



KONICA MINOLTA



KONICA MINOLTA
Environmental Report **2010**

Management Philosophy

The creation of new value

Management Vision

An innovative corporation that continues to create inspiring products and services in the field of imaging
A global corporation that leads the market by advanced technologies and reliability

Corporate Message

The essentials of imaging

The message represents our wish to be acknowledged as an essential company, by offering essential products, services and solutions to our customers in the world of imaging.

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Editorial Policy

Konica Minolta reports on its major environmental efforts in Konica Minolta CSR Report 2010, and posts information in more detail on the Web site. The Konica Minolta Environment Report 2010 is available in PDF format, with content focusing on the Group's basic concepts and on activities in FY2009.

Report Boundary

This report covers the entire Konica Minolta Group, including Konica Minolta Holdings, Inc., the Group's business companies and common function companies, and its affiliates. 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.

Reporting Period

In principle, the report covers activities from April 1, 2009 to March 31, 2010. Some sections may include information on earlier initiatives or more recent activities.

In this report, "fiscal 2009" refers to the fiscal year starting April 2009 and ending March 2010.

Publication Date

September 2010 (next report: scheduled for August 2011; previous report: October 2009)

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 2007 issued by the Ministry of the Environment (Japan).

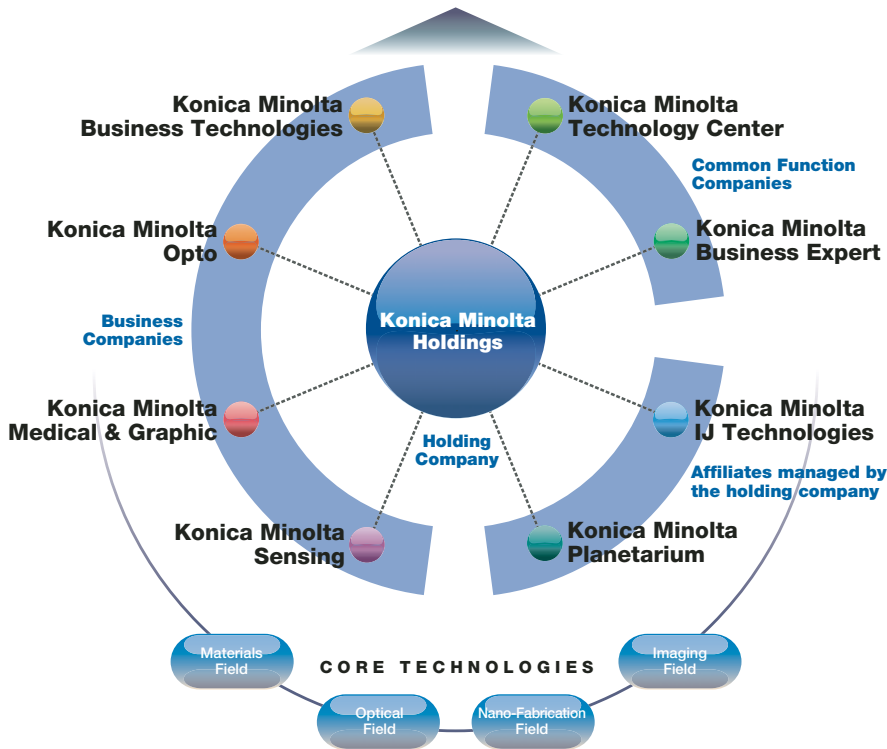
Disclaimer

In addition to facts about past or present circumstances, this report contains description 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



The creation of new value



The Konica Minolta Group consists of business companies, common function companies, and other affiliates under the holding company Konica Minolta Holdings, Inc.

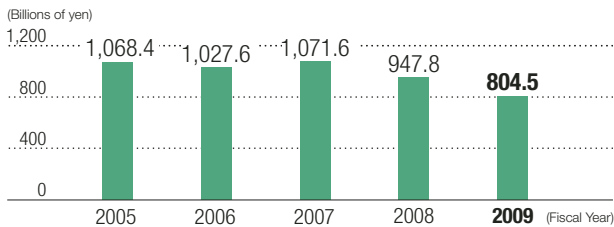
Powered by the core technologies it has developed in four fields—materials, optical, nano-fabrication and imaging technology—Konica Minolta delivers a variety of products and services to customers all over the world.

Company profile

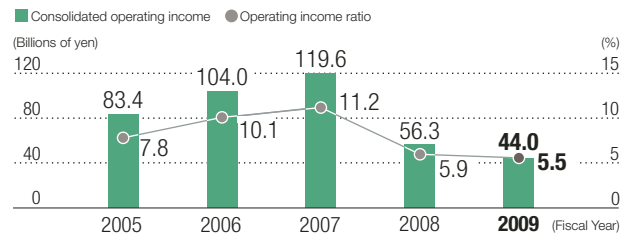
Company name Konica Minolta Holdings, Inc.
Head office 1-6-1 Marunouchi, Chiyoda-ku, Tokyo, Japan
President and CEO Masatoshi Matsuzaki

Established December 22, 1936
Paid-in capital 37,519 million yen
Fiscal year end March 31

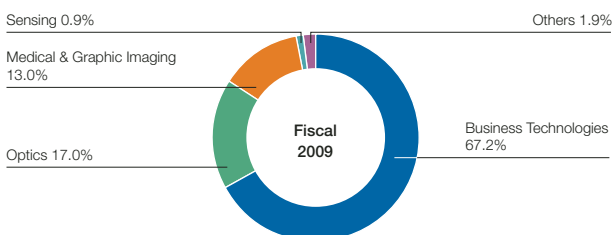
Consolidated Sales



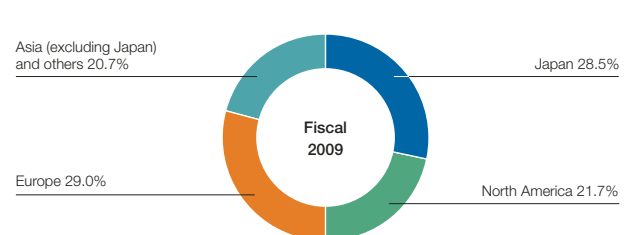
Consolidated Operating Income / Operating Income Ratio



Breakdown of Sales by Business Segment



Breakdown by Sales by Region



Overview of the Konica Minolta Group



Holding Company

KONICA MINOLTA HOLDINGS, INC.

Responsible for planning and promotion of management strategies for the Konica Minolta Group, and for audit and administration of the Group's management.

Business Companies: Companies entrusted with the authority necessary to execute business activities in their field of expertise.

KONICA MINOLTA BUSINESS TECHNOLOGIES, INC.

Manufactures and markets digital multi-functional peripherals (MFPs), printers, and related supplies.



KONICA MINOLTA OPTO, INC.

Manufactures and markets optical products such as pickup lenses and electronic materials such as triacetyl cellulose (TAC) films.



KONICA MINOLTA MEDICAL & GRAPHIC, INC.

Manufactures and markets medical and graphic imaging equipment and materials.



KONICA MINOLTA SENSING, INC.

Manufactures and markets measuring instruments for industrial and medical applications.



Common Function Companies: Companies that perform centralized Group-wide functions.

KONICA MINOLTA TECHNOLOGY CENTER, INC.

Conducts R&D, promotes the incubation and commercialization of new business and manages and operates intellectual property.

KONICA MINOLTA BUSINESS EXPERT, INC.

Provides management support and administrative functions and services.

Affiliates Managed by the Holding Company: Companies that strive to cultivate business with the support of the holding company.

KONICA MINOLTA IJ TECHNOLOGIES, INC.

Manufactures and markets inkjet print heads for industrial use and textile printers.



KONICA MINOLTA PLANETARIUM CO.,LTD.

Manufactures, markets, and installs planetariums.





Formulation of Eco Vision 2050

Eco Vision 2050

Formulation of Eco Vision 2050 for a sustainable earth and society

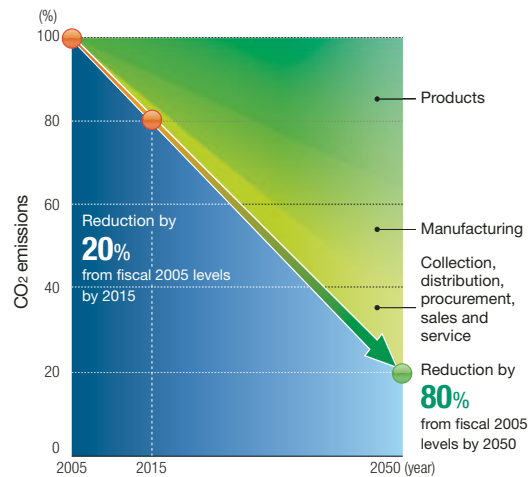
In January 2009 Konica Minolta formulated Eco Vision 2050 as its long-term environmental vision. This vision guides Konica Minolta in the right direction to achieve its future objectives and fulfill its responsibility as a global corporation by contributing to a sustainable earth and society.

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

* Medium-Term Environmental Plan 2015 (See page 8)



Reductions in CO₂ Emissions



Approach to Setting Targets for CO₂ Emissions

According to an announcement made by the IPCC (Intergovernmental Panel on Climate Change), greenhouse gas emissions in 2004 were 49 billion t-CO₂, which, divided by a population of 6.4 billion people, amounts to 7.66 t-CO₂ per person per year. The amount of greenhouse gas that the earth can absorb naturally is thought to be 11.4 billion t-CO₂. Divided by the projected population of 9.2 billion people in 2050, this figure amounts to 1.24 t-CO₂ per person per year—which corresponds to a reduction of about 80% of current annual per capita emissions.

