are closely tied to their local areas. The Konica Minolta Group is working to bring about environmental innovations through the Three Green Activities.



## Konica Minolta Environmental Mark



The Konica Minolta Environmental Mark expresses the Group's commitment to promoting initiatives that reduce environmental impact in every phase of the business. The mark is used as a certification mark for products certified under the Green Products Certification System and for factories certified under the Green Factory Certification System. Additionally, it will be used as a symbol of Green Marketing activities.

\* The three arches symbolize Green Products, Green Factories and Green Marketing—the core of Konica Minolta's environmental activities. The arches rest on a green leaf—which represents the environment—forming a round Earth to convey this key message: "Konica Minolta is striving to fulfill its role on the planet as a bridge to a more sustainable society."



## Three Green Activities Green Products Certification System

### Clearly articulating assessment standards for product environmental performance and encouraging the development of environmentally friendly products

Konica Minolta has introduced a Green Products Certification System, its own unique system for evaluating and certifying products with superior environmental performance. The system aims to create environmental value suited to different businesses and product characteristics with the purpose of helping customers and society at large to reduce environmental impact.

Under this system, standards are set for each of the different businesses and product characteristics, and products that meet these standards are certified at one of three levels. The targets are basically set as early as the product planning stage. Not only must the product meet standards for environmental performance, it must also fulfill requirements such as being produced at a Green Factory certified plant, compliance with environment-related regulations, and management in accordance with the Group's CSR procurement plan.

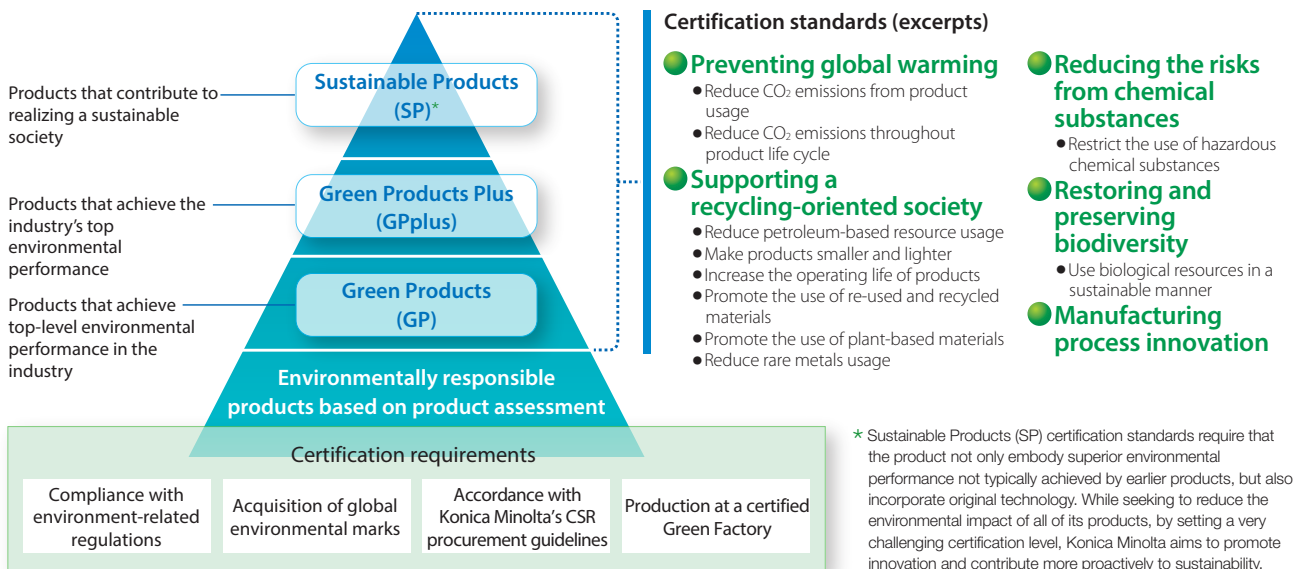
Since the system went into full operation in July 2011, 47 products in fiscal 2011 and 28 in fiscal 2012 have been certified. Starting in fiscal 2013, the Group is adding new standards for creating environmental value for the customer in an effort to help customers and the broader society to reduce environmental impact even further.

The environmental performance of certified products will be made public in product catalogs and websites.



green products

### Green Products Certification System



### Sales Ratio for Green Products

	Fiscal 2012 Target	Fiscal 2012 Achievement	Fiscal 2015 Target
Sustainable Products (SP)	—	—	1 product
Green Products Plus (GPplus)	15%	27%	30%
Total of Green Products	20%	31%	50%



Three Green Activities Green Products Certification System | Certified Products in Fiscal 2012

### Business Solutions

#### Color MFPs

Green Products Plus

#### bizhub C554/C454/C364/C284/C224

- More than 30% reduction of power consumption (TEC) (compared to our previous model).

Applicable product	Reduction in energy consumption	Comparison product
C554	▼About 34%	C552DS
C454	▼About 37%	C452
C364	▼About 39%	C360
C284	▼About 42%	C280
C224	▼About 44%	C220



Preventing global warming

Supporting a recycling-oriented society

Improving environmental comfort during product use

- Uses originally developed, fire-resistant recycled PC/PET (as of the June 2012 launch). [The first in the industry](#)

- Industry-top-class quietness when operated (as of the June 2012 launch).

Green Products Plus

#### bizhub C554e/C454e/C364e/C284e/C224e

- More than 8% reduction of power consumption (TEC) (compared to our previous model).

Applicable product	Reduction in energy consumption	Comparison product
C554e	▼About 8%	C554
C454e	▼About 11%	C454
C364e	▼About 13%	C364
C284e	▼About 17%	C284
C224e	▼About 18%	C224



Preventing global warming

Supporting a recycling-oriented society

Improving environmental comfort during product use

- Uses originally developed, fire-resistant recycled PC/PET (as of the May 2013 launch). [The first in the industry](#)

- Industry-top-class quietness when operated (as of the May 2013 launch).

#### Monochrome MFPs

Green Products Plus

#### bizhub PRO 951

- First in class using fire-resistant, recycled PET (as of the May 2012 launch). [The first in the industry](#)
- Employs plant-based biomass resin for main unit and toner.



Supporting a recycling-oriented society

### Production Print and Graphics

#### Monochrome printing system

Green Products Plus

#### bizhub PRESS 1250/1250P/1052

- Uses first-in-class flame-resistant recycled PET (as of the August 2012 launch). [The first in the industry](#)
- Uses plant-based bioplastic in the body and toner.



Supporting a recycling-oriented society



Three Green Activities Green Products Certification System | Certified Products in Fiscal 2012

### Optical Products

#### Micro-lens units

Green Products

#### Micro-camera module for mobile phone (GP Registration No.OP-1)



- 85% reduction in power consumption of actuators for auto-focusing (compared to previous device).



- 25% volume reduction (compared to previous device).
- Eliminated the use of neodymium in actuators for driving lenses.

Green Products

#### Zoom lenses for camcorders (GP Registration No.OP-3)



- 6.5% reduction in volume and 14.1% in weight (compared to previous device).

Green Products

#### Zoom lenses for digital still cameras (GP Registration No.OP-7)



- 14.2% reduction in CO<sub>2</sub> emissions throughout product life cycle (as assessed at time of lens production).



- 5.3% weight reduction (compared to previous device).

Green Products

#### Optical microscope lens for semiconductor inspection equipment (GP Registration No.OP-9)



- 82% reduction in the weight to use ratio for the rare earth metal lanthanum (compared to previous device).

Green Products

#### Zoom lenses for digital still cameras (GP Registration No.OP-2)



- 12% reduction in volume and 6.5% in weight (compared to previous device).

Green Products

#### Zoom lenses for digital still cameras (GP Registration No.OP-6)



- 52% reduction in volume and 57% in weight (compared to previous device).

Green Products

#### Interchangeable lens for digital single-lens reflex cameras (GP Registration No.OP-8)



- Reduced power consumption during product use by achieving 50.3% reduction in torque so the lens drive motor has to exert less force (compared to previous device).



- 11% weight reduction (compared to previous device).

Green Products

#### Optical microscope lens for semiconductor inspection equipment (GP Registration No.OP-10)



- 21% reduction in the weight to use ratio for the rare earth metal lanthanum (compared to previous device).

#### Lens for optical disks

Green Products Plus

#### BD/DVD/CD-compatible plastic single objective lens for optical disks (GP Registration No.OP-4, 5)



- The industry's first BD/DVD/CD-compatible plastic single objective lens for optical disks using diffraction optics technology. [The first in the industry](#)
- The use of petroleum-based resources has been reduced by 79% (compared to our previous model).
- Smaller size made possible by reducing approximately 45% off the total length and outside diameter (compared to our previous model).





## Healthcare Products

### Desktop CR

#### Green Products Plus

### REGIUS ΣII Desktop CR



- Power consumption when in use has been cut by 20%, and 30% on standby (compared to previous model).



- The world's lightest cassette CR system, at 28kg (as of the June 2012 launch). [The top in the industry](#)



## Others

### LED lighting

#### Green Products Plus

### Symfos LED-TASKLIGHT (standard type)

A5KH-200 (black)/A5KH-300 (white)



### Symfos LED-TASKLIGHT (high color rendering/ high color temperature type)

A5KH-410



### Symfos LED-TASKLIGHT (Qi wireless recharging function model)

A6KH-200 (dark blue)/A6KH-300 (off-white)



- A light that is gentle on the eyes and in which the peculiar brightness of LED and multiple shadows has been reduced by developing a light guide plate that can change the LED light source into surface lighting
- The highest level of electricity consumption efficiency was achieved with a surface-emitting light using a light guide plate

[The top in the industry](#)





## Three Green Activities Green Factory Certification System

### Established own certification system to push ahead with environmental activities at its production sites

Konica Minolta has operated its original Green Factory Certification System for comprehensive evaluation of the environmental activities of its production sites since 2010. The purpose of this system is to bring costs down and reduce environmental impact by developing activities in line with each business's production strategy. The certification requirements in this system include not only the achievement of targets but also the degree of attainment for some 250 guidelines related to the implementation process.



green factory

### Green Factory Certification Standards

Objectives Management	indicators		Level 1	Level 2
Preventing global warming	CO <sub>2</sub> emissions (per unit of production <sup>*1</sup> )		12% reduction <sup>*5</sup>	20% reduction <sup>*5</sup>
Supporting a recycling-oriented society	Zero waste activities	Waste discharged externally <sup>*2</sup> (per unit of sales)	30% reduction <sup>*5</sup>	50% reduction <sup>*5</sup>
		Final disposal rate of total waste	0.5% or less	0.5% or less
	Petroleum-based resource waste <sup>*3</sup> (per unit of sales)		30% reduction <sup>*5</sup>	50% reduction <sup>*5</sup>
Reducing the risks of chemical substances	Atmospheric emissions of volatile organic compounds (VOCs)		Achievement of fiscal 2011 targets for each site in accordance with Medium-Term Environmental Plan 2015	Achievement of fiscal 2015 targets for each site in accordance with Medium-Term Environmental Plan 2015
	Guidelines for managing soil contamination risk		—	Consistent with guidelines
Restoring and preserving biodiversity	Guidelines for biodiversity preservation (consideration of water resources and wastewater, and proper management of greenery at factories)		—	Consistent with guidelines
Guideline-based activities	Achievement rate of implemented items <sup>*4</sup>		70% or more	90% or more

<sup>\*1</sup> **Per unit of production:** Environmental impact in terms of production output or production volume. Each business unit selects the measure that enables its productivity versus CO<sub>2</sub> emissions to be evaluated appropriately.

<sup>\*2</sup> **Waste discharged externally:** Volume discharged outside Konica Minolta sites, obtained by subtracting the internally recycled and reduced volumes from the total waste generated in production processes.

<sup>\*3</sup> **Petroleum-based resources waste:** Volume of petroleum-based out of total volume of waste discharged externally.

<sup>\*4</sup> The guidelines have a 4-point evaluation benchmark ranging from 0 to 3 points for each implemented item and a standard score which serves as the performance target. The achievement rate refers to the percentage of items that meet the standard score relative to all items.

<sup>\*5</sup> The base year is fiscal 2005. However, in the event that there is a significant change to production items or production conditions due to business reorganization, the base year may be revised according to the Group's internal regulation.

**Relevant Information** ● Guidelines for Managing Soil Contamination Risk ▶ P. 32  
 ● Guidelines for Biodiversity Preservation ▶ P. 33



Three Green Activities Green Factory Certification System | Level 2 Achievement Units


Konica Minolta has implemented initiatives in line with its Green Factory Certification System. In fiscal 2011, all business units\* achieved Level 1 certification as planned. In fiscal 2012, five business units (two in China and three in Japan) became the first to attain Level 2. The Group will continue these initiatives with the aim of achieving Level 2 at all of its business units in fiscal 2015.

In fiscal 2012, this initiative accounted for significant reductions in environmental impact. Compared to a fiscal 2005 baseline, CO<sub>2</sub> emissions were down about 100,000 tons and waste discharged externally was down about 10,000 tons.

\* A single business unit is an organization engaged in the same production activities even across different locations. A single location may include several business units.

Green Factory Level 2 Achievement Units

- Preventing global warming
- ▲ Support for a recycling-oriented society
- ◆ Reduction of the risk of chemical substances
- Preserving biodiversity and managing soil contamination risk

Business Unit	Product	Main Measures	Year Achieved
Konica Minolta Opto Products Co., Ltd.	● Pickup lenses for optical disks, and lenses for laser printers	<ul style="list-style-type: none"> <li>● Reduction in cycle time; increase in yield</li> <li>▲ Reduction in the volume of waste runners produced, by reducing the diameter of unneeded plastic runners produced during plastic molding; reduction in raw materials</li> <li>■ Confirmation through WET testing using bioassays that wastewater emitted to public water areas has no effect on the ecosystem</li> </ul>	Fiscal 2012
Konica Minolta Opto (Dalian) Co., Ltd.	● Pickup lenses for optical disks, glass lenses, and lens units	<ul style="list-style-type: none"> <li>● Increase in production efficiency through installation of automated machinery; improvement in work procedures for each process; increase in machine utilization</li> <li>▲ Reduction in emission of waste runners by reducing the diameter of unneeded plastic runners produced during plastic molding; reduction in raw materials</li> <li>◆ Reduction in discharge to the atmosphere of IPA through installation of automated machinery</li> </ul>	Fiscal 2012
Konica Minolta Optical Products (Shanghai) Co., Ltd.	● Lens units, optical modules, prisms, etc.	<ul style="list-style-type: none"> <li>● Reduction in process area through changes in layout; reduction in cycle time; increase in yield</li> <li>▲ Reduction in raw materials by reducing the diameter of unneeded plastic runners produced during plastic molding; expansion of effective use of waste runners</li> </ul>	Fiscal 2012
Konica Minolta Technoproducts Co., Ltd. (Sayama)	● Medical diagnostic imaging systems, and photostimulable phosphor plates (FPD)	<ul style="list-style-type: none"> <li>● Increase in production efficiency through changes in layout of production lines; space streamlining; increase in yield</li> <li>▲ Reduction in packaging materials through effective product packaging</li> </ul>	Fiscal 2012
Konica Minolta Technoproducts Co., Ltd. (Hino)	● Photostimulable phosphor plates (CR)	<ul style="list-style-type: none"> <li>● Increase in yield through reinforced dust protection</li> <li>▲ Reduction in waste liquid through recycling of coating solution</li> <li>■ Management and protection based on a manual for rare species (golden orchid; <i>Cephalanthera falcata</i>) on site</li> </ul> <div style="text-align: right;">  </div> <p style="text-align: right;">Golden orchid conserved at the Hino Site</p>	Fiscal 2012

Relevant Information ● Restoring and Preserving Biodiversity (Ecosystem impact assessment tests using Whole Effluent Toxicity (WET) testing) ▶ P. 34



## Three Green Activities Green Marketing Activities

### Committed to reducing environmental impact in its sales and service activities and during product use

Konica Minolta carries out green marketing activities as its way of practicing environmentally friendly sales and services. The objectives of these activities are to bring costs down and reduce environmental impact by rolling out efficiency-boosting measures in distribution, packaging, sales, and service. Konica Minolta also aims to provide optimization solutions that help customers reduce their environmental impact.