Based on these estimates, Eco Vision 2050 sets a target of 80% reduction in CO₂ emissions throughout the product life cycle in 2050, with 2005 as the baseline. In addition, the Medium-Term Environmental Plan 2015 uses backcasting* from this target to set a target of 20% reduction by fiscal 2015.

* Backcasting: A way of thinking that involves defining a future action by sketching a desirable image of the future and a goal, and then looking back at the current situation from the perspective of that goal.



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, and reducing the risk of chemical substances.

Furthermore, in the area of biodiversity, Konica Minolta evaluates the impact of its business activities on ecosystems and examines specific measures for managing the potential effects.

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, 2009
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 conducting activities, the Group sets numerical targets and periodically evaluates attainment. The evaluation results are reported back to each site to enable continuous improvement.

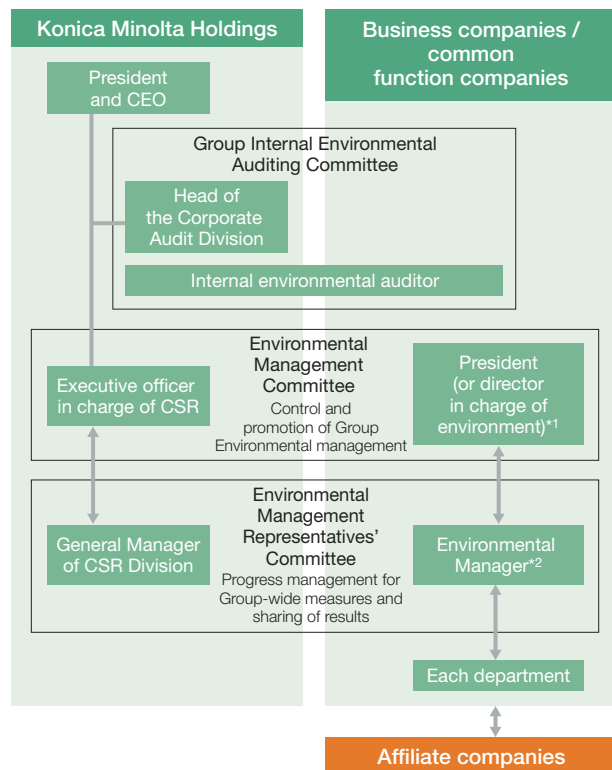
Organization

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

Konica Minolta Holdings, Inc. has appointed an executive officer in charge of CSR with the authority and responsibility for Group-wide environmental issues. Directors in charge of environment have also been appointed at each business company and common function company, with the authority and responsibility for environmental issues at their individual operations.

As a body for the control and promotion of Group-wide environmental management, Konica Minolta has set up the Environmental Management Committee, which is chaired by the executive officer in charge of CSR and composed of the presidents or the directors in charge of the environment from individual companies. The Committee formulates Group environmental policies and medium-term environmental plans and shares knowledge regarding environmental issues and efforts with each individual company. The presidents or the directors in charge of the environment take the decisions back to their respective companies and use them to implement specific initiatives.

Group Environmental Management System



*1 Control and promotion of Environmental management at each company
 *2 Implementation and management of Environmental activities at each company



Environmental Management

Environmental Audits

At Konica Minolta, the Group Internal Environmental Auditing Committee, which is chaired by the head of the Corporate Audit Division at Konica Minolta Holdings, Inc., 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.

Compliance with Environmental Regulations

Strengthening the compliance system and making provisions for future regulations

As environmental awareness grows around the world, new environmental regulations are being put into place in various countries and regions. These regulatory initiatives focus not only on strengthening and revising existing anti-pollution measures, but also address wider issues of protecting the environment. To reduce the business risks that compliance entails, it is necessary to look beyond existing legislation and make robust provisions for future regulations.

Konica Minolta is strengthening its compliance system using compliance diagnosis, in order to understand and comply fully with these regulations. This program was first introduced in Konica Minolta's production company in China in fiscal 2009, and is scheduled to be deployed worldwide in fiscal 2010.

In addition, the company is reinforcing its systems to monitor regulatory trends in each country and region where it operates. Further, Konica Minolta is building a system that enables a two-way exchange of information between the four specialist compliance organizations located in Japan, China, Europe, and the U.S. and the production sites which they oversee.



Medium-Term Environmental Plan 2015

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

Fiscal 2015 Targets and Initiatives

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

*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 used here refers to the process of delivering parts to Konica Minolta from upstream materials manufacturers via parts suppliers.

*5 Environmental impact index: An index developed by Konica Minolta to measure the impact of VOCs. The value is obtained by multiplying the emissions with a location coefficient and a hazard coefficient, which reflect impacts on human health and the environment, for each VOC, and finally summing the products for all VOCs.



Fiscal 2009 Targets and Results/Fiscal 2010 Targets

To achieve targets stipulated in the Medium-Term Environmental Plan 2015, Konica Minolta has set target values for each year for each business company. Although there were some unrealized targets in fiscal 2009, the Group is pressing forward toward its 2015 targets and the realization of its vision for 2050.

Fiscal 2009 Targets and Results, and Fiscal 2010 Targets (compared with fiscal 2005)

Objectives	Fiscal 2009 Targets	Fiscal 2009 Results	Target Achieved	Fiscal 2010 Targets
Preventing global warming	CO ₂ emissions throughout product life cycle: -32.5%	-44.9%	Yes	-43.5%
	CO ₂ emissions from product usage: -48.5%	-60.5%	Yes	-62.9%
	CO ₂ emissions from manufacturing: +13.4% (per unit of sales)	+19.2%	No	+34.6%
	CO ₂ emissions from distribution: -33.3% (per unit of sales)	-10.7%	No	-17.0%
	CO ₂ emissions from sales and service: +63.4% (per unit of sales)	+63.5%	No	+44.7%
Supporting a recycling-oriented society	Petroleum-based resource usage: +21.6% (per unit of sales)	+18.2%	Yes	+21.2%
	Packaging materials usage: +17.9% (per unit of sales)	-28.3%	Yes	-24.7%
	Volume of waste discharged externally*1 from manufacturing: +1.7% (per unit of sales)	+10.8%	No	+9.9%
	Product recycling systems: Confirm current status, specify measures, and formulate plans	Formulate plan deployment	Yes	Confirm current status of recycling system and formulate plans
Reducing the risk of chemical substances	Chemical substance management: Transitioning to a new Green Procurement System	Transition complete	Yes	New Green Procurement System is fully operational RoHS-related preparations in China completed
	Atmospheric emissions of volatile organic compounds (VOCs): -67% (environmental impact index*2)	-78%	Yes	-71%
Restoring and preserving biodiversity	Confirm current status and formulate plans	Evaluate business activities and their relationship to biodiversity Formulate plans	Yes	Review procurement criteria for paper Specify ecological preservation plan

*1 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.

*2 Environmental impact index: An index developed by Konica Minolta to measure the impact of VOCs. The value is obtained by multiplying the emissions with a location coefficient and a hazard coefficient, which reflect impacts on human health and the environment, for each VOC, and finally summing the products for all VOCs.

* See below for details

- Preventing Global Warming (See page 12)
- Supporting a Recycling-Oriented Society (See page 20)
- Reducing the Risk of Chemical Substances (See page 30)
- Restoring and preserving biodiversity (See page 35)



Green Factory Certification System

In fiscal 2009, Konica Minolta started activities under its own Green Factory Certification System in an effort to support the achievement of targets outlined in its Medium-Term Environmental Plan 2015. Konica Minolta strives to evaluate comprehensively the environmental friendliness of its production sites, and will certify each site that meets definite standards as a Green Factory.

Green Factory Certification System

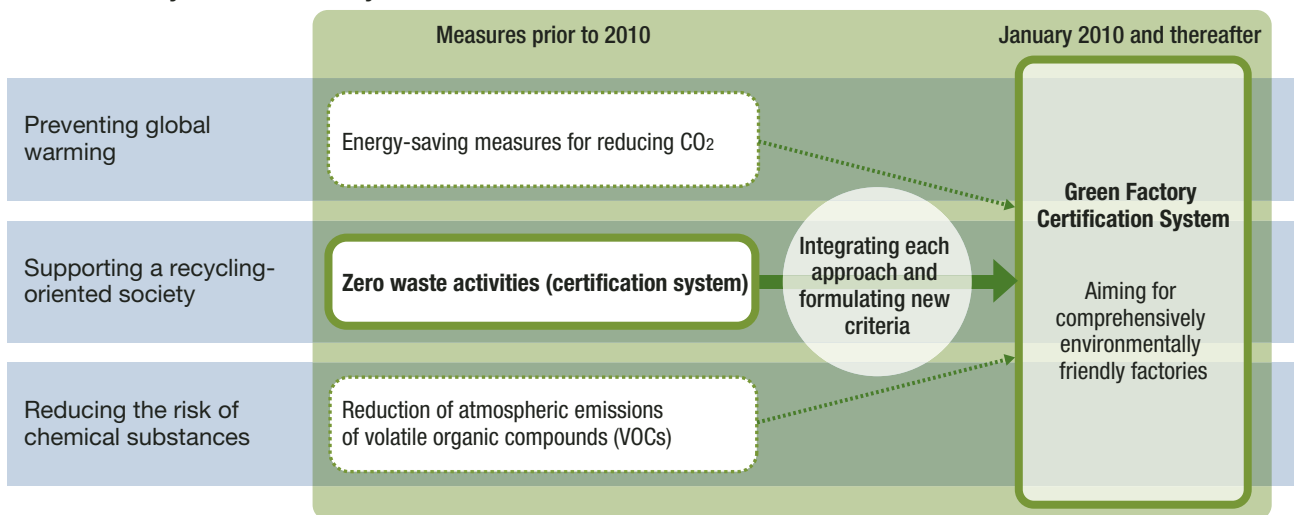
Comprehensively evaluating environmental friendliness of production sites

Previously, Konica Minolta operated a production site certification system with two levels of attainment criteria for reducing waste, focusing on the objective of supporting a recycling-oriented society. Each factory attaining those criteria can be certified as a Zero Waste Factory. In fiscal 2009, all Group production sites worldwide have achieved level 2.