Specifically, Konica Minolta has introduced various initiatives in these areas in accordance with its Medium-Term Environmental Plan 2015 to reduce CO<sub>2</sub> emissions from

distribution, the amount of packaging, and the amount of fuel used by company vehicles, and to recover used products and reuse their materials. Similarly, in order to facilitate the reduction of the environmental impact when customers use its products, Konica Minolta seeks to promote their adoption of its Green Products and offers Optimized Print Services (OPS) solutions that help customers minimize cost of ownership and lower environmental impact, while improving workflow efficiency.

#### Case 1 Rolling out Business-Based Environmentally Friendly Activities

Konica Minolta Business Solutions (HK) Ltd., a sales company in Hong Kong, has developed business-based environmentally friendly activities. The company sells MFPs certified with the Hong Kong Green Label for incorporating numerous environmental technologies, collects and recycles used MFPs, and also proposes OPS to streamline the arrangement of MFPs to help customers save energy and paper.

Furthermore, the company conducts environmental education activities through the Emerald Education Program for children together with the local environmental NGO, Green Sense.

In recognition of these activities, the company won a Green Management Bronze Award (Corporate) in the Hong Kong Green Awards 2012 organized by the Hong Kong Green Council.

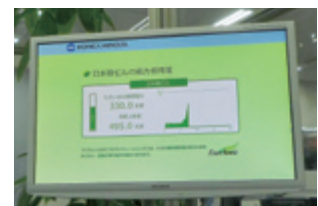


Hong Kong Green Awards 2012 Bronze Award (Corporate)

#### Case 2 Promoting Eco-Driving and an Energy-Saving Work Style

Konica Minolta Business Solutions Japan Co., Ltd., a sales company in Japan, has installed a vehicle operation management system in all company-owned vehicles. This system constantly gathers and stores data about the way company-owned cars are being used, such as the rate of sudden acceleration and deceleration, driving time, fuel consumption, and so on. Using the data, drivers of company vehicles are encouraged to implement eco-driving more rigorously to improve mileage and reduce the environmental impact of vehicle use by, for example, cutting down on idling.

Additionally, a system to graph and deliver real-time data on electricity use was installed in the head office building in February 2013 to promote an energy-saving work style. The system measures power consumption on each floor, and displays it graphically on the company intranet, and sends out emails if a designated power amount is exceeded, helping employees to stay focused on saving energy. Also, the main reception area now features an electronic sign displaying power usage in real time, where it is visible to visitors and facility users alike.



Example of on-screen power usage display

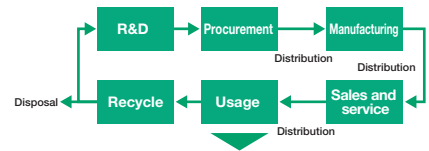


# Basic Concept/Targets and Results

## Basic Concept

Recognizing that the prevention of global warming is an important responsibility of a manufacturer, Konica Minolta is taking steps to reduce CO<sub>2</sub> emissions throughout the entire product life cycle. The Group is committed to building a sustainable earth and society by working to reduce CO<sub>2</sub> emissions throughout the product life cycle, including not only direct CO<sub>2</sub> emissions from its business activities (e.g. emissions from product manufacturing and from vehicles used for sales and services), but also indirect emissions (e.g. emissions from use of products and distribution).

### Reduction of CO<sub>2</sub> Emissions throughout the Product Life Cycle



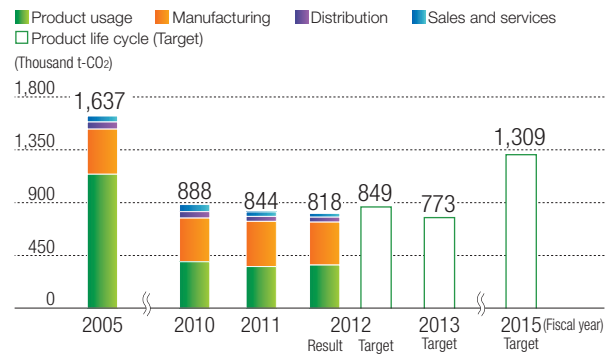
CO<sub>2</sub> reduction throughout the entire product life cycle

## Targets and Results for Fiscal 2012

### Achieved a 50% reduction in CO<sub>2</sub> emissions throughout the product life cycle

As part of its effort to reduce CO<sub>2</sub> emissions throughout the entire product life cycle, Konica Minolta has set CO<sub>2</sub> reduction targets for each stage, including product usage, manufacturing, distribution, and sales and services. Building on the results of reduction efforts implemented in previous years, in fiscal 2012 Konica Minolta set its reduction targets to make them even more challenging than the goals set for fiscal 2015. These efforts brought life cycle emissions in fiscal 2012 down to 50% of what they were in fiscal 2005.

### CO<sub>2</sub> Emissions across Product Life Cycle



### Fiscal 2012 Targets and Results (Base Year: Fiscal 2005)

Self-assessment ★★★: Achievement more than 100% ★★: Achievement more than 80% and less than 100% ★: Achievement less than 80%

Objectives	Fiscal 2012 Targets		Fiscal 2012 Results and Key Measures		Achievement	Details
Preventing global warming	CO <sub>2</sub> emissions throughout product life cycle	-48.1%	-50.0%		★★★	
	CO <sub>2</sub> emissions from product usage	-67.7%	-67.7%	Marketed products with high energy-saving performance	★★★	P20
	CO <sub>2</sub> emissions from manufacturing (per unit of sales)	+32.5%	+27.7%	Improved energy efficiency in production	★★★	P21
	CO <sub>2</sub> emissions from distribution (per unit of sales)	-4.4%	-13.7%	Reduced air freight	★★★	P22
	CO <sub>2</sub> emissions from sales and service (per unit of sales)	-15.2%	-11.4%	Increased efficiency in sales and services Introduced eco-cars and eco-driving	★★	P23

Relevant Information ● Standards for Calculating Environmental Data  
▶ P. 47-48



# CO<sub>2</sub> Emissions from Product Usage

## Strengthened lineup of energy-saving products

Konica Minolta is focusing on its Business Technologies Business, which accounts for over 90% of the total CO<sub>2</sub> emissions from product usage, and is pursuing the development of energy-saving product technologies. In fiscal 2012, it strengthened its lineup of products with high energy-saving features, mainly color MFPs, with the release of the bizhub C554 series and bizhub C554e series, both of which can save substantially more energy than previous models. These products have received Konica Minolta's certification as Green Products Plus.

Relevant Information ● Green Products Certification System ▶ P. 12

## CO<sub>2</sub> Emissions from Product Usage



## Fiscal 2012 Targets and Results (Base Year: Fiscal 2005)

Self-assessment ★★★: Achievement more than 100% ★★: Achievement more than 80% and less than 100% ★: Achievement less than 80%

Objectives	Fiscal 2012 Targets		Fiscal 2012 Results and Key Measures		Achievement
Preventing global warming	CO <sub>2</sub> emissions from product usage	-67.7%	-67.7%	Marketed products with high energy-saving performance	★★★

Relevant Information ● Standards for Calculating Environmental Data ▶ P. 47-48

### Case 1 Reducing Energy Consumption of Color MFPs

The bizhub C554e color MFP boasts one of the world's lowest power consumption levels. Power consumption during use has been reduced by adopting LED for the scanner light source and further improving the induction heating (IH) fusing technology to increase heating efficiency. Moreover, standby power consumption was cut to a third that of the previous model by implementing finely tuned electricity saving measures during sleep mode. Incorporation of these diverse environmental technologies resulted in a reduction in power consumption of about 39% compared to the previous model\*<sup>1</sup> (based on TEC\*<sup>2</sup>).

\*<sup>1</sup> previous model: bizhub C552DS

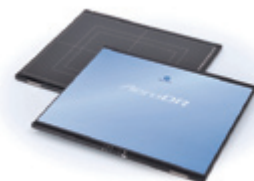
\*<sup>2</sup> TEC: Typical Energy Consumption, a measure of energy consumption established by the International Energy Star Program.



bizhub C554e

### Case 2 Reducing Energy Consumption of Digital X-ray Equipment

The AeroDR cassette digital radiography detector made by Konica Minolta, now uses far less power while maintaining image quality and processing capacity as a result of a newly developed IC and a variety of design techniques. Compared to existing models, the AeroDR uses approximately 60% less power when scanning images and approximately 90% less power when on standby.



AeroDR



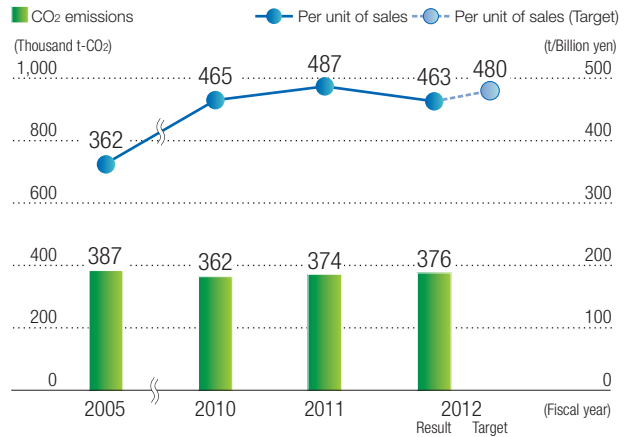
# CO<sub>2</sub> Emissions from Manufacturing

## Continued to implement initiatives in line with the Green Factory Certification System

Through operation of its unique Green Factory Certification System for comprehensive evaluation of the environmental activities of its production sites, Konica Minolta improved its energy production efficiency and steadily reduced CO<sub>2</sub> emissions from manufacturing. After all business units achieved Level 1 certification in fiscal 2011, five of them went on to earn Level 2 certification in fiscal 2012 by making even more rigorous efforts to reduce environmental impact.

Relevant Information ● Green Factory Certification System ▶ P. 16

### CO<sub>2</sub> Emissions from Manufacturing



\* The target for fiscal 2013 was changed from "per unit of sales" to "per unit of production."

## Fiscal 2012 Targets and Results (Base Year: Fiscal 2005)

Self-assessment ★★★: Achievement more than 100% ★★: Achievement more than 80% and less than 100% ★: Achievement less than 80%

Objectives	Fiscal 2012 Targets		Fiscal 2012 Results and Key Measures		Achievement
Preventing global warming	CO <sub>2</sub> emissions from manufacturing (per unit of sales)	+32.5%	+27.7%	Improved energy efficiency in production	★★★

Relevant Information ● Standards for Calculating Environmental Data ▶ P. 47-48

## Case Production Lines Reorganized to Cut Emissions

Konica Minolta Technoproducts Co., Ltd., which produces medical diagnostic imaging devices, has achieved a substantial reduction in CO<sub>2</sub> emissions at its Sayama location by reorganizing its production lines to reduce production area and optimize lighting and air conditioning. Konica Minolta Opto Products Co., Ltd., which is the mother plant for production

of optical devices such as pickup lenses for optical disks, cross-deployed measures for reducing CO<sub>2</sub> emissions that it had found effective to Konica Minolta Opto (Dalian) Co., Ltd. in China. Thanks to these efforts, these three companies became the first in the Group to attain Level 2 Green Factory certification in fiscal 2012.

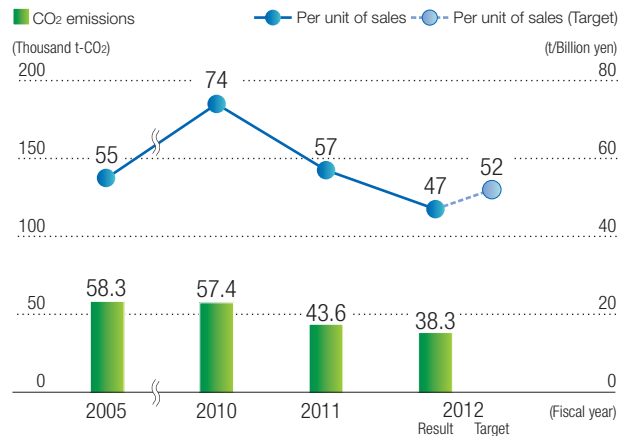


# CO<sub>2</sub> Emissions from Distribution

## Reduced airfreight volume to greatly exceed targets

Even if transporting the same weight of cargo over the same distance, an airplane emits 57 times more CO<sub>2</sub> than a ship (value published in the GHG Protocol). That is why Konica Minolta is putting priority efforts on reducing airfreight use in its operations. In fiscal 2012 it again made every effort to minimize quality problems, stick to development schedules, and improve demand forecasts, with the aim of reducing airfreight. These efforts resulted in a reduction that greatly exceeded the company's target.

### CO<sub>2</sub> Emissions from Distribution



\* The target for fiscal 2013 was changed from "per unit of sales" to "per unit of distribution."

## Fiscal 2012 Targets and Results (Base Year: Fiscal 2005)

Self-assessment ★★★: Achievement more than 100% ★★: Achievement more than 80% and less than 100% ★: Achievement less than 80%

Objectives	Fiscal 2012 Targets		Fiscal 2012 Results and Key Measures		Achievement
Preventing global warming	CO <sub>2</sub> emissions from distribution (per unit of sales)	-4.4%	-13.7%	Reduced air freight	★★★

Relevant Information ● Standards for Calculating Environmental Data  
▶ P. 47-48



# CO<sub>2</sub> Emissions from Sales and Service

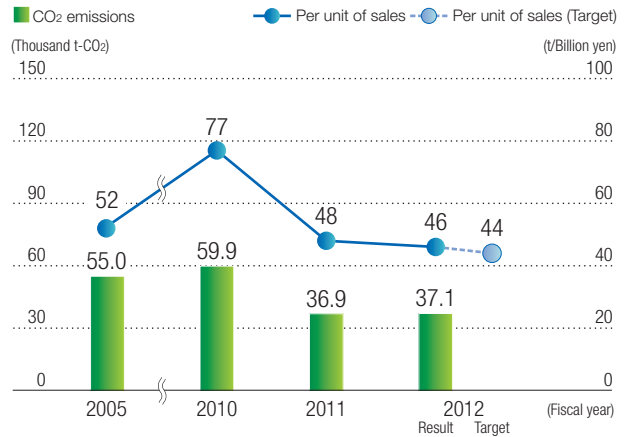
## Promoting the management and reduction of CO<sub>2</sub> emissions from its business vehicles

Konica Minolta promotes the management and reduction of CO<sub>2</sub> emissions from the business vehicles operated by its sales companies around the world.

The Group is promoting measures such as reducing the amount of travel through more efficient sales and service activities, introducing eco-friendly vehicles with low emissions of CO<sub>2</sub>, and eco-driving to reduce energy consumption.

Relevant Information ● Green Marketing Activities ▶ P. 18

### CO<sub>2</sub> Emissions from Sales and Service



\* The target for fiscal 2013 was changed from "per unit of sales" to "per unit of sales by sales companies."

## Fiscal 2012 Targets and Results (Base Year: Fiscal 2005)

Self-assessment ★★★: Achievement more than 100% ★★: Achievement more than 80% and less than 100% ★: Achievement less than 80%

Objectives	Fiscal 2012 Targets		Fiscal 2012 Results and Key Measures		Achievement
Preventing global warming	CO <sub>2</sub> emissions from sales and service (per unit of sales)	-15.2%	-11.4%	Increased efficiency in sales and services Introduced eco-cars and eco-driving	★★

Relevant Information ● Standards for Calculating Environmental Data ▶ P. 47-48





# Basic Concept/Targets and Results

## Basic Concept

Petroleum-based resources are exhaustible, and need to be used efficiently from the perspective of preventing global warming. Konica Minolta is pushing ahead with an approach that focuses on reducing the use of petroleum-based resources as one of its priorities in a recycling-oriented society.

Also, the Group is pursuing a balance between

environmental impact reduction and cost reduction, by promoting (1) the reduction of the use of packaging materials, (2) the reduction of waste discharged externally\* from the production process, and (3) the recycling of used products.

\* **Waste discharged externally:** Volume discharged outside Konica Minolta sites, obtained by subtracting the internally recycled and reduced volumes from the total waste generated in production processes.

## Targets and Results for Fiscal 2012

### Reducing resources used in products and using more recycled materials

Konica Minolta has established goals for contributing to a recycling-oriented society and is working toward their achievement in the areas of reducing resources used in products and packaging materials, reducing emissions from production activities, and recycling products and consumables recovered after use.

With respect to reducing the use of petroleum-based resources, the Group is carrying out initiatives based on three

themes: the volume of resources used in products, such as plastic materials; the volume of waste, such as plastic materials and solvents generated as loss during production; and fuel use for vehicles used during sales and service activities. Concerning the reduction of plastic materials, the Business Technologies Business, which is the Group's leading business, is pushing the use of recycled materials, such as recycled plastics developed in-house.