Expanding upon this system, the new Green Factory Certification System aims to ensure that factories are comprehensively environmentally friendly. The new system sets stricter standards* in the area of supporting a recycling-oriented society and establishes unified group-wide criteria for preventing global warming and reducing the risk of chemical substances.

* The Group has set the base year as fiscal 2005, a year when the reduction of waste discharged externally had already shown significant progress thanks to the promotion of zero waste activities.

Green Factory Certification System



* Zero waste activities (See page 24)





Green Factory Certification System

Green Factory Certification Criteria

Progress measured with two levels of criteria at all production sites

The Green Factory Certification System has two sets of criteria for all production sites to achieve: one is “level 2” to be achieved by 2015, and the other is “level 1,” to be achieved by 2011 to ensure steady progress toward the 2015 goal.

In this system, not only progress against targets but also the implementation process is evaluated. In order to achieve clarity in the evaluation, guidelines have been prepared and a way created to quantify implementation conditions with a score. The guidelines bring together all of Konica Minolta’s know-how in environmental measures, and are comprised of approximately 250 implementation items as well as the evaluation standards for each item. The Group uses the guidelines to improve the quality of its activities.

Since January 2010, 24 production sites* worldwide have formulated action plans and started conducting activities based on the plans.

* Targets are established at each business unit. Even if the location is different, the production site is treated as a single site when it belongs to the same business unit.

Green Factory Certification Criteria

Objectives	Management Indicators		Level 1	Level 2
Preventing global warming	CO ₂ emissions (per unit of production* ¹)		12% reduction* ^{5,*6}	20% reduction* ^{5,*6}
Supporting a recycling-oriented society	Zero waste activities	Waste discharged externally* ² (per unit of sales)	30% reduction* ^{5,*6}	50% reduction* ^{5,*6}
		Final disposal rate of waste discharged externally	0.5% or less	0.5% or less
	Volume of petroleum-based resource waste* ³ (per unit of sales)		30% reduction* ⁵	50% reduction* ⁵
Reducing the risk of chemical substances	Atmospheric emissions of volatile organic compounds (VOCs)		Achievement of fiscal 2011 targets at each site based on Medium-Term Environmental Plan 2015	Achievement of fiscal 2015 targets at each site based on Medium-Term Environmental Plan 2015
Guideline-based activities	Achievement rate of implemented items* ⁴		70% or more	90% or higher

*¹ 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 CO₂ emissions to be evaluated appropriately.

*² 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.

*³ Volume of petroleum-based resources waste: Volume of petroleum-based out of total volume of waste discharged externally.

*⁴ 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.

*⁵ 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.

*⁶ Based on this numerical value, standards tailored to factory characteristics are established.

Preventing Global Warming

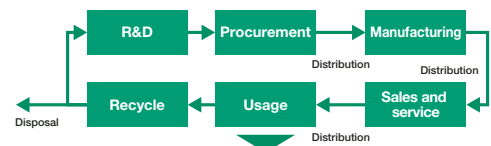


Basic Concept / Targets and Results

Basic Concept

Recognizing that the prevention of global warming is an important responsibility of a manufacturer, Konica Minolta is taking steps to reduce CO₂ emissions throughout the entire product life cycle. The Group is committed to building a sustainable earth and human societies by working to reduce CO₂ emissions throughout the product life cycle, including not only direct CO₂ 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 CO₂ Emissions throughout the Product Life Cycle



CO₂ reduction throughout the entire product life cycle

Targets and Results for Fiscal 2009 (CO₂ emissions throughout the product life cycle)

Achieving its fiscal year targets for reduction in CO₂ emissions throughout the product life cycle

Konica Minolta has endeavored to achieve reduction of CO₂ emissions throughout the entire product life cycle. It is working on measures to achieve the targets for product use, manufacturing, distribution, sales and service set in the Medium-Term Environmental Plan 2015.

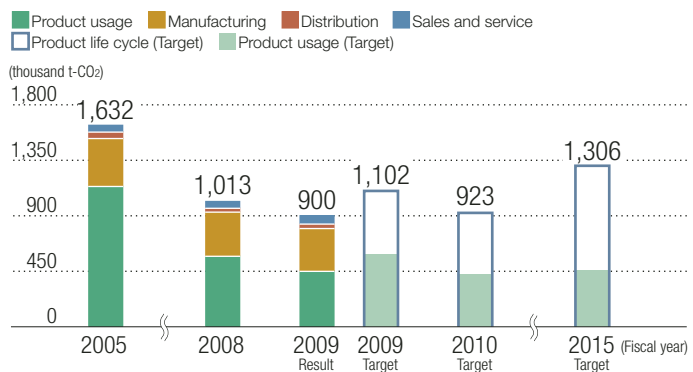
In fiscal 2009, the Group met its overall target (32.5% reduction) with a 44.9% decrease in CO₂ emissions throughout the entire product life cycle. One reason for this was the fact that the number of products in operation shrank with the economic downturn. Another key factor that contributed to the overall reduction of CO₂ emissions was the market introduction of Konica Minolta's MFPs with enhanced energy-saving performance, which contributed to lower product usage emissions.

However, targets were not met in the other stages. At the manufacturing stage, although the Group pushed ahead with yield improvement and optimized operation of its equipment, the result fell short of the target due to a decline in operation levels caused by the economic downturn. At the distribution stage, the target was not met largely because of an increase in air transport required to deal with unpredictable ups and downs in demand. The Group has been working to sharpen the precision of its demand forecasts to reduce air transport. At the sales and service stage, as well, the result fell slightly short of the target. The Group is pursuing further improvements in sales efficiency to achieve the target.

The fiscal 2010 target values for CO₂ emissions will be set a little higher than those for fiscal 2009, as an increase in sales is expected due to the ongoing economic recovery. In order to minimize the increase, the Group is focusing on product usage factors and production activity factors that constitute a large proportion of the total.

- * For more details on the targets (see page 13 and thereafter)
- * The method used to calculate CO₂ emissions is outlined on page 48.

Changes in Product Life Cycle CO₂ Emissions



* Preparing for the transition to the new Medium-Term Environmental Plan, the Group has reviewed and revised coefficients for CO₂ emissions throughout the product life cycle.

Fiscal 2009 Targets and Results (compared with fiscal 2005)

Objectives	Fiscal 2009 Targets	Fiscal 2009 Results	Target Achieved
Preventing global warming	CO ₂ emissions throughout product life cycle: -32.5%	-44.9%	Yes
	CO ₂ emissions from product usage: -48.5%	-60.5%	Yes
	CO ₂ emissions from manufacturing: +13.4% (per unit of sales)	+19.2%	No
	CO ₂ emissions from distribution: -33.3% (per unit of sales)	-10.7%	No
	CO ₂ emissions from sales and service: +63.4% (per unit of sales)	+63.5%	No



CO₂ Emissions from Product Usage

Targets and Results for Fiscal 2009

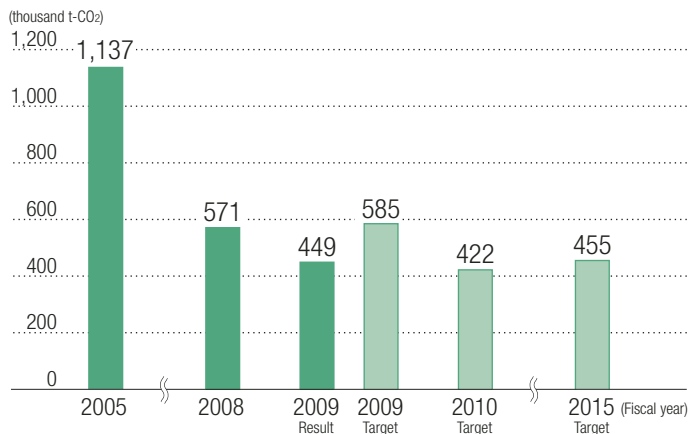
Achievement of reduction targets by incorporating energy-saving technologies into products

Multi-functional peripherals (MFPs) occupy the largest portion of CO₂ amounts emitted during product usage among all Konica Minolta products.

For this reason, Konica Minolta Business Technologies, Inc. is actively promoting development of MFPs that can provide substantial energy-saving performance. The MFPs feature numerous unique technologies, including a toner with a lower fusing temperature and an IH technology-based fusing unit that reduces power consumption during standby mode.

In fiscal 2009, the company contributed to the achievement of target values with the market launch of the color MFP bizhub C652/C552 which promises even greater energy-saving performance.

CO₂ Emissions from Product Usage



Fiscal 2009 Targets and Results: CO₂ Emissions from Product Usage (compared with fiscal 2005)

Objectives	Fiscal 2009 Targets	Fiscal 2009 Results	Target Achieved
Preventing global warming	CO ₂ emissions from product usage: -48.5%	-60.5%	Yes

* The method used to calculate CO₂ emissions is outlined on page 48.