### Fiscal 2012 Targets and Results (Base Year: Fiscal 2005)

Self-assessment ★★★: Achievement more than 100% ★★: Achievement more than 80% and less than 100% ★: Achievement less than 80%

Objectives	Fiscal 2012 Targets		Fiscal 2012 Results and Key Measures		Achievement	Details
Supporting a recycling-oriented society	Petroleum-based resource usage (per unit of sales*1)	+15.7%	+10.3%	Reduced resources used in products Reduced waste in production Introduced eco-cars and eco-driving	★★★	P25
	Packaging materials usage (per unit of sales)	+9.7%	+6.1%	Reduced packaging through improved design Made packing boxes returnable between production facilities	★★★	P26
	Waste discharged externally from manufacturing (per unit of sales)	+8.1%	+3.3%	Improved production efficiency and promoted internal recycling	★★★	P27
	Product recycling •Market re-manufactured MFPs worldwide •Investigate packaging and parts reuse			Creation of next-period scenarios for reconditioned copiers Investigation of additional packaging reduction measures	★★★	P28

\*1 Environmental impact per unit of sales

\* The petroleum-based resource usage, for which reduction targets are set in the Medium-Term Environmental Plan, is calculated by taking the total amount of (1) petroleum-based resource usage in products; (2) petroleum-based resource waste in waste discharged externally from manufacturing; and (3) fuel consumption of sales and service vehicles.

**Relevant Information** ●Standards for Calculating Environmental Data  
▶ P. 47-48

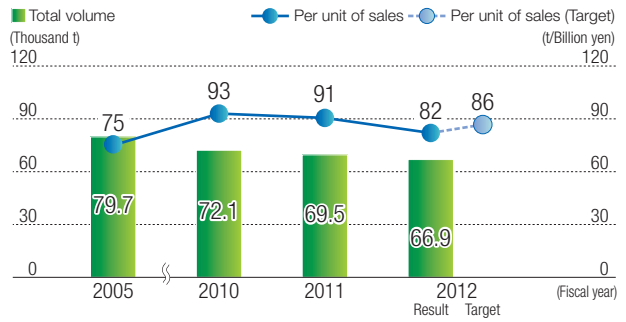


# Reduce Petroleum-Based Resource Usage

## Adopting recycled materials, including recycled plastic developed in-house

Konica Minolta is reducing the use of petroleum-based resources via initiatives targeting each of the following phases of the product lifecycle: development, production, and sales and service. The Group is emphasizing the reduction of resources used in products, especially plastic material—which accounts for over 60% of total petroleum-based resources consumed. In its Business Technologies Business, the company is aggressively using recycled materials, releasing the bizhub C554 series and bizhub C554e series, both of which contain a good balance of two environmentally friendly plastics: a recycled PC/PET developed in-house and a plant-derived bioplastic.

### Petroleum-Based Resource Usage



\* The petroleum-based resource usage, for which reduction targets are set in the Medium-Term Environmental Plan, is calculated by taking the total amount of (1) petroleum-based resource usage in products; (2) petroleum-based resource waste in waste discharged externally from manufacturing; and (3) fuel consumption of sales and service vehicles.  
 \* The target for fiscal 2013 was changed from "per unit of sales" to (1) "per unit of sales volume," (2) "per unit of production," and (3) "per unit of sales by sales companies," respectively.

## Fiscal 2012 Targets and Results (Base Year: Fiscal 2005)

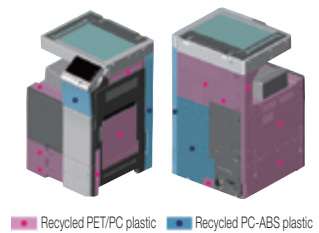
Self-assessment ★★★: Achievement more than 100% ★★: Achievement more than 80% and less than 100% ★: Achievement less than 80%

Objectives	Fiscal 2012 Targets	Fiscal 2012 Results and Key Measures	Achievement
Supporting a recycling-oriented society	Petroleum-based resource usage (per unit of sales) +15.7%	Reduced resources used in products Reduced waste in production Introduced eco-cars and eco-driving	★★★

Relevant Information ● Standards for Calculating Environmental Data  
 ▶ P. 47-48

### Case 1 Using Originally Developed Recycled Material in Products

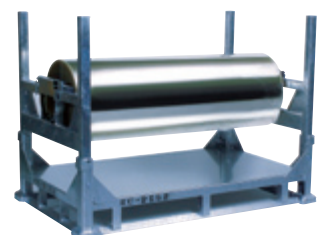
Konica Minolta uses recycled material in products in an effort to make effective use of resources. The bizhub C554e series of color MFPs, for example, uses two kinds of recycled material in 20 locations that make up nearly 40% of the outer casing. One of those materials, recycled PC\*1/PET\*2, is a mixed recycled material made using Konica Minolta's original chemical processing technology. The material was developed by evenly mixing materials from recovered one-gallon water cooler jugs and plastic drinking bottles to create a material that has the required strength and fire-retardant properties to meet safety standards and that can be mold injected.



\*1 PC: Polycarbonate, a type of thermoplastic resin  
 \*2 PET: Polyethylene terephthalate, a type of polyester

### Case 2 Resources Conserved through Development of Thinner TAC Film

In the area of performance materials, Konica Minolta has drawn on its strengths in manufacturing technology to make thinner and thinner TAC film, which protects polarizers in liquid crystal displays. This has contributed to the conservation of resources while also helping to make IT devices lighter. Until recently Konica Minolta sold a high-quality, thin-film product with a thickness of 40 μm. It has now become the first in the industry to develop a super-thin TAC film with a thickness of only 25 μm for the mobile market, launching mass production in November 2012.



TAC film for LCD polarizers

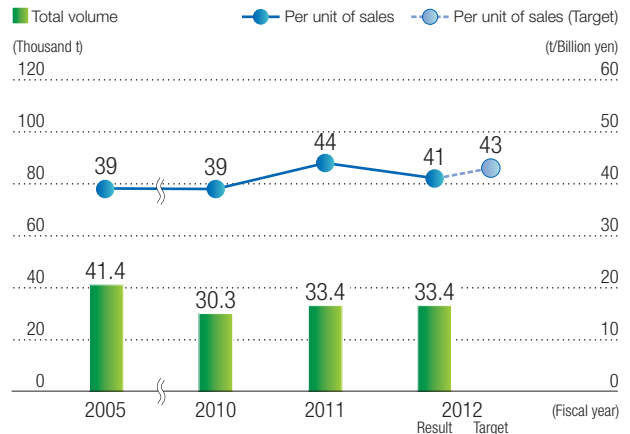


# Reduce Packaging Materials Usage

## Redesigning packaging and making packing boxes returnable

Konica Minolta is focusing on its office equipment, which accounts for more than 90% of its usage of packaging materials, in its efforts to reduce that usage. It has reduced mass by improving the shape of packaging and made other efforts such as reusing toner cases that are used to send toner between production sites and making packing boxes for service parts at sales companies returnable.

**Packaging Materials Usage**



\* The target for fiscal 2013 was changed from "per unit of sales" to "per unit of sales volume."

## Fiscal 2012 Targets and Results (Base Year: Fiscal 2005)

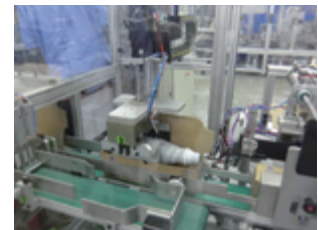
Self-assessment ★★★: Achievement more than 100% ★★: Achievement more than 80% and less than 100% ★: Achievement less than 80%

Objectives	Fiscal 2012 Targets		Fiscal 2012 Results and Key Measures		Achievement
Supporting a recycling-oriented society	Packaging materials usage (per unit of sales)	+9.7%	+6.1%	Reduced packaging through improved design Made packing boxes returnable between production facilities	★★★

Relevant Information ● Standards for Calculating Environmental Data  
▶ P. 47-48

## Case Rolling out Packaging Material Reductions for Toner Bottles Worldwide

Konica Minolta has achieved cost reductions and environmental impact reduction by improving how it packages bottles of toner for MFPS. A device designed at the Mizuho site in Aichi Prefecture has made it possible to automate the work of packing boxes, which used to be done by hand. This device was installed at a toner filling plant in France in 2011 and then at a toner filling plant in the US in 2012. The Group also reconsidered the size of packaging and the method of packing at the time of shipment, which enabled it to achieve a reduction of about 28% in the annual usage of packaging materials. Going forward, the Group will adopt these measures at toner plants in Japan and aim to roll them out worldwide.





# Reduce Waste Discharged Externally from Manufacturing

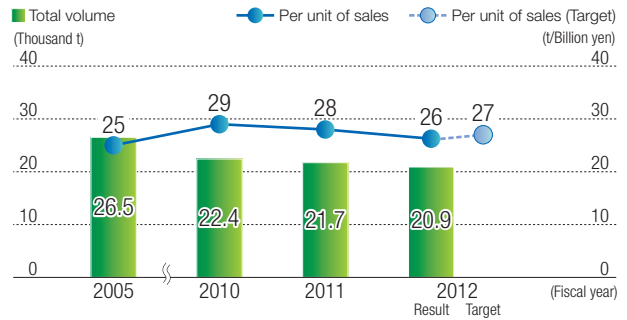
## Pursuing activities related to the Green Factory Certification System

The Group is reducing the amount of waste discharged externally from manufacturing by promoting initiatives by each business unit to improve the production efficiency and increase the percentage of internal recycling in accordance with the standards in the Green Factory Certification.

In fiscal 2012, five business units became the first to attain\* Green Factory Level 2. Compared to a 2005 baseline, waste discharged externally was down about 10,000 tons.

Relevant Information ● Green Factory Certification System ▶ P. 16

### Waste Discharged Externally from Manufacturing



\* The target for fiscal 2013 was changed from "per unit of sales" to "per unit of production."

## Fiscal 2012 Targets and Results (Base Year: Fiscal 2005)

Self-assessment ★★★: Achievement more than 100% ★★: Achievement more than 80% and less than 100% ★: Achievement less than 80%

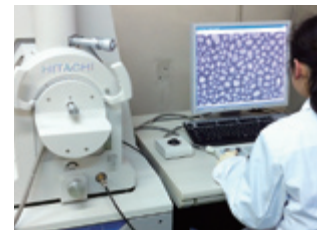
Objectives	Fiscal 2012 Targets		Fiscal 2012 Results and Key Measures		Achievement
Supporting a recycling-oriented society	Waste discharged externally from manufacturing (per unit of sales)	+8.1%	+3.3%	Improved production efficiency and promoted internal recycling	★★★

Relevant Information ● Standards for Calculating Environmental Data ▶ P. 47-48

## TOPICS Developing Recycling Technology for the Rare Earth, Cerium Oxide

There are only a few supplier countries of rare earth materials worldwide, leading to concern about risks such as limited supply and rising costs. Also, rare elements must be used efficiently to realize sustainable human societies. Cerium oxide is a rare earth element used as a polishing material for glass. There has been a need to reclaim cerium oxide from waste liquid left after polishing, but the challenge was how to remove the glass particles.

Building on the advanced materials technology gained in the development of films and toners, Konica Minolta has successfully developed recycling technology able to extract high-purity cerium oxide from polishing waste. The recycling rate for the polishing process overall now exceeds 90%, thanks to the new recovery and recycling of cerium oxide also from the waste liquid left over from washing products after polishing. Konica Minolta is currently installing this system at lens and HDD glass substrate production sites in and outside Japan, and it will also sell the recycling technology to contribute to the broader industrial world.





# Product Recycling

## Implementing initiatives focusing on office equipment

The Medium-Term Environmental Plan 2015 calls for building a system for recycling used products in each region, with the aim of obtaining a 90% recycling rate or more. The Group, focusing on its office equipment and consumable supplies, has been working to implement various measures. It is continuing to market re-manufactured MFPs worldwide and is also expanding the reuse of parts and recycling of materials.

## Fiscal 2012 Targets and Results

Self-assessment ★★★: Achievement more than 100% ★★: Achievement more than 80% and less than 100% ★: Achievement less than 80%

Objectives	Fiscal 2012 Targets	Fiscal 2012 Results and Key Measures	Achievement
Supporting a recycling-oriented society	Product recycling •Market re-manufactured MFPs worldwide •Investigate packaging and parts reuse	Creation of next-period scenarios for reconditioned copiers Investigation of additional packaging reduction measures	★★★

## Recovery and Recycling of Office Equipment

### Recovery and Recycling Printer Cartridges

Konica Minolta has established a system for free-of-charge recovery and recycling of used toner cartridges for laser printers in 18 European countries and Japan. Furthermore, in the United States the scope of the system has been expanded to include used MFP toner bottles also. In North America and Europe, this system is called the Clean Planet Program.



U.S. website



European website

### Recovery and Recycling of Used MFPs and Laser Printers

To facilitate the recovery and recycling of used products, Konica Minolta has established systems in each area that are suited to the regulations and markets of respective countries around the world.

In Japan, the company has received approval from the Ministry of the Environment to recover MFPs, copiers, and printers sold in Japan based on a special system for wide-area treatment of industrial waste.

Konica Minolta operates a fee-based recovery program for collecting and recycling used laser printers and copiers from corporate clients. At this time, the program does not handle used equipment disposed of by individual customers,

as such equipment is classified as general waste.

Outside Japan, Konica Minolta is undertaking recycling programs tailored for specific countries and their markets. In Europe, the company has adopted measures in conformity with the EU directive on the disposal of waste electrical and electronic equipment (WEEE).

#### Machines collected in Japan in fiscal 2012

Estimated collection rate	72.1%
Recycling rate	98.2% (by weight)



# Basic Concept/Targets and Results

## Basic Concept

There is international consensus on the need for companies that manufacture and use chemical substances to take steps to minimize the adverse effects of chemicals, not only on human health, but also on the environment. Based on this shared perception, many countries around the world are currently revising their regulations concerning chemical substances. Having taken a position in advance of this new international current, based on a concept known as the “precautionary principle,” Konica Minolta has focused on enhancing its advance evaluation of chemical risks, reducing the emission of harmful substances into the atmosphere,

eliminating hazardous substances from production processes and products, and improving safety management for workers and product users.

The Medium-Term Environmental Plan 2015 sets targets for strict management of chemical substances, including the entire supply chain,\* and reduction of atmospheric emission of volatile organic compounds (VOCs) in order to further reduce the risk of chemical substances.

\* **Supply chain:** In this case, the process by which raw materials from upstream companies pass through component manufacturers and are delivered to Konica Minolta.

## Targets and Results for Fiscal 2012

### Seeking alternatives to substances earmarked for reduction and reducing VOC emissions

Konica Minolta is committed to rigorous control of chemical substances throughout the supply chain and is moving ahead with plans to replace substances earmarked for reduction with alternatives. The Group has also been making every effort since 1993 to reduce atmospheric emissions of volatile

organic compounds (VOCs) at its production sites around the world, focusing on VOCs with higher risks based on hazard and volume. In fiscal 2012, all businesses achieved the Group’s targets by implementing measures under the Green Factory Certification System.

### Fiscal 2012 Targets and Results (Base Year: Fiscal 2005)

Self-assessment ★★★: Achievement more than 100% ★★: Achievement more than 80% and less than 100% ★: Achievement less than 80%

Objectives	Fiscal 2012 Targets		Fiscal 2012 Results and Key Measures		Achievement	Details
Reducing the risk of chemical substances	Chemical substance management • Plan alternatives to materials targeted for reduction • Respond to RoHS*1 self-declaration of conformance		Initiative plan for substances targeted for reduction Response to the RoHS self-declaration of conformance		★★★	P30
	Atmospheric emissions of volatile organic compounds (VOCs) (environmental impact index*2)	-70.5%	-75.3%	Implementation of the VOC reduction plan	★★★	P31

\*1 **RoHS Directive:** Regulations enacted by the EU in July 2006 prohibiting the use of specified hazardous substances in electrical and electronic equipment.

\*2 **Environmental impact index:** An index unique to Konica Minolta designed to measure impact on the environment, obtained by multiplying VOC emission volume by a hazard factor (impact on human health and environmental impact) and a location factor.