Energy-Saving Product Design

Working to reduce CO₂ emissions by introducing the LCA method to each product group

Example: Multi-Functional Peripherals (MFPs)

During an MFP's life cycle, the end-user operating stage accounts for a major portion of its total CO₂ emissions. When copying or printing text and images output by the MFP, heat is necessary to fuse the toner on the paper. The energy required in the fusing process represents a significant percentage* of the energy utilized by the MFP during the end-user operating stage.

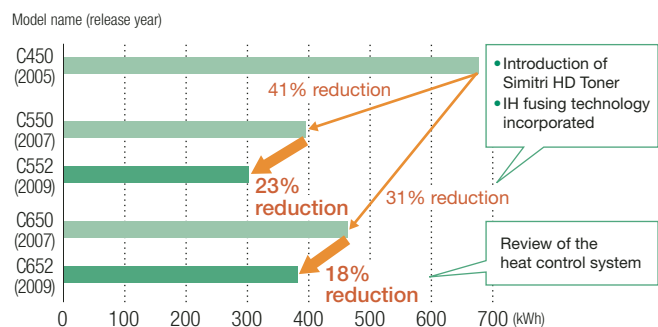
As a result, Konica Minolta has focused its efforts on ways to save energy during the fusing process.

* Represents about 60% of the end-user operating stage energy consumption for the bizhub C652.



Color MFP bizhub C652

Comparison of Energy-Saving Performance with Previous Models



* Figures were calculated by converting the Typical Electricity Consumption (TEC) value, obtained by the measurement method as stipulated by the International Energy Star Program over a 52-week (one year) period.

* For details on initiatives related to polymerized toner products, please refer to "Special Feature 2: Polymerized Toner—an Innovative Choice" (See page 51)



CO₂ Emissions from Manufacturing

Targets and Results for Fiscal 2009

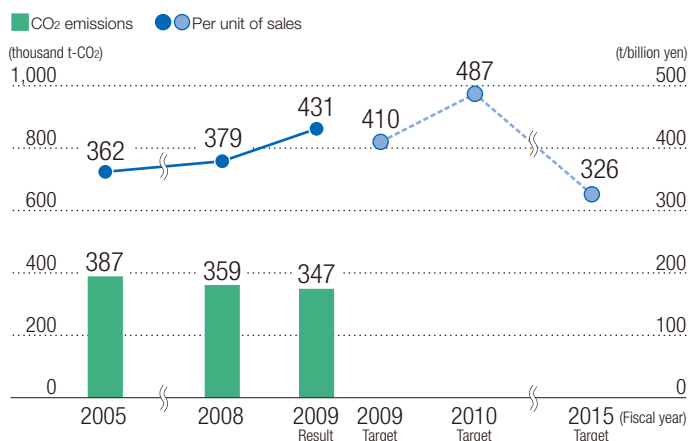
Target was unmet due to factors such as a decrease in operation levels

In fiscal 2009 the Group promoted yield improvement and optimized operation of equipment in each company. Also, it continued to promote an Energy Conservation Support Program in China and the U.S. However, the result fell short of the target value for per-unit-of-sales due to factors such as a decline in operation levels caused by the economic downturn.

In fiscal 2010, the Group is working to achieve improvements in energy efficiency in production using its Green Factory Certification System, which started in January 2009. Each business unit is taking consistent steps to achieve its CO₂ emissions target per production volume.

- * Energy Conservation Support Program (See page 15)
- * Green Factory Certification System (See page 10)

CO₂ Emissions from Manufacturing



Fiscal 2009 Targets and Results: CO₂ Emissions from Manufacturing (compared with fiscal 2005)

Objectives	Fiscal 2009 Targets	Fiscal 2009 Results	Target Achieved
Preventing global warming	CO ₂ emissions from manufacturing: +13.4% (per unit of sales)	+19.2%	No

* The method used to calculate CO₂ emissions is outlined on page 48.



CO₂ Emissions from Manufacturing

Energy Conservation of Facilities and Equipment

Konica Minolta has introduced a variety of measures to help reduce CO₂ emissions at its production sites

Energy Conservation Support Program

Konica Minolta has implemented the Energy Conservation Support Program to reduce CO₂ emissions at its production sites.

The program dispatches internal experts in plant engineering, production line design and energy management to production sites. They check diverse matters, including the status of energy management, utility facilities such as air conditioners or boilers, production equipment, and specifications of equipment and systems. These experts then propose measures adapted to each site for conserving energy usage. The experts and staff at the sites use these proposals to simulate the energy saving effect and draw up plans to implement the ideas.

Initially the program was deployed in Japan, but it expanded its scope to other countries, starting with two sites in China during fiscal 2007. In fiscal 2009, the Group continued to implement the program at five sites in China and U.S., the result of which was an estimated total reduction of approximately 6,000 tons of CO₂ emissions. Among these initiatives, Konica Minolta Business Technologies (Dongguan) Co., Ltd. implemented the following energy conservation measures:

- Introduction of a rooftop watering and evaporative air conditioning system (by passing air through a water curtain) using adequately treated sewage wastewater.
- Effective replacement of fluorescent lamps with lamp types that have lower consumption and energy levels.



Window installed with evaporative air conditioning equipment and a recycled water tank



Top: Energy-saving fluorescent lamp attached with reflector mirror
Below: Conventional fluorescent lamp

Greenery on Rooftops and Walls (Green Curtain)

At its buildings all over Japan, Konica Minolta is adding greenery to the rooftops and walls, as a “Green Curtain.” This initiative will result in CO₂ absorption through photosynthesis, and have a cooling effect on the buildings through natural shading and transpiration (by which plants release moisture vapor into the air). In short, it will help prevent global warming and lower the heat island effect.

The company’s three business offices in the Tokai region erected Green Curtains of goya (a bitter melon from Okinawa) and Japanese morning glory on the walls of their office buildings. This reduced temperatures by approximately 2°C during strong daylight, saving the equivalent amount of electricity used by air conditioners to achieve the same effect.



Green Curtain at the Mikawa Site



CO₂ Emissions from Distribution

Targets and Results for Fiscal 2009

Reduction targets unmet due to an increase in air transportation

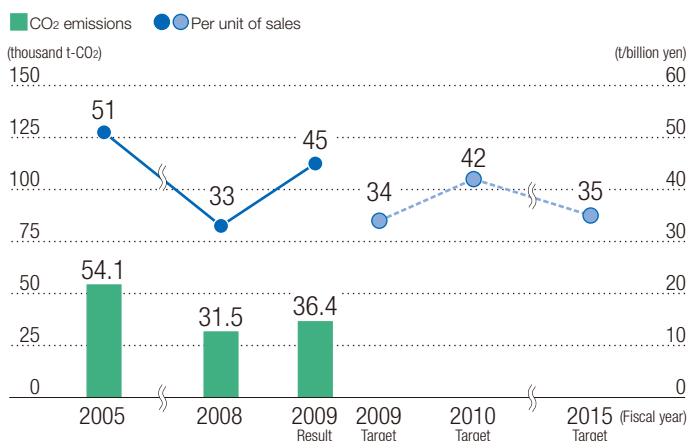
For the same shipment weight transported over an identical distance, cargo shipment by air produces 57 times the amount of CO₂ as shipment by sea (based on GHG Protocol published values). Consequently, Konica Minolta has focused its efforts on reducing air transport.

However, due to an increase in air transport required to deal with the unpredictable ups and downs in demand, fiscal 2009 target values went largely unmet.

The Group has been working to sharpen the precision of its demand forecasts and promoting supply chain management (SCM)* to reduce air transport.

* 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.

CO₂ Emissions from Distribution



Fiscal 2009 Targets and Results: CO₂ Emissions from Distribution (compared with fiscal 2005)

Objectives	Fiscal 2009 Targets	Fiscal 2009 Results	Target Achieved
Preventing global warming	CO ₂ emissions from distribution: -33.3% (per unit of sales)	-10.7%	No

* The method used to calculate CO₂ emissions is outlined on page 48.

Initiatives in Distribution

Promoting a Modal Shift

Konica Minolta has been promoting a modal shift for the long-distance transportation of products and parts, switching from aircraft and trucks to ships, railways and other means that emit less CO₂.

When transporting its business information products internationally, the company normally uses marine transportation, but on occasion air transportation was necessary. To reduce the frequency of air transportation, the Group is working to enhance its demand forecasting accuracy and to review inventory management systems.

Improving Distribution Routes and Systems

Konica Minolta is reducing CO₂ emissions from its distribution processes by proactively restructuring its logistics facilities around the world.

In June 2008, for example, the company consolidated two logistics centers for business information products, one in Germany and the other in the Netherlands, at a new location in Emmerich, Germany, to serve all of Europe. Through such restructurings, the company aims to shorten the overall transport distance in its logistics operations Group-wide, while expanding the scope of direct customer delivery areas.