**Relevant Information** ● Standards for Calculating Environmental Data  
▶ P. 47-48



# Chemical Substance Management

## Committed to chemical substances control throughout the supply chain

Konica Minolta is committed to rigorous control of chemical substances throughout the supply chain. In fiscal 2012, the Group identified substances for reduction out of the substances of very high concern (SVHC) under the REACH regulations\*1, and surveyed alternatives and developed reduction and control plans by use and field. Additionally, the Group is asking suppliers to control substances included in products and practices management compliant with the revised RoHS Directive.\*2

\*1 REACH regulations: Regulations enacted by the EU in June 2007 concerning the registration, evaluation, authorization and restriction of chemicals, to consolidate existing regulations concerning chemical substances.

\*2 RoHS Directive: Regulations enacted by the EU in July 2006 prohibiting the use of specified hazardous substances in electrical and electronic equipment.

## Fiscal 2012 Targets and Results

Self-assessment ★★★: Achievement more than 100% ★★: Achievement more than 80% and less than 100% ★: Achievement less than 80%

Objectives	Fiscal 2012 Targets	Fiscal 2012 Results and Key Measures	Achievement
Reducing the risk of chemical substances	Chemical substance management • Plan alternatives to materials targeted for reduction • Respond to RoHS self-declaration of conformance	Initiative plan for substances targeted for reduction Response to the RoHS self-declaration of conformance	★★★

## Green Procurement System

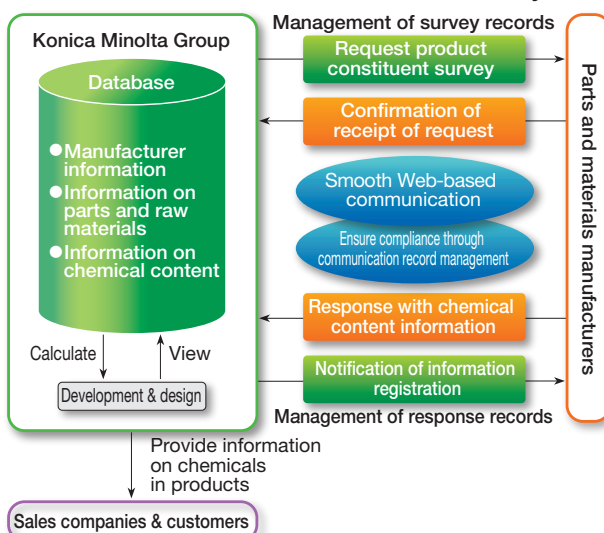
### Implementation of a Green Procurement System compliant with more stringent chemical substance regulations

Konica Minolta implements green procurement, assessing the chemical constituents of parts and components and giving preference to those with the least environmental impact. Konica Minolta's green procurement meets international standards. In 2012, the Group incorporated the International Electrotechnical Commission's IEC 62474 standard, in order to ease the data-gathering workload on suppliers as much as possible in today's increasingly complex regulatory environment. The Group also periodically holds supplier briefings on trends in environmental laws and regulations and

revisions to Konica Minolta standards.

The Group introduced its current green procurement system in 2009, overhauling the previous system. The system has been made to comply with the tightening of regulations on chemical substances in products, expanding its coverage to include candidate SVHCs for authorization and other substances restricted under REACH regulations. The Group is keeping an eye on trends in regulations and alternative technologies and is working on plans to eliminate hazardous materials in order to be sure it avoids risks.

### Overview of the SIGMA Green Procurement System



### Main Features

- Japanese, English and Chinese language support
- Supports two standard chemical substance surveys (JAMP\*1 and JGPSSI\*2) and independent methods.
- Separates the procedures for checking for prohibited substances and for collection of information on reported substances in products
- Sharing information of survey and response with business partners
- Databasing of communication records ensures compliance through tracking
- Simplifies the response to changes in regulations and substances subject to control

\*1 JAMP: Standards for chemical substance surveys established and implemented by the Joint Article Management Promotion-consortium.

\*2 JGPSSI: Standards for chemical substance surveys established and implemented by the Japan Green Procurement Survey Standardization Initiative.



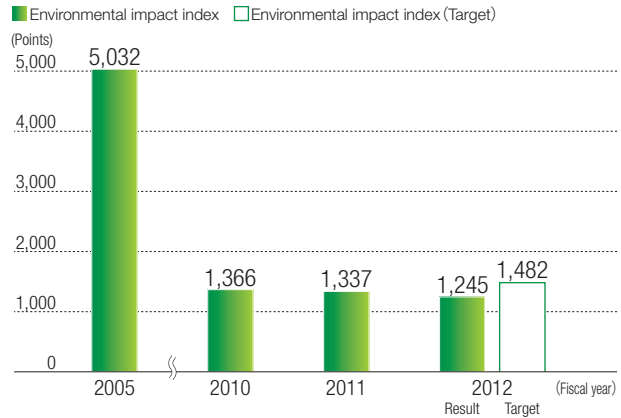
# Reduction of Atmospheric Emissions of VOCs

## Implementing a unique risk management index to reduce VOCs

Since 1993, Konica Minolta has worked to reduce atmospheric emissions of volatile organic compounds (VOCs) at its production sites around the world, focusing on VOCs with higher risks based on hazard and volume. The Group worked systematically to eliminate the use of highly hazardous solvents by fiscal 2010, and it has been maintaining this state since fiscal 2011.

The Group has established its own environmental impact index\*1 as part of the Medium-Term Environmental Plan 2015, with the aim of reducing the use of substances that pose a risk to ecosystems or may have an indirect environmental impact, as well as substances that pose a direct risk to human health or a risk of atmospheric pollution. In fiscal 2012, VOC emissions were down 75% from fiscal 2005, meeting the annual target. The Group will maintain this state into the future.

## Reduction of Atmospheric VOC Emissions (Risk-Adjusted)



\* The target for fiscal 2013 was changed from "total points" to "total points per unit of production."

\*1 **Environmental impact index:** An index unique to Konica Minolta.  
 Environmental impact index (point) = Atmospheric emissions of VOCs [t] × Hazard coefficient × Location coefficient  
**Hazard coefficient:** Set at 1-fold, 10-fold, or 100-fold depending on the severity of the impact on human health and the environment (set independently by Konica Minolta based on the coefficient used in the safety evaluations conducted by Kanagawa Prefecture in Japan)  
**Location coefficient:** Outside the industrial estate 5, inside the industrial estate 1

## Substances for Which Konica Minolta Achieved Elimination

Name of Chemical Substance	Achievement Year
Tetrachloroethylene	1998
1, 4-Dioxane	2002
Benzene	2003
chloroform	2004
Dimethyl formamide	2004
formalin	2004
Trichloroethylene	2007
1, 2-Dichloroethane	2010

## Substances Konica Minolta Has Earmarked for Reduction

	Hazard Coefficient	Example of Substances
Substances that pose a risk to human health	×100	1, 2-dichloroethane
Substances that pose a risk to ecosystems		
Substances that pose a risk of atmospheric pollution	×10	dichloromethane, ethyl acrylate, n-heptane
Substances that pose an indirect impact on the environment	×1	isopropyl alcohol, methanol, ethanol, acetone, ethyl acetate

## Fiscal 2012 Targets and Results (Base Year: Fiscal 2005)

Self-assessment ★★★: Achievement more than 100% ★★: Achievement more than 80% and less than 100% ★: Achievement less than 80%

Objectives	Fiscal 2012 Targets		Fiscal 2012 Results and Key Measures		Achievement
Reducing the risk of chemical substances	Atmospheric emissions of volatile organic compounds (VOCs) (environmental impact index)	-70.5%	-75.3%	Implementation of the VOC reduction plan	★★★

Relevant Information ● Standards for Calculating Environmental Data  
 ▶ P. 47-48





## Countermeasures against Contamination of Soil and Ground Water

### Regular monitoring and further purification to prevent the spread of contamination

Konica Minolta is conducting robust management through periodic observation at sites in Japan where soil or ground water contamination has been identified to ensure that the contaminants do not affect the surrounding environment.

The Group has organized a specialist team to manage remediation of polluted sites and to prevent the spread of contamination. Detailed surveys conducted under the team's supervision serve as the basis for developing countermeasures

and examining suitable purification technologies.

The Group reports the results of its observations and remediation efforts periodically to local government agencies and to concerned neighboring residents.

**Relevant Information** ● Summary of Contaminated Soil or Ground Water at Operation Sites ▶ P. 49

### Establishment of Guidelines for Managing Soil Contamination Risk

Guidelines have been set for risk management of soil contamination as part of Konica Minolta's unique Green Factory Certification System for comprehensive evaluation of the environmental activities of its production sites, as the certification standards for Level 2 require compliance with these guidelines, from April 2011.

**Relevant Information** ● Green Factory Certification System ▶ P. 16

#### Guidelines for Managing Soil Contamination Risk

- The risk of soil contamination has been assessed through preliminary surveys at production sites known to have a high risk from past surveys.
- If soil contamination (in excess of the standard value) is observed, measures are taken to prevent damage to human health.
- Measures are also taken to prevent run off of contamination outside the site.



# Basic Concept/Targets and Results

## Basic Concept

Preservation of biodiversity is one of the major environmental issues that have to be addressed, along with global warming.

Konica Minolta makes it a policy to evaluate its impact and dependence on biodiversity in its business activities, address them in priority order of their impact, and put into practice measures that utilize Group resources such as technology and products.

## Targets and Results for Fiscal 2012

### Konica Minolta pursues activities related to the Green Factory Certification System

Konica Minolta has been implementing various initiatives, mainly at its production sites, to restore and preserve biodiversity. The Group has made meeting the standards of its Guidelines for Biodiversity Preservation a requirement for attaining Level 2 certification under the Green Factory Certification System, which specifically requires consideration of water resources, consideration of wastewater, and proper management of greenery at factories. As part of these initiatives, the Group is conducting ecosystem impact assessment tests based on bioassays to verify the impact of wastewater on the surrounding ecosystems.

Relevant Information ● Green Factory Certification System ▶ P. 16

### Guidelines for Biodiversity Preservation

#### Consideration of water resources

- Reduction targets are set for total water consumption, or for water used on site, and reduction measures are implemented.
- If groundwater is used, measures must be taken to reduce the amount used.

#### Consideration of wastewater

- In order to prevent ecological damage to rivers and lakes, a risk management system must be established to shut off highly polluted wastewater.
- Checks are in place to determine the impact of wastewater emitted into public water areas on ecosystems, such as aquatic habitats.

#### Proper management of greenery at factories

- Invasive alien species that are likely to have a negative impact on ecosystems are not planted or sown on the factory's premises.
- When planting trees in factory grounds, management and protection must be accorded to any rare species that are discovered.

## Fiscal 2012 Targets and Results

Self-assessment ★★★: Achievement more than 100% ★★: Achievement more than 80% and less than 100% ★: Achievement less than 80%

Objectives	Fiscal 2012 Targets	Fiscal 2012 Results and Key Measures	Achievement
Restoring and preserving biodiversity	<ul style="list-style-type: none"> <li>● Pursue compliance with the Guidelines for Biodiversity Preservation</li> <li>● Deploy the ecosystem impact assessment</li> <li>● Establish the procurement standards for paper and prepare global deployment</li> </ul>	<ul style="list-style-type: none"> <li>Undertake activities according to the guidelines for biodiversity preservation</li> <li>Deploy the ecosystem impact assessment outside Japan</li> <li>Prepare global deployment of the procurement standards for paper</li> </ul>	★★★



## Specific Initiatives

### Ecosystem Impact Assessment Tests Using Whole Effluent Toxicity (WET) Testing

#### Conducting bioassay testing at plants to confirm that there is no negative impact on test organisms

Konica Minolta has included in the Guidelines for Biodiversity Preservation a stipulation that it investigate the impact plant wastewater has on ecosystems, and this is a certification requirement set forth in the Green Factory Certification System.

In fiscal 2011, four plants in Japan that emit wastewater from manufacturing processes into public water areas carried out bioassays using Whole Effluent Toxicity (WET)\* testing, which is a new method of wastewater management currently attracting attention around the world. Specifically, the testing, implemented with the cooperation of the National Institute for Environmental Studies, was done on an alga (*Selenastrum capricornutum*), a crustacean (*Ceriodaphnia dubia*), and a fish (zebra fish, *Danio rerio*). The results indicated that there was no negative impact (alga: inhibition of growth; crustacean: inhibition of breeding; fish: reduced hatching rate or reduced survival rate after hatching) on any of the three test organisms at any of the four plants.

In fiscal 2012, WET testing was conducted at a plant in Malaysia, and the results indicated that there was no negative impact on the alga or other test organisms. The Group will

continue to conduct WET testing as needed, such as when there is a change in production processes.

\* **Whole Effluent Toxicity (WET):** A method that assesses the aggregate toxic effect of wastewater on aquatic life rather than the volume of individual chemical substances. Unlike conventional effluent management methods, it enables holistic assessment of the effect of an effluent, detecting the impact caused by any non-regulated chemical substance or the combined impact of multiple substances.



### Procurement Standards for Paper Forms

#### Procuring copy paper in consideration of forest resource conservation

Konica Minolta Business Solutions Co., Ltd., an office equipment and solutions sales company in Japan, has established the PPC Paper Purchase Standards, which have been implemented since 2007. The Standards stipulate that copy paper supplied to customers should be procured by

taking into account the impact of forest destruction and degradation on living environments of animals, plants, and people. The company has been conducting a review of its procurement standards for paper from a global perspective to ensure the sustainability of forest resources.



# Basic Concept/Environmental Information Disclosure

## Basic Concept

The entire Konica Minolta Group is working to carry out environmental conservation activities and to reduce the environmental impact associated with its business activities. The Group actively provides information on the planning and progress of these efforts. By developing close communication with various stakeholders, Konica Minolta intends to fulfill its responsibilities as a good corporate citizen.

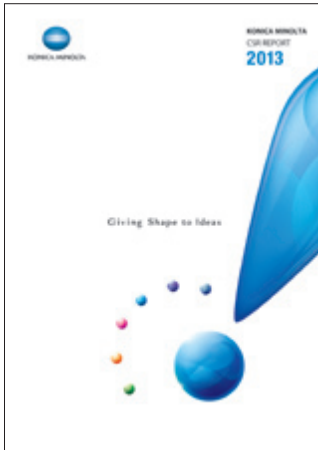
The Group distributes information through various

methods, including its website and CSR reports, based on the principle of transparent and ongoing information disclosure. In order to inform customers of the environmental performance of its products, Konica Minolta seeks to provide this information through environmental labels. It is actively pursuing various social contribution activities while creating regular opportunities for direct dialogue with community members.

## Environmental Information Disclosure

### Publishing Group-wide Environmental Report annually

Konica Minolta publishes an Environmental Report and CSR Report annually as a means of informational disclosure on the Group's environmental initiatives. These reports are available from the Group's website.



CSR Report 2013



Environmental Report 2013



The Group's environmental website



## Environmental Information Disclosure

### Environmental labeling to provide information on environmental performance of products

#### Type-I Environmental Labels

Konica Minolta is actively promoting the acquisition of Type-I environmental certification labels. These labels indicate that a third-party institution has certified the low environmental impact of a product.

● **Blue Angel Mark (Germany)**



● **Eco Mark (Japan)**



● **EcoLogo (Canada)**



● **China Environmental Labeling Product Certification for Low-Carbon Products (China)**



● **Hong Kong Green Label Scheme (Hong Kong)**



#### International Energy Star Program

Products that meet certain standards can be registered as Energy Star devices as part of an energy-saving program for OA equipment. Almost all of Konica Minolta's MFPs and laser printers meet the Energy Star standards.



#### Eco Leaf Environmental Label

Type-III environmental labeling provides information on the environmental impact of a product, based on quantitative measurement of environmental impact through the product's entire life cycle. Konica Minolta discloses environmental impact data concerning its office equipment through the Eco Leaf system of Type-III environmental labeling.



#### Electronic Product Environmental Assessment Tool (EPEAT)

EPEAT is an environmental rating tool that judges the effects on the environment of electronic products and was created to encourage the purchasing of greener products. In the US, it is adopted as a procurement requirement mainly by government agencies. In the field of "Imaging Equipment," a product is assessed on 33 required criteria, such as energy conservation, reduction and elimination of environmentally sensitive materials, and reduction of waste, as well as 26 optional criteria. The product is added to the EPEAT registry with a rating of Bronze, Silver or Gold depending on how many of the criteria are met.



Konica Minolta has obtained registration for its 14 MFP products with Gold status, and Silver status for five digital printing system products and 14 other MFP products (as of July 31, 2013). The Group plans to continue to obtain registration with Gold status for its major office equipment products.