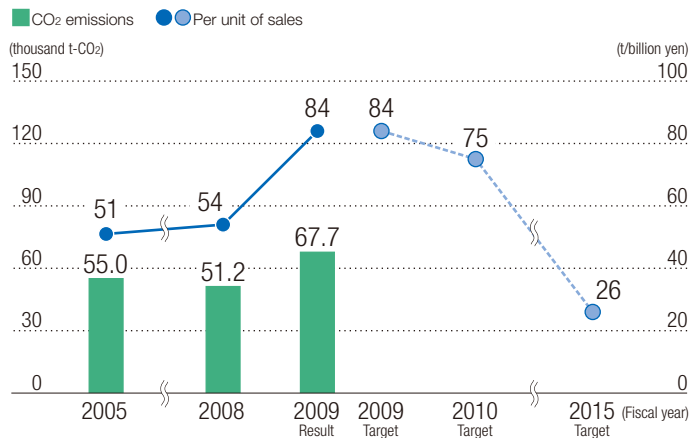
CO₂ Emissions from Sales and Service

Targets and Results for Fiscal 2009

Newly established targets fell slightly short

Target values for CO₂ emissions attributable to sales and services were set for the first time in fiscal 2009. CO₂ emissions reduction in a U.S.-based sales company that joined in the Group in fiscal 2008 made steady progress due to efficiency measure. However the Group as a whole fell slightly short of its reduction targets. The Group is pursuing further improvements in sales efficiency to achieve the target.

CO₂ Emissions from Sales and Service



Fiscal 2009 Targets and Results: CO₂ Emissions from Sales and Service (compared with fiscal 2005)

Objectives	Fiscal 2009 Targets	Fiscal 2009 Results	Target Achieved
Preventing global warming	CO ₂ emissions from sales and service: +63.4%(per unit of sales)	+63.5%	No

* The method used to calculate CO₂ emissions is outlined on page 48.

Initiatives in Sales and Service

Introducing Eco Cars and Promoting Eco Driving

At its sales offices around the world, Konica Minolta uses eco cars that emit relatively low amounts of CO₂ and atmospheric pollutants while promoting eco driving to lessen energy consumption.

Konica Minolta Business Solutions Japan Co., Ltd., a business information systems sales company, has also been promoting eco driving at work and at home as a key measure for reducing the use of petroleum-based resources. The company has prepared a booklet which gives specifics on ten aspects of eco driving and encourages driving that is mindful of both the environment and safety.

The company also has introduced a vehicle operation management system for company owned vehicles to monitor fuel costs and excessive idling, as a way to further its eco driving initiatives.



Booklet on eco driving



CO₂ Emissions from Sales and Service

Feature

Installing a Photovoltaic System to Reduce CO₂ Emissions

Konica Minolta Business Solutions (Belgium) N.V. installed a new photovoltaic power generation system in March 2010. The company anticipates annual energy production of 115 MWh, which will cover 25% of the power consumption of its entire office and lead to reduction of CO₂ emissions by 46 tons per year.

Renewable energy solutions are being introduced and promoted across the EU, with Belgium adopting particularly proactive legislation to encourage the use of photovoltaic technology. The company was also certified as a provider generating renewable energy prior to the installation, enabling it to sell the electricity it generates on non-business days to the electricity firm and contribute to the spread of renewable energy throughout the country.



Solar panels installed on the roof of the company building



Efforts to Conserve Energy in Offices

Environmental Activities Based on ISO 14001 Standards

All Konica Minolta employees take part in environmental activities under an environmental management system based on the ISO 14001 standards.

Employees strive to understand the impact the company's business activities have on the environment in office settings as well as at production facilities. The employees also aim to continuously improve their daily activities to lessen their impact on the environment, by periodically reviewing plans to achieve and maintain compliance with the requirements of the ISO 14001.

Using Green Electricity

Located in Tokyo, the Konica Minolta Plaza is the Group's venue for providing the public with various types of information, including environmental, cultural, and artistic exhibits. The total volume of electricity required to run the exhibitions held at the Plaza, which amounts to 71,000 kWh, is procured through green electricity*.

The electricity used at the General Meeting of Shareholders was also provided by green power.

* Green electricity: Electricity made from renewable energy sources such as wind and biomass.



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.

Targets and Results for Fiscal 2009

Reduction targets for petroleum-based resources were achieved, while targets for waste reduction remained unmet

Konica Minolta organizes its efforts to reduce usage of petroleum-based resources around three themes: resource usage in products, material waste from production, and fuel usage from use of sales and service vehicles. As a result, the Group was able to achieve its overall fiscal 2009 target (no more than a 21.6% increase), holding use to an 18.2% increase per unit of sales.

The Group achieved a reduction in the total volume of waste discharged externally from manufacturing by promoting improvements in production efficiency and internal recycling. However, it fell short of its per-unit-of-sales target (no more than a 1.7% increase), reporting a 10.8% increase due to increased production of products which generate relatively higher levels of waste and unexpected waste generated by impurities mixed in with raw materials. The Group is working to achieve reductions at each business unit using its Green Factory Certification System.

Furthermore, efforts to reduce packaging materials and recycle used products have shown progress as planned.

* Green Factory Certification System (See page 10)

Fiscal 2009 Targets and Results (compared with fiscal 2005)

Objectives	Fiscal 2009 Targets	Fiscal 2009 Results	Target Achieved
Supporting a recycling-oriented society	Petroleum-based resource usage: +21.6% (per unit of sales)	+18.2%	Yes
	Packaging materials usage: +17.9% (per unit of sales)	-28.3%	Yes
	Volume of waste discharged externally* from manufacturing: +1.7% (per unit of sales)	+10.8%	No
	Product recycling systems: Confirm current status, specify measures, and formulate plans	Formulate plan deployment	Yes

* 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.

* More information on the target areas is available at the following pages:

- Reduce Petroleum-Based Resource Usage (See page 21)
- Reduce Packaging materials usage (See page 22)
- Reduce in the total volume of waste discharged externally from manufacturing (See page 23)
- Recycling of Used Products (See page 28)



Reduce Petroleum-Based Resource Usage

Targets and Results for Fiscal 2009

Reduction targets were met through a combination of three approaches

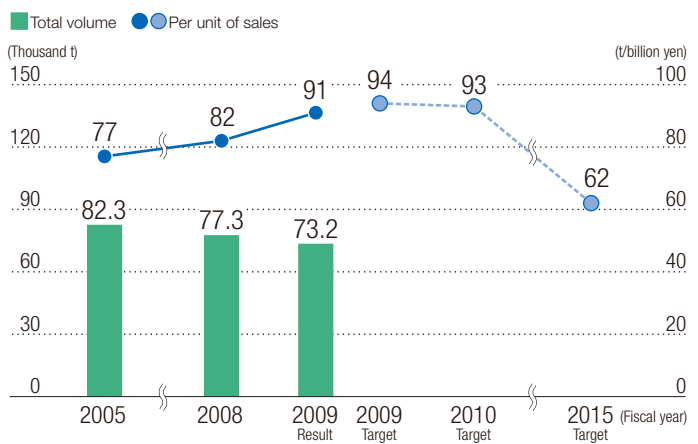
Konica Minolta focused on three factors in order to reduce the use of petroleum-based resources: the amount of resources used in commercial products, such as resin materials; the amount of waste generated during the production process; and the amount of vehicle fuel used for sales and services.

The Group sought to produce lighter, more compact products, and promote the use of recycled materials in order to reduce the total amount of resources used in its commercial products.

Next, it endeavored to improve its yield and production efficiencies, and push ahead with internal recycling of waste solvents and other materials, in order to reduce waste generated during the production process. Further, as a way to reduce the use amount of vehicle fuel, the Group took steps to switch to eco cars which are more fuel-efficient, and encourage its employees to adopt eco-driving.

The success of its efforts in these areas helped the Group meet its fiscal 2009 targets for reducing the amount of petroleum-based materials used. Looking ahead to 2010, Konica Minolta will carry on with reduction activities based on these three approaches.

Petroleum-Based Resource Usage



Fiscal 2009 Targets and Results: Petroleum-Based Resource Usage (compared with fiscal 2005)

Objectives	Fiscal 2009 Targets	Fiscal 2009 Results	Target Achieved
Supporting a recycling-oriented society	Petroleum-based resource usage: +21.6% (per unit of sales)	+18.2%	Yes



Reduce Packaging Materials Usage

Targets and Results for Fiscal 2009

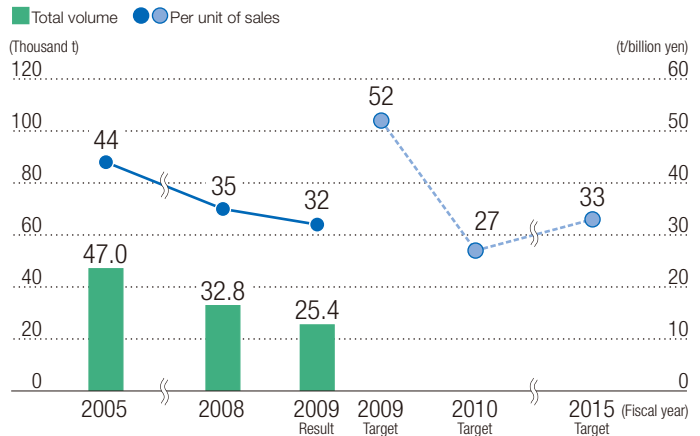
Reduction targets were met by redesigning packaging materials

Konica Minolta Business Technologies, Inc., which is a core business company of the Group, has taken steps to reduce packaging for its leading product MFP by redesigning the shape of its packaging materials, and promoted the reuse of toner containers used between production sites and the use of returnable packaging boxes for service parts in its sales companies.

As a result of these efforts, the company met its fiscal 2009 targets for reducing the amount of packaging materials used.

Konica Minolta will continue to push ahead with further reduction initiatives in fiscal 2010, based on the success of these efforts.

Packaging Materials Usage



Fiscal 2009 Targets and Results: Packaging Materials Usage (compared with fiscal 2005)

Objectives	Fiscal 2009 Targets	Fiscal 2009 Results	Target Achieved
Supporting a recycling-oriented society	Packaging materials usage: +17.9% (per unit of sales)	-28.3%	Yes

Activities at Sales Companies

Example: Establishing a Recycling Centre for Used Packaging Materials

In 2007, Konica Minolta Business Solutions (UK) Ltd. created a recycling centre called “Greenhub” at its main warehouse in an effort to zero out used packaging material from MFPs sent to landfill.

At the centre, the company sorts the packaging materials into cardboard, styrofoam, and film, then crushes and compacts the materials, and finally sells them to a local recycling operator. Recycling is made easy by disposing of the materials in this way, and the effort will also reduce the environmental impact that accompanies waste transportation.

In fiscal 2009, 119 tons of cardboard and a total of 3 tons of styrofoam and film were recycled. Going forward, the company plans to achieve further improvements in recycling efficiency by introducing machines for crushing non-reusable pallets.



Foamed polystyrene pulverization machine



Reduce Volume of Waste Discharged Externally from Manufacturing

Targets and Results for Fiscal 2009

Although zero waste activities were achieved at all production sites, the Group's fiscal 2009 targets remained unmet

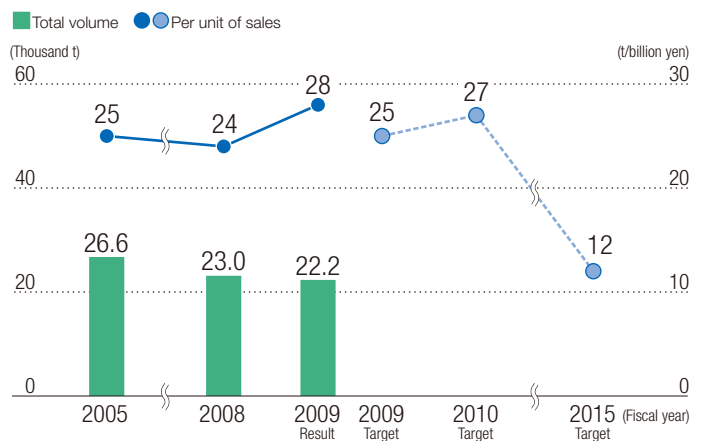
The total amount of waste discharged externally from the production process was reduced by improving production efficiencies and promoting internal recycling at the Group. As a result, the zero waste activities undertaken since 2004 helped the Group achieve the level 2 criteria at all Group production sites.

However, per-unit-of-sales targets remained unmet due to increased production of products which generate relatively higher levels of waste and unexpected waste generated by impurities mixed in with raw materials.

In fiscal 2010, the Group has implemented its Green Factory Certification System operations. The new designated benchmark year for further efforts to reduce the amount of waste is fiscal 2005, the year when the reduction of waste discharged externally had already shown significant progress thanks to the promotion of zero waste activities.

- * Zero waste activities (See page 24)
- * Green Factory Certification System (See page 10)

Volume of Waste Discharged Externally from Manufacturing



* Waste discharged externally from production sites was recalculated to include waste from research and development sites.

Fiscal 2009 Targets and Results: Volume of Waste Discharged Externally from Manufacturing (compared with fiscal 2005)

Objectives	Fiscal 2009 Targets	Fiscal 2009 Results	Target Achieved
Supporting a recycling-oriented society	Volume of waste discharged externally* from manufacturing: +1.7% (per unit of sales)	+10.8%	No

* 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.



Reduce Volume of Waste Discharged Externally from Manufacturing

Zero Waste Activities

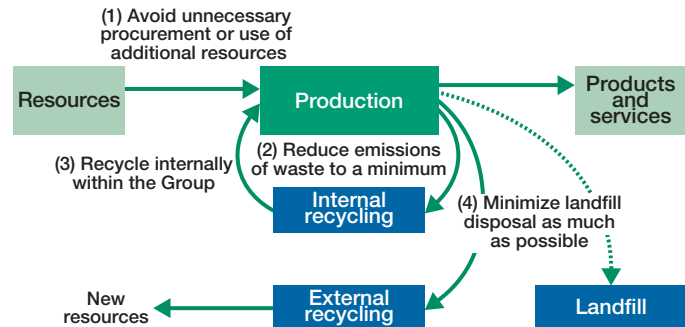
Basic Policy

Konica Minolta has conducted zero waste activities aimed at minimizing final disposal (landfill waste) through recycling and reducing the total amount of waste.

The basic policy of Konica Minolta's zero waste activities is to reduce the environmental impact of the company at the same time as accomplishing reductions in costs. This is because the company understands that activities which fail to take profitability into account cannot be maintained.

In accordance with this policy, the attainment criteria for the zero waste activities are set at two levels, Level 1 and Level 2. At Level 1, targets are set for reductions in final disposal (landfill waste) by recycling, as well as reductions in costs. Level 2 requires reduction in the amount of waste including resources recycled, per unit of sales.

The Zero Waste Activities



Criteria of Konica Minolta's Zero Waste Activities

A site must achieve the target values listed below and maintain them for three months or more. After an audit by environmental specialists, the executive officer in charge of CSR conducts an onsite inspection to confirm the achievements and determines whether the standards have been met.

Level 1 criteria are as follows:

- **Recycling rate: 90% or higher**
- **Final disposal rate: 0.5% or lower (5% or lower including secondary residues)**
* Except for waste that a Konica Minolta site cannot decide how to dispose of on its own because of administrative guidance and laws
- **Cost reductions: Reductions of 90% or more (in relation to benchmarks*1) in outside payments for disposal and recycling, or revenue from the sale of by-products or other benefits from zero waste activities exceeding outside payments.**

Level 2 criteria are as follows:

- **Level 1 criteria is achieved**
- **Volume of waste discharged externally per unit of sales: Reduction of 30% or more (compared to benchmarks*1)**

*1 Set up in accordance with the year the site was established and with changes in the business, with a base year of fiscal 2001.

Feature

Achieving Plans for Zero Waste Activities

Since fiscal 1999, Konica Minolta has been proactively pursuing zero waste activities in a phased manner to reduce discharged waste volumes, in addition to recycling waste to minimize final disposal (landfill disposal). In fiscal 2007, the Group achieved level 2 at all production sites in Japan. The Group has also implemented the initiative at production sites outside Japan since fiscal 2006. With five sites newly certified in fiscal 2009, all Group production sites worldwide have achieved level 2 certification.



Reduce Volume of Waste Discharged Externally from Manufacturing

Sites That Achieved Zero Waste Targets in Fiscal 2009

Site that Achieved both Level 1 and Level 2

Konica Minolta Glass Tech (M) Sdn. Bhd. (Malaysia)

The company produces glass substrates for hard disk drives (HDDs). Most of wastes produced by the company is the sludge discharged during the glass polishing process. Though sludge is generally disposed of by landfill in Malaysia, the company has succeeded in recycling sludge as cement-making material through negotiations with relevant governmental agencies and cement manufacturers, and has drastically improved its recycling rate. Furthermore, introduction of the state-of-the-art filter press machines as part of its plant reinforcement, helped to reduce the sludge moisture content and thus hold down the amount of external discharge. Through these efforts, the company achieved both Level 1 and Level 2 at the same time, in only its second year after beginning the operation.



Konica Minolta Glass Tech (M) Sdn. Bhd.



Glass substrate for HDD

Voice

We achieved both level 1 and level 2 for our zero waste activities within about two years of the opening of our factory in March 2008. These activities have helped us to raise environmental awareness among employees. Going forward, we will pursue further reductions of environmental impact by focusing on a new target: achieving certification as a Green Factory.



Krishnan. K

Sites that Achieved Level 2

Konica Minolta Opto (Dalian) Co., Ltd. (China)

The company mainly produces optical lenses and assembles optical units, and its wastes include used plastic, cardboards, and glass abrasive sludge. The company has succeeded in reducing waste by promoting various measures, including use of returnable cardboard boxes for parts procurement, reduction of abrasive sludge, and encouraging employees to take home their personal garbage.



Konica Minolta Opto (Dalian) Co., Ltd.



Storage location for returnable cardboard boxes

* Reduction of glass abrasive sludge: Optimization of the usage conditions for the centrifugal separator reduced the sludge moisture content, which cut the amount of waste and at the same time improved the abrasive fluid recycling rate.



Before implementation



After implementation

Voice

The initiatives proved to be an enormous success in helping employees take action based on understanding the importance of “developing production activities that are in harmony with the global environment.” As expectations increase for corporate responsibility regarding the environment, we are determined to remain committed to developing a greater awareness of the global environment and to achieving Green Factory targets, not only in production activities but also in day-to-day activities as well.



Sun Kun



Gong Zhiyu



Reduce Volume of Waste Discharged Externally from Manufacturing

Konica Minolta Supplies Manufacturing France S.A.S.

The company fills toner containers for MFPs and printers, and its wastes include waste toner and cardboard. The company converted toner packaging materials shipped from Japan into reusable packaging materials for transport between Japan and Europe, changed the packaging form of parts shipped in cardboard boxes to a more simplified form of packaging, and improved production efficiency when filling bottles with toner. By implementing these changes, the company has achieved reductions in both waste and cost.



Konica Minolta Supplies Manufacturing France S.A.S.



Toner packaging materials returned to Japan



Procurement using simple packaging for toner bottles

Konica Minolta Supplies Manufacturing U.S.A., Inc.

The company fills toner containers for MFPs and printers, while its waste materials include used toner and used cardboard. The company reuses cardboard pallets obtained through toner shipments from Japan for delivery of finished products and reduces losses when it fills bottles with toner, thereby achieving reduction in both waste and cost.