### TOPICS Konica Minolta Wins "Eco Mark Award 2012" Bronze Prize

In January 2013, Konica Minolta won an "Eco Mark Award 2012" Bronze Prize from the Japan Environmental Association. The Eco Mark Award was established in 2010 to honor companies and organizations that have contributed greatly to the creation of a sustainable society by helping consumers make environmentally conscious product choices and by facilitating corporate efforts to improve environmental performance. Konica Minolta was given this award in recognition of its initiatives to reduce environmental impact throughout the life cycle of its color MFP bizhub C series.





# Communication with Society

## Participating in Shows and Exhibits

### Presentation of Environmental Technologies and Products at Exhibitions and Facilities

Japan's largest environmental exhibition, Eco-Products, is held annually at Tokyo Big Sight, and Konica Minolta has participated in this exhibition every year since 1999.

At Eco-Products 2012, held in December 2012, the Group introduced its Green Products Certification System, among other environmental initiatives, and exhibited its bizhub C364, which is a Green Product. The Group also exhibited its LED and OLED lighting, considered to be the next generation in lighting, as well as its functional window films, which will be a

business of the future.

In addition, the Group maintains a permanent booth at the Osaka ATC Green Eco Plaza (Suminoe-ku, Osaka), which seeks to stimulate environmental businesses by exhibiting environmental technologies and products at the exhibition. Through such activities, Konica Minolta provides straightforward information about its environmental efforts and the energy-saving technologies used in its MFPS.

Relevant Information ● Green Products Certification System ▶ P. 12



The Konica Minolta booth at Eco-Products 2012



Display of organic light emitting diode (OLED) lighting



The permanent booth at Osaka ATC Green Eco Plaza



## Communication with Society

### Environmental and Social Contribution Activities

#### Case 1 Sponsoring a Marathon to Fund Tree Planting in Ethiopia

The Green Marathon held in Rennes, the regional capital of Brittany in France, organizes a project to plant trees in Ethiopia in Eastern Africa according to the distances run. This initiative contributes to reforestation in that country, where 1,400 km<sup>2</sup> of forest is lost every year, and it also helps to create employment through local contracting of the tree planting work.

Konica Minolta Business Solutions France has endorsed the project concept and supported the marathon since its first year in fiscal 2011. In fiscal 2012, there were 67,615 trees planted, one for every kilometer that the participants ran. In fiscal 2013, the company increased its cooperation by becoming a title sponsor.



#### Case 2 Environmental Education for Children

Konica Minolta Business Solutions (HK) Ltd. has been running an environmental education program for children—the Emerald Education Program—in collaboration with the local environmental NGO Green Sense since fiscal 2012. The program offers a variety of hands-on experiences such as workshops on making soap from used oil, experiments with solar energy, and eco tours to observe rare creatures.



Eco-tour

Experiment of the solar energy



#### Case 3 Supporting Charity for Protecting the Japanese Red-Crowned Crane (Japan)

Not long ago, the number of red-crowned cranes\* indigenous to Japan plummeted due to the deterioration of their native habitat. The bird was, for a time, on the verge of extinction. However, thanks to the establishment of the Tsurui Ito Red-Crowned Crane Sanctuary in 1987 by the Wild Bird Society of Japan, and to the protection activities undertaken by local residents and concerned organizations, the number of cranes has increased to more than 1,000. Konica Minolta has been a supporter of the crane-protection activities since the establishment of the sanctuary. As part of this effort, Konica Minolta co-sponsors the Konica Minolta Japanese Red-Crowned Crane Charity.



Japanese red-crowned crane

\* The red-crowned crane is a large bird with a white body and a patch of red on the crown of its head. Its habitat extends from eastern Eurasia to Hokkaido in Japan.

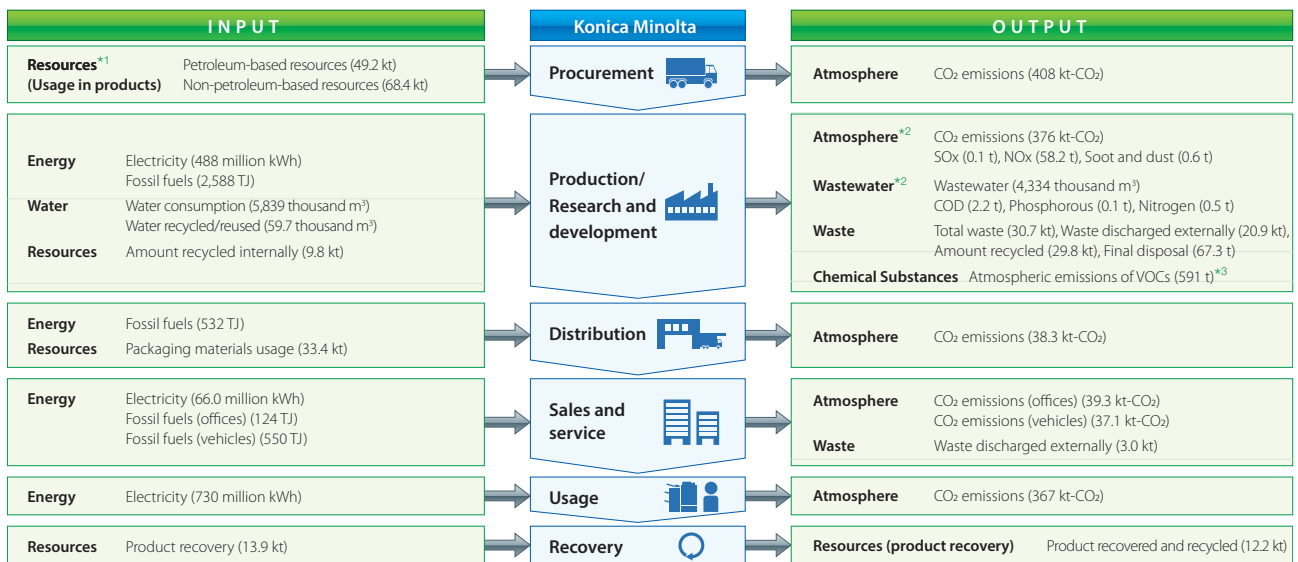


# Environmental Data

<b>Environmental Impacts Resulting from Business Activities</b> .....	39	<b>Environmental Data by Site</b> .....	45
<b>INPUT</b>		<b>Standards for Calculating Environmental Data</b> ...	47
<b>Energy and Water</b> .....	40	<b>Management of Chemical Substances</b>	
<b>OUTPUT</b>		Survey and Countermeasures Implemented for Soil or Ground Water Contamination	49
<b>Atmosphere</b> .....	41	<b>CO<sub>2</sub> Emissions across the Entire Supply Chain</b> ..	50
<b>Wastewater</b> .....	42	<b>Environmental Accounting</b> .....	52
<b>Waste</b> .....	43		
<b>Chemical Substances</b> .....	44		

## Environmental Impacts Resulting from Business Activities

### Overall Picture of Environmental Impact



\*1 Calculated by weight of each material or part used in major products and consumable supplies, based on the product specification.

\*2 The figures for atmospheric pollutants and water pollutants are total values for plants that are legally required to measure emissions.

\*3 The figure for amount of atmospheric emissions of VOCs is the total value for sites subject to reduction targets stipulated in the Medium-Term Environmental Plan 2015.

Relevant Information ● Standards for Calculating Environmental Data  
▶ P. 47-48



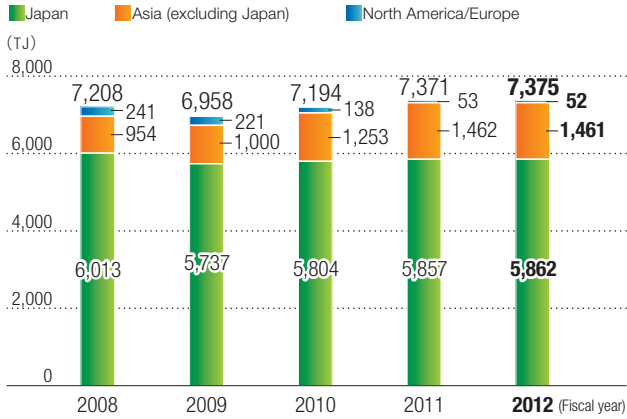


# INPUT

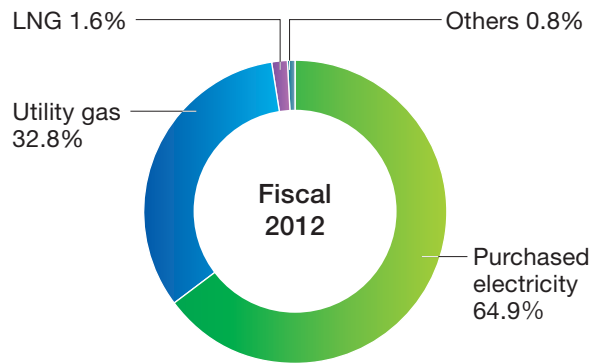
## Energy and Water

Boundary of data: Charts cover production and R&D sites in the Konica Minolta Group.

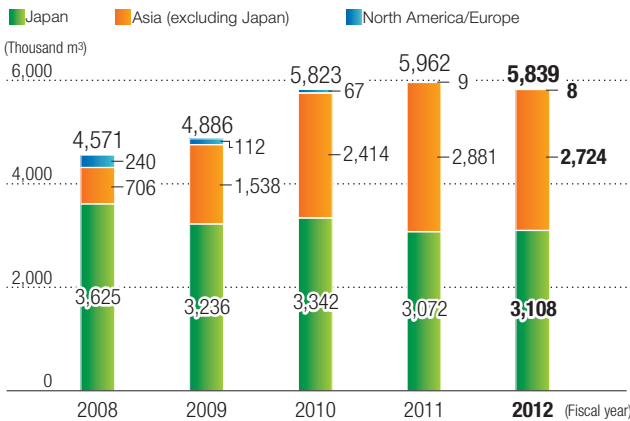
### Total Energy Inputs



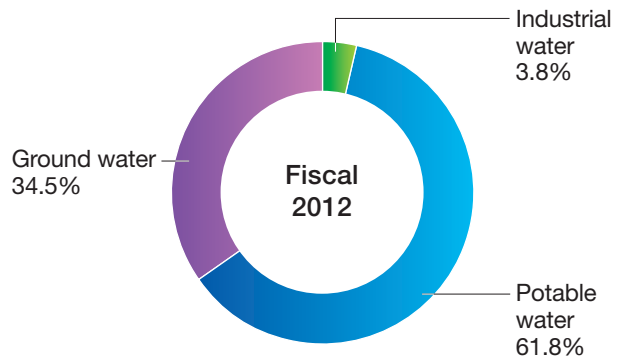
### Energy Use by Type



### Total Water Inputs



### Water Use by Type



Relevant Information ● Standards for Calculating Environmental Data  
▶ P. 47-48

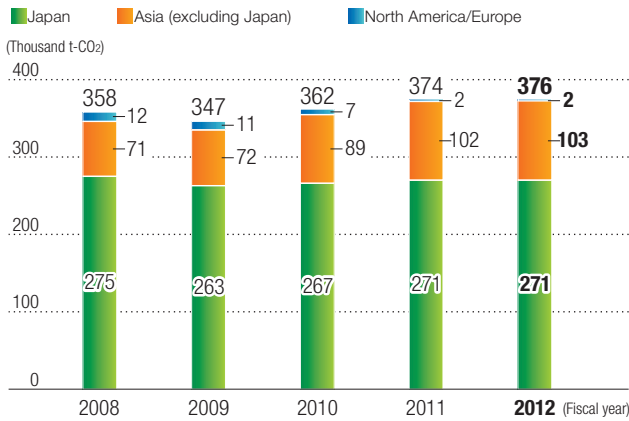


# OUTPUT

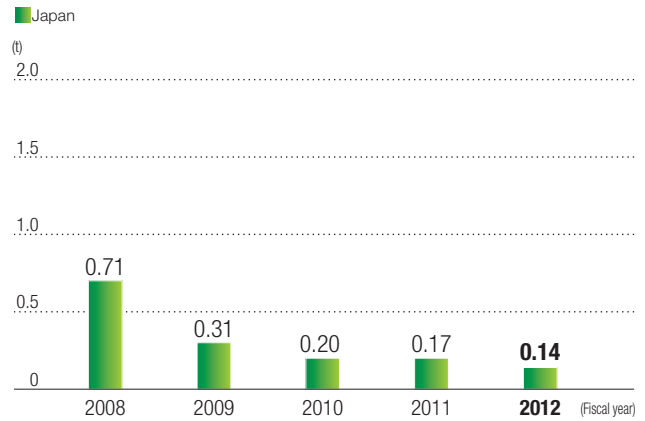
## Atmosphere

Boundary of data: Charts cover production and R&D sites in the Konica Minolta Group.

### CO<sub>2</sub> Emissions

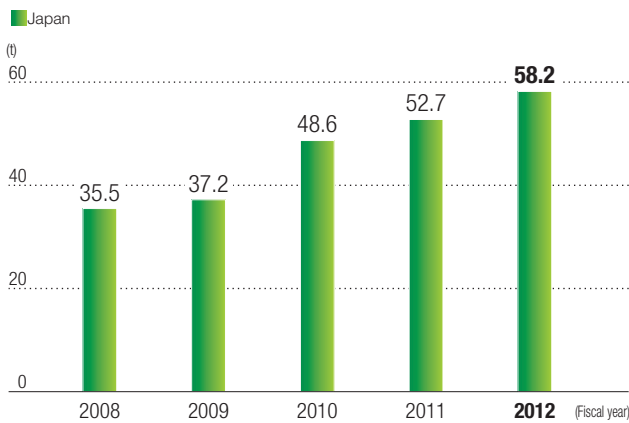


### SO<sub>x</sub> Emissions

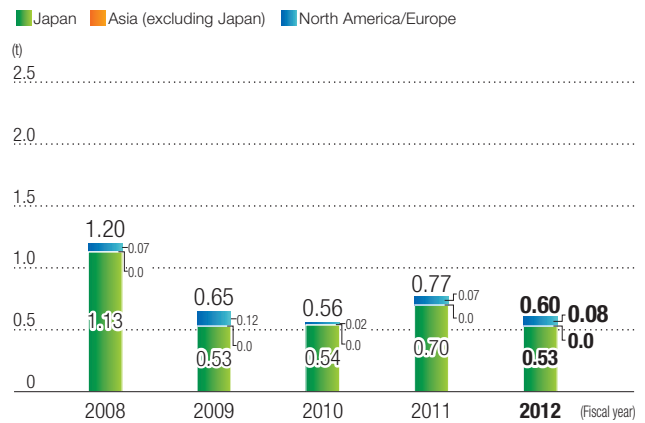


Relevant Information ● Standards for Calculating Environmental Data  
▶ P. 47-48

### NO<sub>x</sub> Emissions



### Soot and Dust Emissions



\* The figures for atmospheric pollutants are total values for plants that are legally required to measure emissions.

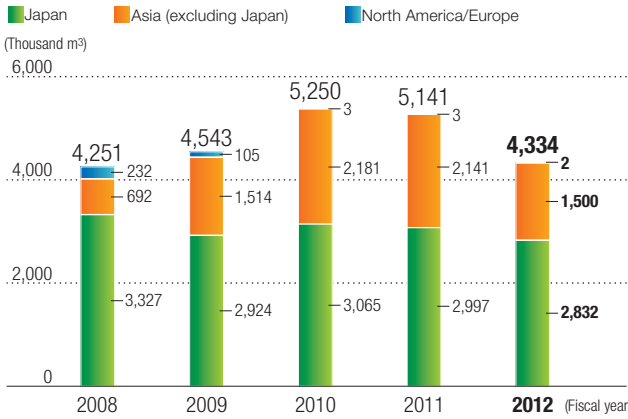


OUTPUT

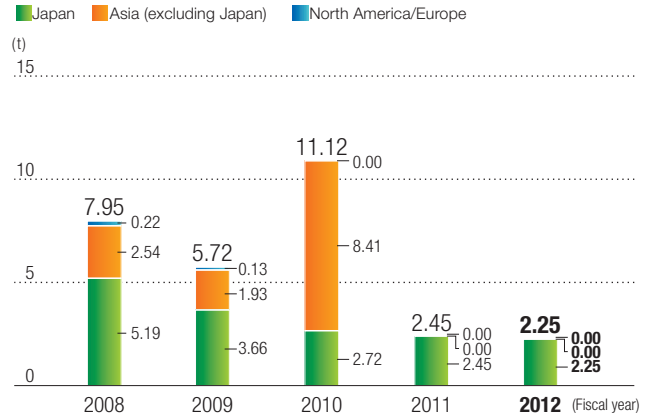
Wastewater

Boundary of data: Charts cover production and R&D sites in the Konica Minolta Group.