Konica Minolta Supplies Manufacturing U.S.A., Inc.



Reused cardboard pallets for product delivery

Voice

We have worked hard to improve productivity and waste reduction under the lead of TPM (total productive maintenance) activity groups. We feel proud to have made contributions to the Group by maintaining a balance between cost improvement and waste reduction through various measures and achieving Zero Waste Level 2.



Ricardo Barba

Voice

We have sought to thoroughly eliminate existing waste through effective use of resources. We achieved our targets by focusing on measures such as reusing inbound cardboard pallets for shipping outbound manufactured products, and reducing toner waste when filling containers.



Frederick
M. Caiazza



Kosuke Ikeda



Reduce Volume of Waste Discharged Externally from Manufacturing

American Litho, Inc. (U.S.)

The company produces as its main product pre-sensitized plates for CTP* used in newspapers and commercial printing, which generates used aluminum as its main form of waste. In its efforts to reduce loss that arises from stopping the production line to switch to products of different widths, the company introduced an online system to change product widths without stopping the production line. The company also improved production yield by improving its cutting equipment, and took solvents recovered from coating processes and reused them for cleaning, to achieve reduction in both waste and cost.

* CTP: Computer To Plate. When preparing plates for printing, this method outputs digital data directly to a CTP digital plate without using film.



American Litho, Inc.



Pre-sensitized plates for CTP

Voice

American Litho is committed to waste reduction by implementing continuous improvement activities through administrative and engineering practices. This is particularly true with the resources dedicated to improving production yield in order to reduce waste aluminum which is the major factor in waste generation. We will continue to undertake improvement activities, even after having achieved Zero Waste Level 2, with the aim of obtaining Green Factory Certification.



Cory Kirkbride



Recycling of Used Products

Targets and Results for Fiscal 2009

Confirmed the current status of its recycling systems and promoted the specification of pertinent measures

As part of its Medium-Term Environmental Plan 2015 and its effort to recycle used products, Konica Minolta has created a fiscal 2015 target to build a recycling system for used products in every region, which will achieve a 90% recycling rate.

In fiscal 2009, the Group completed planning for fiscal 2010 and beyond, after confirming the current status of its regional recycling systems for used products and promoting the specification of pertinent measures.

Recovery and Recycling of Business Information Products

Recovery and Recycling Printer Cartridges

Konica Minolta has established a system for free-of-charge recovery and recycling of used toner cartridges in 18 European countries, as well as in the U.S., Puerto Rico and Japan. In North America and Europe, this system is called the Clean Planet Program.



Japanese website



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).



Efforts to Save Resources

Product Design to Save Resources

Endeavoring to preserve resources by promoting product development that has a light environmental impact

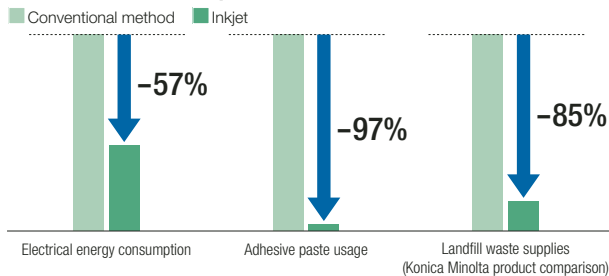
Making products lighter and more compact reduces the amount of raw materials used and saves energy during manufacturing. It also contributes significantly to reducing environmental impacts when products are disposed. By further developing its core technologies, Konica Minolta is working aggressively to develop new products that are more compact and lightweight with improved performance, employing new methods that place fewer burdens on the environment. In addition, the company is pursuing product design that considers recycling from the standpoint of effective resource utilization.

Example 1: Inkjet Textile Printer

There are two ways of printing patterns and images on textiles: screen printing, where a screen is created for each color and the textile is printed with each color in succession, and inkjet printing, where ink is directly sprayed on the textile. Konica Minolta IJ Technologies, Inc. developed and sells an inkjet textile printer that can directly print designs created on a computer.

Inkjet printing uses only the necessary amount of ink to print on specific areas of textiles. Since there is no need to create or wash screens, the amount of waste and resources used is drastically reduced. Furthermore, the production process is simple and allows for rapid additional production in response to demand, which in turn allows customers to reduce the amount of inventory. The printer's low-environmental-impact and high-mix, small-lot production features have been well received in the market and demand for the system has increased rapidly, especially in the apparel industry of Europe and Asia.

Comparison of Screen and Inkjet Printing Environmental Impact



Nasser VII textile printer

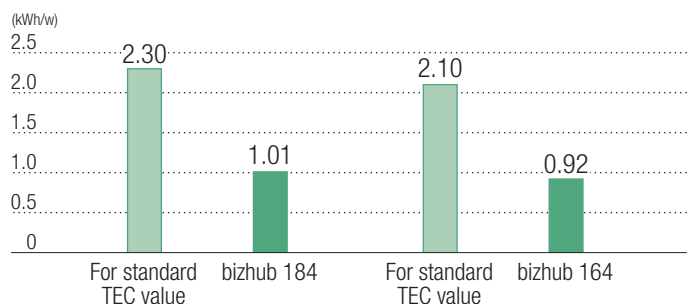
Example 2: Multi-Functional Peripherals (MFPs)

The monochrome MFP "bizhub 184/164" designed for emerging markets is 30% smaller in size and has 35% fewer parts than previous models, and requires 40% (by weight) less packaging material, thereby resulting in significant resource saving. In addition, power consumption during product use was reduced to half the standard value set by the International Energy Star Program, which, together with such changes as use of polymerized toner by using plant-based materials, has resulted in a general reduction of the environmental burden.



Monochrome MFP bizhub 164

Power Consumption of bizhub 184/164



* Power consumption for 230V unit based on measurement set in the International Energy Star Program



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.

Assuming a progressive position on such international trends, 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 which went into effect in fiscal 2009 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 used here refers to the process of delivering parts to Konica Minolta from upstream materials manufacturers via parts suppliers.

Targets and Results for Fiscal 2009

Konica Minolta updated its green procurement system and met its reduction targets for atmospheric VOC emissions

For strict management of chemical substances, including the entire supply chain, Konica Minolta has built a system for management of chemicals in products centered on a new Green Procurement System which complies with REACH regulations*¹ and with future chemical regulations. In addition, atmospheric emissions of VOCs were reduced by 78% according to the new environmental impact index*², thus meeting the target value for fiscal 2009 (67% reduction).

*¹ REACH regulations: The EU consolidated its earlier regulations concerning chemical substances, and in June 2007, enacted new regulations for the registration, evaluation, authorization and restriction of chemicals.

*² Environmental impact index: An index developed by Konica Minolta to measure the impact of VOCs. The value is obtained by multiplying the emissions with a location coefficient and a hazard coefficient, which reflect impacts on human health and the environment, for each VOC, and finally summing the products for all VOCs.

Fiscal 2009 Targets and Results (compared with fiscal 2005)

Objectives	Fiscal 2009 Targets	Fiscal 2009 Results	Target Achieved
Reducing the risk of chemical substances	Chemical substance management: Transitioning to a new Green Procurement System	Transition complete	Yes
	Atmospheric emissions of volatile organic compounds (VOCs): -67% (environmental impact index)	-78%	Yes

More information on the target areas is available at the following pages:

* Management of Chemical Substances (See page 31)

* Reduction of Atmospheric Emissions of VOCs (See page 34)



Management of Chemical Substances

Targets and Results for Fiscal 2009

Konica Minolta has updated its Green Procurement System and deployed the system at all Group companies

Konica Minolta has updated its green procurement system and deployed it at all Group companies in order to build a system for chemical substance management that will serve the needs of society going forward. Based on this, the Group is undertaking strict management of chemical substances, including the entire supply chain*, which was set as a target in the Medium-Term Environmental Plan 2015.

* Supply chain used here refers to the process of delivering parts to Konica Minolta from upstream materials manufacturers via parts suppliers.

Green Procurement

Konica Minolta has updated its Green Procurement System for a more stringent regulation of chemicals