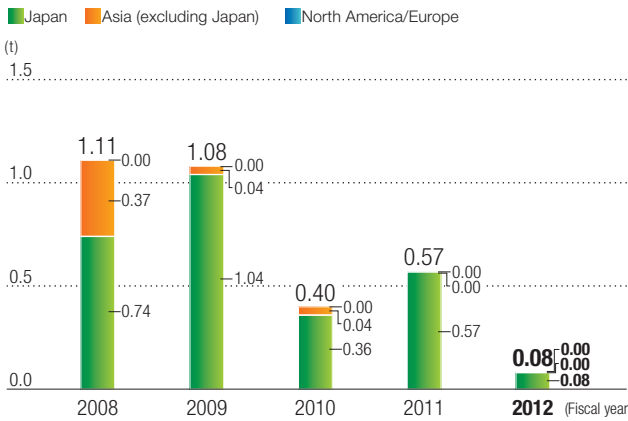
Total Wastewater



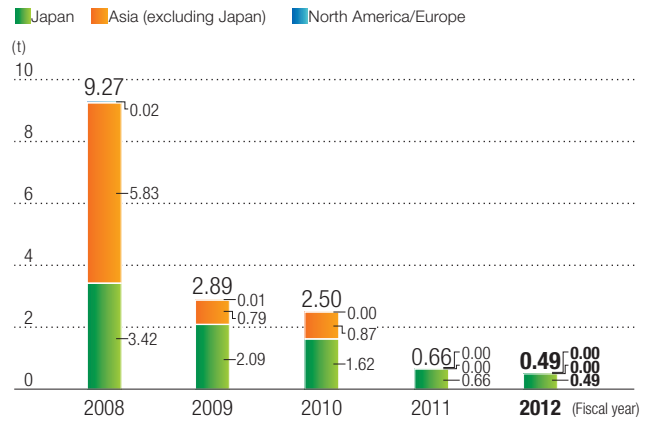
COD into Public Waters



Phosphorus Discharged into Public Waters



Nitrogen Discharged into Public Waters



\* The figures of water pollutants are total values for plants that are legally required to measure waste.

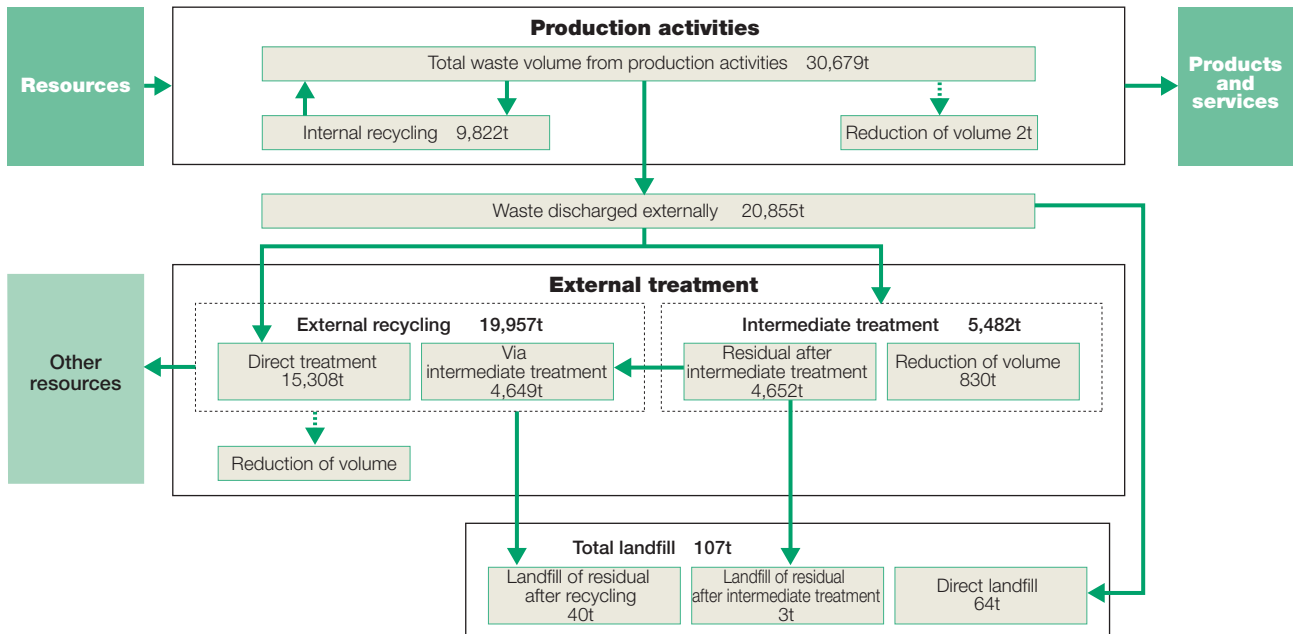


OUTPUT

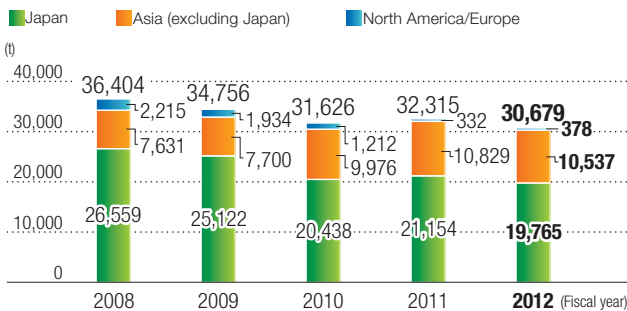
Waste

Boundary of data: Charts cover production and R&D sites in the Konica Minolta Group.

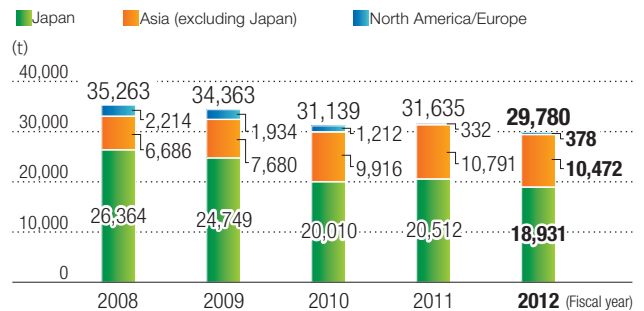
Waste Flows (Results of Recycling and Waste) Fiscal 2012



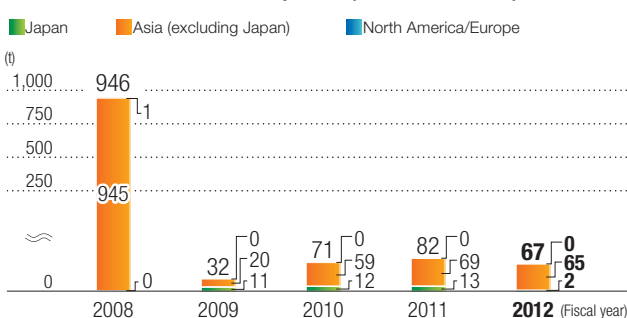
Total Waste Volume



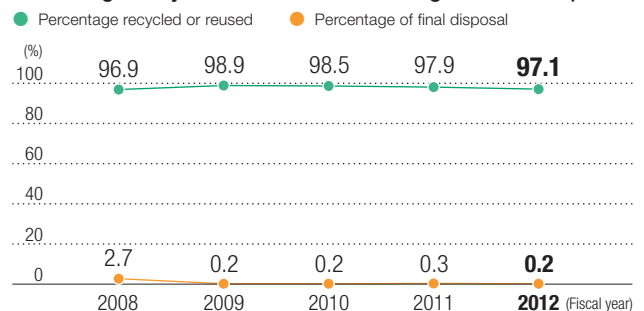
Total Volume of Recycled Resources (Internally and Externally Recycled)



Total Volume of Final Disposal (Landfill Waste)\*



Percentage Recycled or Reused/Percentage of Final Disposal



\* The figures are the sum of direct landfill and landfill of residual after intermediate treatment.

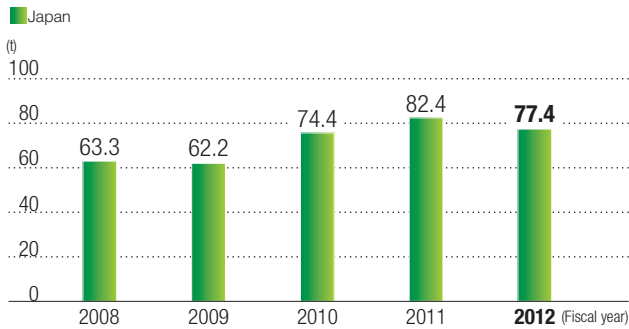


OUTPUT

**Chemical Substances**

Boundary of data: Charts cover Konica Minolta Group production sites in Japan.

**Atmospheric Emissions of PRTR Substances**



\* Fiscal 2011 errors have been corrected.

**Substances Controlled by Pollution Release and Transfer Register (PRTR) System Fiscal 2012**

(t)

Identification Number	Name of Chemical Substance	Amount Handled	Releases			Amount Used (in products)	Treated On-Site (Incinerated, Decomposed)	Amount Transferred Externally		Recycled
			To Air	To Water	To Soil			Waste*	Sewage	
7	N-butyl acrylate	1751.3	1.2	0.0	0.0	1738.2	0.0	11.9	0.0	0.0
13	Acetonitrile	48.7	2.4	0.0	0.0	0.1	4.4	41.8	0.0	0.0
23	P-aminophenol	4.7	0.0	0.0	0.0	4.7	0.0	0.0	0.0	0.0
31	Antimony and its compounds (Sb equivalent)	2.5	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0
71	Ferric chloride	101.6	0.0	0.0	0.0	0.0	101.6	0.0	0.0	0.0
81	Quinoline	5.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82	Silver and its water-soluble compounds (Ag equivalent)	99.9	0.0	0.0	0.0	94.8	0.0	5.0	0.0	0.1
181	Dichlorobenzene	2.5	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.0
186	Dichloromethane (also known as methylene chloride)	768.6	60.4	0.0	0.0	13.0	0.0	691.2	0.0	4.1
232	N,N-dimethylformamide	26.3	0.0	0.0	0.0	0.0	0.3	26.0	0.0	0.0
240	Styrene	4676.8	4.9	0.0	0.0	4632.9	0.0	39.0	0.0	0.0
275	Sodium dodecyl sulfate	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
300	Toluene	72.6	8.0	0.0	0.0	0.5	0.3	63.7	0.0	0.0
342	Pyridine	1.7	0.0	0.0	0.0	0.2	0.0	1.5	0.0	0.0
353	Diethyl phthalate	2.8	0.0	0.0	0.0	2.6	0.0	0.2	0.0	0.0
392	N-hexane	21.5	0.1	0.0	0.0	0.0	0.1	21.4	0.0	0.0
395	Water-soluble salts of peroxodisulfuric acid	148.1	0.0	0.0	0.0	15.0	133.3	0.0	0.0	0.0
405	Boron compound (B equivalent)	1.3	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0
412	Manganese and its compounds (Mn equivalent)	230.9	0.0	0.0	0.0	230.9	0.0	0.0	0.0	0.0
415	Methacrylic acid	890.9	0.4	0.0	0.0	686.9	0.0	3.5	0.0	0.0
417	2,3-epoxypropyl methacrylate	1.6	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0
461	Triphenyl phosphate	31.8	0.0	0.0	0.0	31.7	0.0	0.0	0.0	0.0

\* In accordance with PRTR system definitions, even if materials were recycled later, they were counted here as waste if they were not sold at a profit.



# Environmental Data by Site

## Konica Minolta Sites in Japan (fiscal 2012)

Name/Location	Major Operation	CO <sub>2</sub> Emissions (Thousand t-CO <sub>2</sub> )	Waste Discharged Externally (t)	Total Volume of Final Disposal (t)	Total Water Use (Thousand m <sup>3</sup> )			Wastewater (Thousand m <sup>3</sup> )
					Ground Water (Thousand m <sup>3</sup> )	Industrial Water (Thousand m <sup>3</sup> )	Potable Water (Thousand m <sup>3</sup> )	
Tokyo Site, Hino Block (Hino, Tokyo)	Development and manufacturing of office equipment, healthcare equipment, optical products, industrial inkjet and other products	35.1	1,204	0.0	482.9			436.4
					482.9	—	—	
Tokyo Site, Hachioji Block (Hachioji, Tokyo)	Development and manufacturing of office equipment, optical products, healthcare equipment and other products	16.5	609	0.0	125.6			121.1
					113.5	—	12.1	
Kofu Site (Kofu, Yamanashi)	Manufacturing of healthcare equipment products	5.9	552	0.0	85.2			51.3
					65.6	—	19.6	
Atsugi Site (Atsugi, Kanagawa)	Software development and testing for office equipment products; provision of technical training for sales personnel	0.5	27	0.5	4.6			4.6
					—	—	4.6	
Mizuho Site (Toyokawa, Aichi)	Development and manufacturing of office equipment-related products	5.2	365	0.7	23.7			21.9
					—	—	23.7	
Mikawa Site (Toyokawa, Aichi)	Development of office equipment-related products	0.9	75	0.0	10.6			9.5
					—	—	10.6	
Toyokawa Site (Toyokawa, Aichi)	Production management and manufacturing of office equipment-related products	0.4	19	0.2	5.8			5.2
					—	—	5.8	
Osakasayama Site (Osakasayama, Osaka)	Development and manufacturing of optical products	8.4	111	0.0	163.0			152.0
					—	—	163.0	
Sakai Site (Sakai, Osaka)	Development, manufacturing and sales of measuring instruments for industrial applications	1.4	37	0.3	25.3			25.3
					15.9	—	9.4	
Itami Site (Itami, Hyogo)	Development and manufacturing of optical products; office equipment software development	5.8	270	0.0	23.5			18.8
					—	—	23.5	
Takatsuki Site (Takatsuki, Osaka)	Research and development; intellectual property management and operation, industrial design	1.3	17	0.0	12.2			8.1
					—	—	12.2	
Kobe Site, Seishin Site, Kobe 2nd Site (Kobe, Hyogo)	Manufacturing of electronic materials (TAC films)	155.6	3,424	0.0	790.5			591.4
					243.4	—	547.2	



Environmental Data by Site

Affiliate Production Sites in Japan (fiscal 2012)

Name/Location	Major Operation	CO <sub>2</sub> Emissions (Thousand t-CO <sub>2</sub> )	Waste Discharged Externally (t)	Total Volume of Final Disposal (t)	Total Water Use (Thousand m <sup>3</sup> )			Wastewater (Thousand m <sup>3</sup> )
					Ground Water (Thousand m <sup>3</sup> )	Industrial Water (Thousand m <sup>3</sup> )	Potable Water (Thousand m <sup>3</sup> )	
Konica Minolta Supplies Manufacturing Co., Ltd. (Kofu, Yamanashi)	Consumables of multi-functional peripherals (MFPs) and laser printers	12.3	546	0.0	398.7			398.7
					379.7	—	19.0	
Konica Minolta Supplies Manufacturing Co., Ltd., Tatsuno Site (Tatsuno, Nagano)	Consumables of multi-functional peripherals (MFPs) and laser printers	6.2	958	0.2	297.1			297.1
					296.8	—	0.2	
Konica Minolta Supplies Manufacturing Kansai Co., Ltd., Miki Site (Miki, Hyogo)	Consumables of multi-functional peripherals (MFPs) and laser printers	1.4	13	0.0	3.6			1.6
					—	—	3.6	
Toyohashi Precision Products Co., Ltd. (Toyohashi, Aichi)	Consumables of multi-functional peripherals (MFPs) and laser printers	1.5	207	0.5	58.5			104.2
					56.6	—	1.9	
Konica Minolta Electronics Co., Ltd. (Tsuru, Yamanashi)	Electronics parts	0.9	75	0.0	6.6			6.6
					—	—	6.6	
Konica Minolta Opto Products Co., Ltd., Kofu Site (Fuefuki, Yamanashi)	Optical devices	5.3	91	0.0	354.6			354.6
					354.6	—	—	
Konica Minolta Opto Products Co., Ltd., Yamanashi Site (Minamitsuru, Yamanashi)	Optical devices	0.2	0	0.0	0.1			0.1
					—	—	0.1	
Konica Minolta Glass Tech. Co., Ltd., Iruma Site (Iruma, Saitama)	Optical devices	2.0	144	0.0	80.7			80.7
					—	—	80.7	
Konica Minolta Technoproducts Co., Ltd., Sayama Site (Sayama, Saitama)	Healthcare equipment, printing systems	1.8	108	0.0	10.2			10.2
					—	—	10.2	
Konica Minolta Chemical Co., Ltd., Shizuoka Site (Fukuroi, Shizuoka)	Chemicals	2.4	1,734	0.1	144.8			132.5
					—	143.8	1.1	

Affiliate Production Sites outside Japan (fiscal 2012)

Name/Location	Major Operation	CO <sub>2</sub> Emissions (Thousand t-CO <sub>2</sub> )	Waste Discharged Externally (t)	Total Volume of Final Disposal (t)	Total Water Use (Thousand m <sup>3</sup> )			Wastewater (Thousand m <sup>3</sup> )
					Ground Water (Thousand m <sup>3</sup> )	Industrial Water (Thousand m <sup>3</sup> )	Potable Water (Thousand m <sup>3</sup> )	
Konica Minolta Business Technologies (Wuxi) Co., Ltd. (Wuxi, China)	Multi-functional peripherals (MFPs), laser printers and consumables	11.2	2,341	0.6	75.5			64.2
					—	75.5	—	
Konica Minolta Business Technologies (Dongguan) Co., Ltd. (Dongguan, China)	Multi-functional peripherals (MFPs), laser printers and consumables	13.7	3,011	0.9	160.0			160.0
					—	—	160.0	
Konica Minolta Supplies Manufacturing U.S.A., Inc. (New York, United States)	Consumables of multi-functional peripherals (MFPs) and laser printers	1.4	186	0.0	6.5			0.8
					3.6	1.0	1.9	
Konica Minolta Supplies Manufacturing France S.A.S. (Lorraine, France)	Consumables of multi-functional peripherals (MFPs) and laser printers	0.6	191	0.0	1.1			1.6
					—	—	1.1	
Konica Minolta Opto (Dalian) Co., Ltd. (Dalian, China)	Optical devices	31.6	340	4.0	173.0			147.1
					—	—	173.0	
Konica Minolta Optical Products (Shanghai) Co., Ltd. (Shanghai, China)	Optical devices	16.6	67	0.0	105.2			94.7
					—	—	105.2	
Konica Minolta Glass Tech (M) Sdn. Bhd. (Malacca, Malaysia)	Optical devices	30.0	4,133	59.4	2,209.9			1,034.3
					—	—	2,209.9	



# Standards for Calculating Environmental Data

## CO<sub>2</sub> Emissions

Stage		Methods of Calculation
1. Procurement	1) Boundary	Office equipment and consumables, optical products and healthcare equipment manufactured and sold by Konica Minolta, Inc.
	2) Standards	Calculated by multiplying the sales amount or production amount of office equipment and consumables by a cradle-to-gate CO <sub>2</sub> emission factor for each of the materials that make up a product; and for other products, multiplying the amount of material used by a cradle-to-gate CO <sub>2</sub> emission factor for that material.
2. Production/R&D	1) Boundary	All production and R&D sites around the world
	2) Standards	CO <sub>2</sub> emissions are calculated by multiplying the amount of energy used at each site by the following coefficients. <ul style="list-style-type: none"> <li>•Fuel: Coefficients stipulated in Japan's Act on Promotion of Global Warming Countermeasures</li> <li>•Electricity in Japan: Fiscal 2005 average value of all electrical power sources, as specified by the Federation of Electric Power Companies of Japan</li> <li>•Electricity outside Japan: Fiscal 2005 emissions coefficients applicable to each country, as specified by the GHG Protocol</li> </ul>
3. Distribution	1) Boundary	Japanese domestic distribution, Chinese production distribution (from factory to port), and international distribution of office equipment, optical products, equipment for healthcare system
	2) Standards	CO <sub>2</sub> emissions are calculated by multiplying transport distance by cargo weight, and then multiplying that value by the CO <sub>2</sub> emissions coefficient of each means of transportation. <ul style="list-style-type: none"> <li>•Chinese production distribution and international distribution: Coefficients specified by the GHG Protocol</li> <li>•Japanese domestic distribution: Coefficients stipulated in Japan's CO<sub>2</sub> Emissions Calculation Method for Logistics Operations—Joint Guidelines Ver.3.0</li> </ul>
4. Sales and service	1) Boundary	Major sales companies around the world
	2) Standards	Offices: CO <sub>2</sub> emissions are calculated by multiplying the amount of energy used at main sites (including estimated values for some sites) by the following coefficients. Fuel: Coefficients stipulated in Japan's Act on Promotion of Global Warming Countermeasures Electricity in Japan: 2005 average value of all electrical power sources, as specified by The Federation of Electric Power Companies of Japan Electricity outside Japan: 2005 emissions coefficients applicable to each country, as specified by the GHG Protocol  Vehicles: CO <sub>2</sub> emissions are calculated by multiplying the amount of vehicle fuel used by the following coefficients. Fuel: Coefficients stipulated in Japan's Act on Promotion of Global Warming Countermeasures
5. Usage	1) Boundary	Office equipment and equipment for healthcare system Optical products are excluded since they are used as parts of other companies' products
	2) Standards	CO <sub>2</sub> emissions are calculated by multiplying the number of units operating in the market (inferred from sales units each year and the life of the product) by the estimated annual amount of electrical consumption*1 for each model and the CO <sub>2</sub> coefficient equal to the fiscal 2005 world average value specified by the GHG Protocol.

\*1 The annual amount of electrical consumption for office equipment is estimated based on the Typical Electricity Consumption (TEC) value set by the International Energy Star Program, and for equipment for healthcare system it is estimated based on each product's specifications.

\* Figures in graphs may not add up to totals due to rounding.





## Standards for Calculating Environmental Data

### Emissions Other Than CO<sub>2</sub>

Item		Methods of Calculation
1. Petroleum-based resource usage in products	1) Boundary	Office equipment and consumables, optical products and healthcare equipment manufactured and sold by Konica Minolta, Inc.*1
	2) Standards	Calculated by multiplying the raw material or part weight by content percentage of petroleum-based resources set for each material, based on the product specification
2. Packaging materials usage	1) Boundary	Raw materials and parts used in packaging for office equipment and consumable supplies, optical products and equipment for healthcare system
	2) Standards	Calculated by multiplying the weight of packaging material per single product (based on product specifications, etc.) by the number of units of the product sold, based on sales results
3. Waste discharged externally from manufacturing	1) Boundary	All production and R&D sites around the world
	2) Standards	The total actual weight of waste discharged externally from production*2
4. Final disposal	1) Boundary	All production and R&D sites around the world
	2) Standards	The total weight of final disposal*3 (Weight of waste discharged externally from production × Percentage of final disposal*4)
5. Atmospheric emissions of VOCs	1) Boundary	Production sites around the world with ten or more environmental impact index*5 points, when points are added for every compound that is rated of one point or more.
	2) Standards	The sum of the environmental impact index for atmospheric emissions of VOCs*6
6. Water consumption	1) Boundary	All production and R&D sites around the world
	2) Standards	The total amount of water intake (potable water, ground water, industrial water)

\*1 The boundaries for some figures are slightly different between those shown in the Overall Picture of Environmental Impact and those used in the calculation of the petroleum-based resource usage.

\*2 Of the waste (refuse, etc.) generated at production and research and development sites for which Konica Minolta has responsibility as generator of waste, the amount discharged outside the Konica Minolta site. However, some wastes unrelated to production are excluded.

\*3 Except for residues after recycling

\*4 Percentage of final disposal are calculated based on the value from industrial waste disposal companies.

\*5 **Environmental impact index:** An index unique to Konica Minolta.  
 Environmental impact index (point) = Atmospheric emissions of VOCs [t] × Hazard coefficient × Location coefficient  
**Hazard coefficient:** Set at 1-fold, 10-fold, or 100-fold depending on the severity of the impact on human health and the environment (set independently by Konica Minolta based on the coefficient used in the safety evaluations conducted by Kanagawa Prefecture in Japan)  
**Location coefficient:** Outside the industrial estate 5, inside the industrial estate 1

\*6 The overall picture of environmental impact does not take into account the hazard coefficient and location coefficient, and the atmospheric emissions are shown as is.

\* The petroleum-based resource usage, for which reduction targets are set in the Medium-Term Environmental Plan, is calculated by taking the total amount of (1) petroleum-based resource usage in products; (2) petroleum-based resource waste in waste discharged externally from manufacturing; and (3) fuel consumption of sales and service vehicles.

\* Figures in graphs may not add up to totals due to rounding.



# Management of Chemical Substances

## Surveys and Measures Taken on Soil and Groundwater Contamination

### Summary of Contaminated Soil or Ground Water at Operation Sites

Operation Site	Substances	Progress in Fiscal 2012
Tokyo Site, Hino Block (Hino, Tokyo)	Fluorine, Boron, Mercury, Benzen	The company makes periodic observations at monitoring wells located at the site boundary. It has been confirmed that specified hazardous substances with a history of use are all below the limit of environmental standard values, and have no impact on the surrounding environment. With a plan to remove buildings, the company performed a survey of the soil on the site in accordance with Tokyo Metropolitan Ordinance, and found benzene in excess of the standard value, although there was no contamination of ground water. The company has implemented follow-up surveys to determine the proper countermeasures to take.
Tokyo Site, Hachioji Block (Hachioji, Tokyo)	Hexavalent chromium	The company continues with measures for remediation and prevention of dispersion by pumping ground water taken from wells located within the site. Through continued periodic observation of ground water, the company has confirmed that there is no runoff from the site.
Kofu Site (Chuo, Yamanashi)	Fluorine	Upon building new buildings, the company performed a survey of the soil on the site in accordance with laws, and found fluorine slightly exceeding the standard value, although there was no contamination of ground water. The company will continue with periodic observation to confirm that there is no ground water contamination on the site.
Mikawa Site, Western Zone (Toyokawa, Aichi)	TCE*1, Fluorine	Since implementing excavation and removal of soil contaminated with TCE in fiscal 2010, the concentrations in ground water have been below the limit of environmental standard values in the western part of the site. Through continued periodic observation of ground water, the company has confirmed that there is no runoff of fluorine from the site.
Itami Site (Itami, Hyogo)	Lead, Arsenic, Cadmium, Fluorine, Boron	Regarding the boron exceeding the standard value in the ground water found in a specific area of the site, the company continues with remediation and prevention of dispersion of the contaminant through pumping, and has confirmed that there is no runoff from the site. Regarding lead, arsenic, cadmium, and fluorine, the company has performed observation of ground water to confirm that there is no runoff of these substances from the site.
Sakai Site (Sakai, Osaka)	TCE, PCE*2, c-DCE*3, Lead, Arsenic, Cadmium	Regarding TCE, PCE, and c-DCE, the company continues with remediation prevention of dispersion by pumping ground water and carries out preventing runoff from the site. Regarding lead, arsenic, and cadmium, the company performed periodic observation of the ground water. It confirmed that the concentrations are below the limit of environmental standard values in all the monitoring wells located at the site boundary, and have no impact on the surrounding environment.
Osakasayama Site (Osakasayama, Osaka)	TCE, PCE, c-DCE	Since fiscal 2011, the company has been implementing remediation of the location where contamination was found around its effluent treatment facility, by mixing and kneading iron powder based on the Jet Rinse method. The company has implemented continued periodic observation of ground water to verify the effectiveness of this method, and has confirmed a significant improvement in the downstream area of the location.
Site of the former Nankai Optical Co., Ltd. (Kainan, Wakayama)	TCE, PCE, c-DCE	The company continued with measures to prevent runoff using the bio fence method. Through the observation of ground water, the company has confirmed that there is no runoff from the site.
Toyohashi Precision Products Co., Ltd. (Toyohashi, Aichi)	TCE, PCE, c-DCE, Hexavalent Chromium	The company continued with remediation of ground water through pumping, and continued periodic observation to confirm that there is no runoff of the relevant substances from the site. Levels for TCE, PCE, and c-DCE are within the environmental standard values at many monitoring wells.
Konica Minolta Opto Products Co., Ltd. (Fuefuki, Yamanashi)	TCE, PCE, c-DCE	The company has implemented remediation of ground water through pumping, permeable reactive barriers, and bio-barriers, and continued periodic observation to confirm that there is no runoff of the relevant substances from the site.
Konica Minolta Supplies Manufacturing Co., Ltd. (Kofu, Yamanashi)	TCE, PCE, c-DCE	The company verified the effects of remediation of ground water through bioremediation implemented so far and is considering implementing new methods of bioremediation.

\*1 TCE: trichloroethylene

\*2 PCE: tetrachloroethylene (perchloroethylene)

\*3 c-DCE: cis-1,2-dichloroethylene (resolvent of TCE and PCE)



# CO<sub>2</sub> Emissions across the Entire Supply Chain

## Calculating CO<sub>2</sub> Emissions across the Entire Supply Chain

Konica Minolta has calculated the entire CO<sub>2</sub> emissions associated with the Group's activities across its entire supply chain, from the upstream to the downstream of its operations, based generally on the standards of the GHG Protocol\*, the international standard. The calculation showed that CO<sub>2</sub> emissions throughout the supply chain in fiscal 2012 were approximately 1.507 million tons.

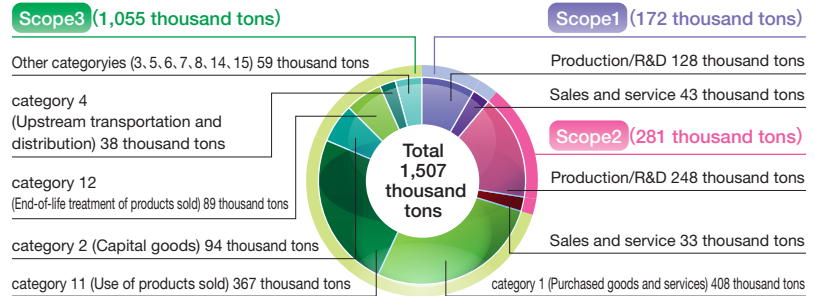
Emissions from the Group's activities—that is, direct emissions from fuel use (Scope 1) plus indirect emissions from consumption of purchased electricity, heat or steam (Scope 2)—total approximately 453 thousand tons, or about 30% of all emissions. Other indirect emissions (Scope 3) associated with the Group's activities totaled approximately 1.055 million tons, accounting for about 70%.

Categories within Scope 3 with high emissions were purchased goods and services (27.1%) and use of products sold (24.3%). These categories are within the scope of its previous calculations, but the Group has now discovered new challenges,

including the need to set emissions reduction targets for purchased goods and services and to thoroughly manage appropriate measures. Konica Minolta will share information with relevant stakeholders in the future based on these calculation results and move forward with CO<sub>2</sub> emissions management and reduction activities throughout the supply chain.

\* GHG Protocol: guidelines on calculating and reporting greenhouse gas emissions

### Overall picture of CO<sub>2</sub> Emissions across the Entire Supply Chain



\* Totals may not add up, since figures have been rounded.

### Calculation Result of Each Category

Category	Overview	CO <sub>2</sub> Emissions (t)	Percentage of Total (%)	
Scope 1	Production/R&D	128,327	8.5%	11.4%
	Sales and service	43,350	2.9%	
Scope 2	Production/R&D	247,792	16.4%	18.6%
	Sales and service	33,031	2.2%	
Scope 3	1 Purchased goods and services	408,057	27.1%	70.0%
	2 Capital goods	93,803	6.2%	
	3 Fuel- and energy-related activities	8,998	0.6%	
	4 Upstream transportation and distribution	38,280	2.5%	
	5 Waste generated in operations	18,681	1.2%	
	6 Business travel	22,977	1.5%	
	7 Employee commuting	4,457	0.3%	
	8 Upstream leased assets	137	0.0%	
	9 Downstream transportation and distribution	—	—	
	10 Processing of products sold	—	—	
	11 Use of products sold	366,545	24.3%	
	12 End-of-life treatment of products sold	89,203	5.9%	
	13 Downstream leased assets	*	*	
	14 Franchises	533	0.0%	
	15 Investments	3,127	0.2%	
Total		1,507,300	100.0%	100.0%

\* Included in category 11

Note: Totals may not add up, since figures have been rounded.



## CO<sub>2</sub> Emissions across the Entire Supply Chain

### Method of Calculation in Each Category of **Scope3** Emissions

Category	Overview	Method of Calculation
1	Purchased goods and services	Calculated by multiplying the sales amount or production amount of office equipment and consumables by a cradle-to-gate CO <sub>2</sub> emission factor for each of the materials that make up a product; and for other products, multiplying the amount of material used by a cradle-to-gate CO <sub>2</sub> emission factor for that material.
2	Capital goods	Calculated by multiplying the amount of investment in capital goods purchased over the year by a CO <sub>2</sub> emission factor per investment value.
3	Fuel- and energy-related activities	Calculated for emissions from the extraction, production, and transportation of fuels purchased by the Group or by electricity producers for the electricity purchased by the Group. (Fuel) Calculated by multiplying the annual purchased volume by a cradle-to-gate CO <sub>2</sub> emission factor for each type of fuel. (Fuels purchased and used by electricity producers) Calculated by multiplying the annual purchased volume of electricity by source, by a CO <sub>2</sub> emission factor for each source. Proportion of sources in electricity generation for each country is identified from the Proportions of Generated Power by Source in Major Countries, published by the Federation of Electric Power Companies of Japan.
4	Upstream transportation and distribution	Calculated for emissions related to shipping and distribution internationally, within Japan, and within China. Calculated by multiplying transport distance by cargo weight, and then multiplying that value by the CO <sub>2</sub> emission factor for each means of transportation.
5	Waste generated in operations	Calculated for waste (not including valuables) from production, R&D, and sales offices. Calculated by classifying waste into different types and multiplying the amount of each type of waste entrusted to a party outside the company by a CO <sub>2</sub> emission factor for each method of waste disposal.
6	Business travel	For business travel by employees of Group companies in Japan, the emissions are calculated by multiplying the annual business travel expenditure by a CO <sub>2</sub> emission factor per expense for travel for each means of transportation. The CO <sub>2</sub> emission factor used is that for travel by domestic air flight in Japan, which is the highest among the emission factors for all methods of travel. For Group companies outside Japan, it is estimated by multiplying the number of employees of each company by the emission amount per employee calculated based on the result in Japan.
7	Employee commuting	Calculated by multiplying the annual commutation cost by a CO <sub>2</sub> emission factor per expense. The CO <sub>2</sub> emission factor used is for "automobiles (buses and ride-sharing in sales vehicles)," which is the highest among the emission factors for all commuting methods. For Group companies outside Japan, it is estimated by multiplying the number of employees of each company by the emission amount per employee calculated based on the result in Japan.
8	Upstream leased assets	Most leased assets are calculated as Scope 1 and 2 emissions. Scope 3 applies only to some leased assets (e.g., data centers). Calculated by multiplying the actual annual power consumption for the leased servers by a CO <sub>2</sub> emission factor for electrical power.
9	Downstream transportation and distribution	Konica Minolta has sales bases in 41 countries and runs its business mainly through direct sales. Emissions from the sales activities of some dealers fall under this category, but the amount of those emissions is thought to be minuscule. Moreover, since most dealers handle products from multiple manufacturers, it would be extremely difficult to identify and calculate emissions related to the sale of Konica Minolta's products. Accordingly, the Group has decided to exclude this category from the scope of calculations for the present.
10	Processing of products sold	Konica Minolta's product lineup includes semi-finished products, which accounted for approximately 18% of sales in fiscal 2012. However, it is difficult to rationally calculate emissions related to the processing of these products. Accordingly, the Group has decided to exclude this category from the scope of calculations for the present.
11	Use of products sold	Calculated by multiplying the number of units operating in the market (inferred from sales units each year and the life of the product) by the estimated annual amount of electrical consumption for each model and the CO <sub>2</sub> coefficient equal to the fiscal 2005 world average value specified by the GHG Protocol. The calculation method used by Konica Minolta is slightly different from the GHG Protocol method, but it enables the Group to calculate the emissions that more accurately reflect the Group's business operations and thus allows it to implement initiatives to reduce CO <sub>2</sub> emissions smoothly. If the calculation were made by the GHG Protocol method, which requires accounting for the total expected lifetime emissions of end users in the applicable sales year, the result would be approximately 60,000 tons less than the amount calculated by the method used by Konica Minolta.
12	End-of-life treatment of products sold	Calculated for emissions related to the end-of-life treatment of products themselves and their containers and packaging. Calculated by multiplying the weight of materials that make up the products sold by a CO <sub>2</sub> emission factor for each type of disposal method. The calculation is made for anticipated future emissions from the end-of-life treatment of products sold in the previous fiscal year, which will be reported as the data of that fiscal year.
13	Downstream leased assets	Calculated as part of category 11.
14	Franchises	Emissions from Kinko's franchises in Hiroshima and Kyushu are applicable to this category. Calculated based on the proportion of employees, based on energy usage in fiscal 2012 at the head office of Kinko's Japan Co., Ltd.
15	Investments	Calculated for a portion of emissions from the 27 main companies in its investment portfolio, in which Konica Minolta holds specified investment stocks. Calculated by multiplying the invested companies' fiscal 2011 CO <sub>2</sub> emissions by Konica Minolta's shareholding ratio (%) in those companies (number of shares held by Konica Minolta / number of shares issued).

\* The annual amount of electrical consumption for office equipment is estimated based on the Typical Electricity Consumption (TEC) value set by the International Energy Star Program, and for equipment for healthcare system it is estimated based on each product's specifications.

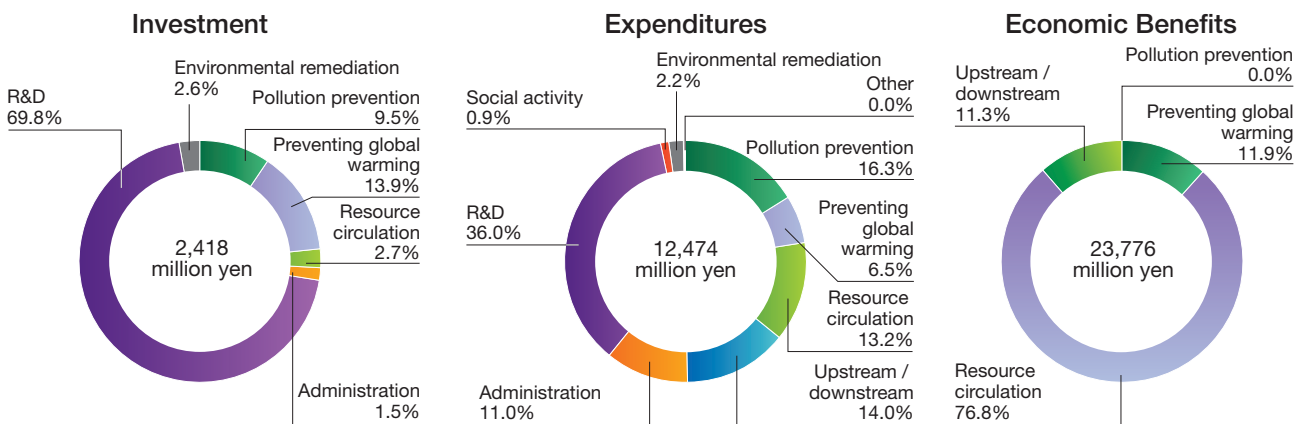


# Environmental Accounting

## Environmental Accounting

Konica Minolta has implemented global-scale, consolidated environmental accounting in order to quantitatively assess the costs of environmental preservation in business operations and the benefits obtained from those activities. Investments in fiscal 2012 totaled approximately 2.4 billion

yen, an 83% increase year on year. The increase mainly resulted from investment in equipment for production technology development in the field of performance materials. Expenditures totaled approximately 12.5 billion yen, virtually unchanged from the previous year.



\* Percentages do not necessarily total to 100 because of rounding.

million yen

Types of Environmental Conservation Activities	Major Initiatives	Fiscal 2012 Results			Fiscal 2013 Budget	
		Investment	Expenditures	Economic Benefits	Investment	Expenditures
1. Business area cost		630	4,480	21,085	319	4,027
1) Pollution prevention cost	Implemented wastewater treatment facilities maintenance, reduced atmospheric emission of VOCs, and carried out chemicals management	229	2,031	1	251	1,880
2) Preventing global warming cost	Promoted energy conservation	336	806	2,823	50	802
3) Resource circulation cost	Recovered solvents	66	1,643	18,260	19	1,345
2. Upstream/downstream costs	Collected and recycled products	0	1,747	2,691	0	1,691
3. Administration cost	Implemented environmental management systems	37	1,370	0	0	1,075
4. R&D cost	Developed energy-saving products and products containing no hazardous substances	1,688	4,485	0	1,049	5,065
5. Social activity cost	Implemented environmental conservation activities	0	114	0	0	114
6. Environmental remediation cost	Restored contaminated soil	63	274	0	70	312
7. Other costs		0	4	0	0	2
Total		2,418	12,474	23,776	1,439	12,284



## Environmental Accounting

### Fiscal 2012 Results: Environmental Conservation Benefits

Stage	Type of Benefit	Benefits
Production	Water use reduced *1	132,525 t
	Electricity reduced *1	141.2 million kWh
	Natural gas reduced *1	15,122 thousand m <sup>3</sup>
	Heavy oil reduced *1	98 thousand L
	Emissions of target chemical substances reduced *1	30 t
	Resource input reduced *1	131,298 t
	External recycling and reuse of waste *2	19,711 t
Sales	Packaging reduced *1	189 t
	Recycling and reuse of materials from used products *2	11,809 t
Usage	CO <sub>2</sub> emissions reduced *3	7,830 t-CO <sub>2</sub>

\*1 Calculated by subtracting the actual consumption amount from the consumption amount estimated for the case in which the environmental preservation activity was not implemented.

\*2 The environmental conservation benefits are calculated as the volume recycled and reused.

\*3 CO<sub>2</sub> emissions are calculated for major new products that were shipped in fiscal 2012 by subtracting the estimated CO<sub>2</sub> emissions associated with the new products in use from the estimated CO<sub>2</sub> emissions associated with the conventional products in use.

### Fiscal 2012 Results: Environmental Conservation Benefits (Impact of End User Usage)

Stage	Type of Benefit	Benefits
Usage	Electricity consumption reduced *4	15.6 million kWh
	Electricity bills reduced *5	225 million yen

\*4 Electricity consumption reduced is calculated for major new products that were shipped in fiscal 2012 by subtracting the estimated energy consumption of the new products in use from the estimated energy consumption of the conventional products in use.

\*5 Calculated by multiplying the average electrical power unit price over the Group's production sites in Japan by the amount of electricity consumption reduced.

### Boundary for Fiscal 2012 Results

Konica Minolta, Inc. (Former Konica Minolta Holdings, Inc., Konica Minolta Business Technologies, Inc., Konica Minolta Advanced Layers, Inc., Konica Minolta Opto, Inc., Konica Minolta Medical & Graphic, Inc., Konica Minolta Technology Center, Inc., Konica Minolta Business Expert, Inc., Konica Minolta IJ Technologies, Inc.)

#### 17 Japanese affiliates

Konica Minolta Planetarium Co., Ltd., Konica Minolta Information System Co., Ltd., Konica Minolta Supplies Manufacturing Co., Ltd., Konica Minolta Supplies Manufacturing Kansai Co., Ltd., Toyohashi Precision Products Co., Ltd., Konica Minolta Electronics Co., Ltd., Konica Minolta Business Solutions Japan Co., Ltd., Konica Minolta Chemical Co., Ltd., Konica Minolta Opto Products Co., Ltd., Konica Minolta Opto Device Co., Ltd., Konica Minolta Glass Tech. Co., Ltd., Konica Minolta Technoproducts Co., Ltd., Konica Minolta Healthcare Co., Ltd., Konica Minolta Technosearch Co., Ltd., Konica Minolta Engineering Co., Ltd., Konica Minolta Logistics Co., Ltd., Konica Minolta Sogo Service Co., Ltd.

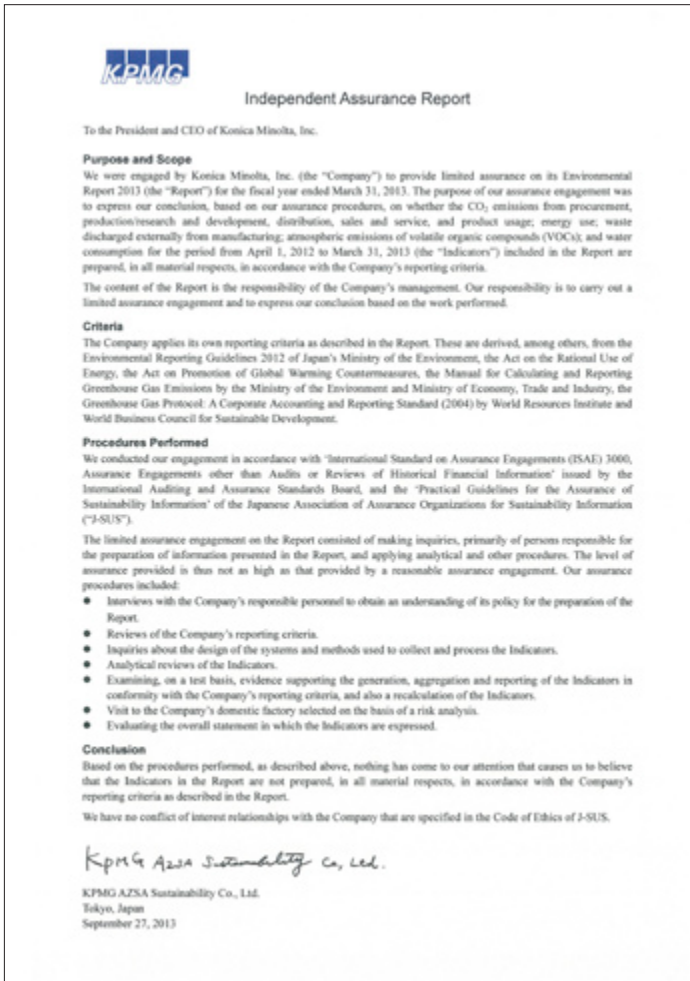
#### 19 affiliates outside Japan

Konica Minolta Business Technologies (Dongguan) Co., Ltd., Konica Minolta Business Technologies (Wuxi) Co., Ltd., Konica Minolta Business Solutions (China) Co., Ltd., Konica Minolta Supplies Manufacturing U.S.A., Inc., Konica Minolta Business Solutions U.S.A., Inc., Konica Minolta Business Solutions Europe GmbH, Konica Minolta Business Solutions Deutschland GmbH, Konica Minolta Business Solutions (UK) Ltd., Konica Minolta Supplies Manufacturing France S.A.S., Konica Minolta Business Solutions France S.A.S., Konica Minolta Business Solutions Australia Pty. Ltd., Konica Minolta Opto (Dalian) Co., Ltd., Konica Minolta Optical Products (Shanghai) Co., Ltd., Konica Minolta Opto (Shanghai) Co., Ltd., Konica Minolta Glass Tech (M) Sdn. Bhd., Konica Minolta Medical Imaging U.S.A., Inc., Konica Minolta Sensing Americas, Inc., Konica Minolta Sensing Europe B.V., Konica Minolta Sensing Singapore, Pte. Ltd.



# External Assurance

Konica Minolta engaged KPMG AZSA Sustainability Co., Ltd. to provide assurance on whether its CO<sub>2</sub> emissions from procurement, production/research and development, distribution, sales and service, and product usage; energy use; waste discharged externally from manufacturing; atmospheric emissions of volatile organic compounds (VOCs); and water consumption have been measured, gathered and disclosed in accordance with the criteria set by the Group.



Period: March to June 2013

On-site audit of Konica Minolta Tokyo Site, Hino



## Comments on the Assurance Process

Naomi Sugo KPMG AZSA Sustainability Co., Ltd.

Until now, Konica Minolta has disclosed Scope 3 emissions associated with the procurement of raw materials, distribution, and product use and has worked at reducing emissions associated with distribution and product use based on targets set for those areas. Now, the Group has ascertained and disclosed Scope 3 emissions for other categories, as well. I hope that the Group will disclose information in the future on initiatives it takes against the newly ascertained Scope 3 emissions.

This year, the Group disclosed its goals and performance related to the sales ratio of green products. I think that the data quantitatively show that green product initiatives help to create

both social and corporate value.

Meanwhile, although the CSR Report 2013 explains the Group's process for defining the report content, the material aspects identified in that process were not clearly listed. The GRI guidelines, revised in May 2013, now require organizations that wish to publish compliant reports to disclose not only the process for determining report content but also the material aspects and boundaries identified. I hope that the Group will consider disclosure methods in the future that provide increased transparency regarding material aspects in reporting.