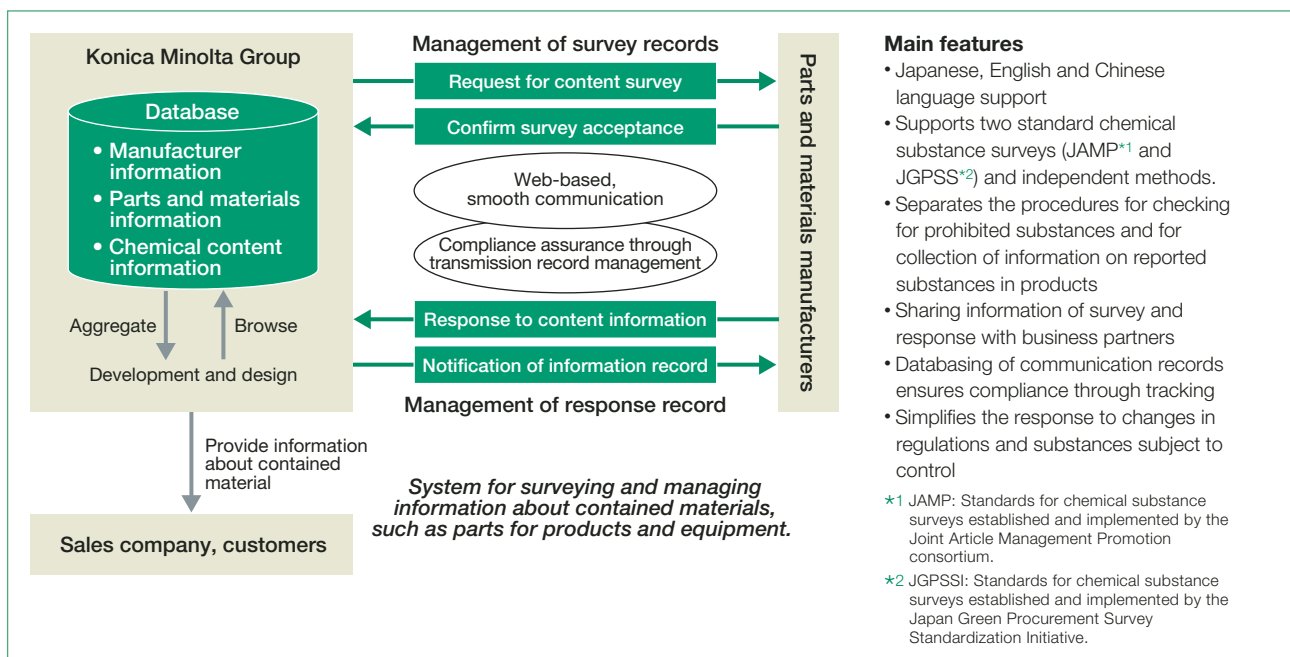
Konica Minolta implements green procurement, evaluating the contained chemical substances of parts and materials and prioritizing the purchase of products having a lower environmental impact. It defines prohibited substances and reportable substances from the point of view of legal compliance and environmental safety. The Group is working to reduce or eliminate chemical substances from its production processes and products that have an adverse impact on human health or the environment.

The revision of the RoHS Directive*1 and the announcement of registration of substances of very high concern (SVHC) in the REACH regulations*2 have sparked a growing trend towards more stringent regulations for contained chemical substances. In order to comply with these regulations, Konica Minolta updated its Green Procurement System. The new SIGMA Green Procurement System began operating in October 2009 with around 2,000 suppliers around the world. The Group's adoption of the new system will ensure that its products do not contain prohibited substances and will gradually phase out highly hazardous substances.

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

*2 REACH regulations: The EU consolidated its earlier regulations concerning chemical substances, and in June 2007, enacted new regulations for the registration, evaluation, authorization and restriction of chemicals.

The new SIGMA Green Procurement System





Management of Chemical Substances

Advanced Evaluation of Chemical Risks

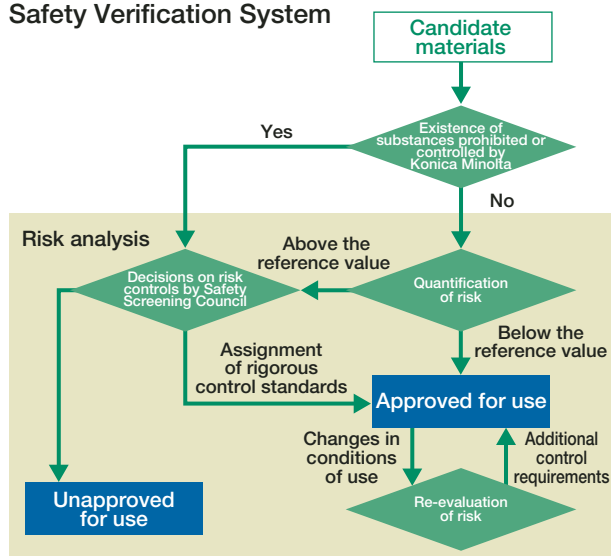
Using its unique safety verification system to achieve the appropriate management of chemicals

Konica Minolta has established the Safety Verification System for advanced investigation of risk management related to the adoption of new chemicals. When the Group cannot avoid using a chemical that poses a high degree of risk, the safety screening meeting is convened to establish rigorous requirements of control.

The evaluation scheme takes into account the forms of exposure that occur when the chemical is used, in addition to the hazards specific to the chemical and the quantities of the substance used. Exposure risk is classified into four categories ranging from “when used under rigorous safety controls (at production sites and the like)” to “when several, unspecified users are envisioned and safety controls cannot be guaranteed.” The system has established safety requirements for chemicals that take into account the various circumstances of use. In addition, after the chemical has been introduced into a manufacturing process, it is possible to reevaluate the risk according to changes in the amount used and the conditions of use.

This system has resulted in a more rational risk assessment of product safety, environmental protection, and occupational safety, and thus more appropriate control.

Safety Verification System



Action to Control Chemical Substances Emissions from Products

Undertaking product development with the aim of reducing the emission of volatile organic compounds (VOCs)

Example: Multi-Functional Peripherals (MFPs) and Laser Printers

Business information products, such as copiers and printers, are required not to have a negative effect on comfortable office environment. Therefore, Konica Minolta Business Technologies, Inc., a provider of MFPs and laser printers, is working actively to ensure that its products are certified under the German Blue Angel Mark (BAM) which strictly regulates the environmental impact of products, including noise and vibration, and emission of VOCs.

The company’s laboratory has been certified by the Federal Institute for Materials Research and Testing, Germany, as an institution qualified for measurement of emissions of chemical substances and acoustic measurement required for certification under the Blue Angel Mark. This speeds up the certification process and enables the results of testing to be applied more promptly and effectively to products.

Furthermore, in September 2008 the environmental measurement division of Konica Minolta Technology Center, Inc., which is in charge of research and development in the Group, obtained ISO/IEC 17025 accreditation, the international standard for laboratories, from the Japan Accreditation Board for Conformity Assessment (JAB), for chemical testing and analysis of harmful substances. By ensuring the reliability of its analysis and test results, Konica Minolta is further advancing its manufacturing of environmentally responsible products.



Blue Angel Mark (Germany)



Management of Chemical Substances

Countermeasures against Contamination of Soil and Ground Water

Regular inspections 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.

Summary of Contaminated Soil or Ground Water at Operation Sites

Operation site	Substances	Progress in Fiscal 2009
Tokyo Site Hino (Hino, Tokyo)	Fluorine	The company makes periodic observations at monitoring wells located at the site boundary. After purification of fluorine-contaminated soil was implemented, it has been confirmed that fluorine and other specified hazardous substances with a history of use are all below the limits set in the environmental standards, and have no impact on the surrounding environment.
Tokyo Site Hachioji (Hachioji, Tokyo)	Hexavalent chromium	The company continues to pump and treat ground water taken from wells located within the site for remediation and to prevent the dispersion of contamination. Through continued periodic observation of ground water, we have confirmed that there is no runoff from the site.
Mikawa Site, Western Zone (Toyokawa, Aichi Prefecture)	TCE*1, Fluorine	Remediation of the soil contaminated with lead and arsenic in the southwest part of the site was completed in March 2009. The company is continuing to pump and treat ground water contaminated with TCE in the northern zone of the southeast area, which started in June 2008. The extent of contamination grows smaller each year, and with the exception of an observation well, the water in all monitoring wells within the site is below the limits set in the environmental standards. Waterproof sheeting continues to be used in order to prevent permeation of rainwater and dispersal of fluorine contained in the surface soil. Through continued periodic observation of ground water, we have confirmed that there is no runoff of TCE or fluorine from the site.
Itami Site (Itami, Hyogo Prefecture)	Lead, arsenic, cadmium, fluorine, boron	The work to remove the contaminated soil from the boundary areas within the site by excavation, which started in 2007, was completed in October 2009, including restoration work. Analysis of the bottom soil during excavation and observation of ground water in the nearby monitoring wells indicates that there is no contamination by the relevant substances in the surrounding soil and ground water. In the specific area of the site that is contaminated with boron, the company continues to prevent dispersal of the contaminant by pumping water. Through periodic observation of ground water at monitoring wells, including at the site boundaries, we have confirmed that there is no runoff from the site.
Sakai Site (Sakai, Osaka)	TCE, PCE*2, c-DCE*3	Following removal of concentrated contaminated soil within the site, the company continues pumping activities and remediation treatment to prevent runoff of contaminated ground water from the site.
	Lead, arsenic, cadmium	Contamination has been confirmed at certain locations within the site. However, periodic observation of the ground water indicates that in all the monitoring wells located around the site boundary, the concentrations are below the detection limit and have no impact on the surrounding environment.
Osakasayama Site (Osakasayama, Osaka)	TCE, PCE, c-DCE	The company carried out follow-up surveys and identified residual sources of contamination. Some of these sources of contamination have been removed by excavation. The company plans to continue its work to eliminate the remaining contamination sources in fiscal 2010 and beyond.
Site of the former Nankai Optical Co., Ltd. (Kainan, Wakayama Prefecture)	TCE, PCE, c-DCE	In December 2008 after bioremediation, the water in all monitoring wells was below the limits set in the environmental standards. Ongoing observation since indicates that levels keep below the environmental standards, and in September 2009, the company reported the completion of ground water remediation to the local government. Henceforward, the company will implement surveys systematically in accordance with the Soil Contamination Countermeasures Act.
Toyohashi Precision Products Co., Ltd. (Toyohashi, Aichi Prefecture)	TCE, PCE, c-DCE, hexavalent chromium	Through pump and treat remediation of ground water, and continued periodic observation, the company ensures 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 Prefecture)	TCE, PCE, c-DCE	The company ensures that there is no runoff of the relevant substances from the site by implementing pumped water, permeable reactive barriers, and bio-barriers to remediate ground water, with continued periodic observation.
Konica Minolta Supplies Manufacturing Co., Ltd. (Kofu, Yamanashi Prefecture)	TCE, PCE, c-DCE	The company ensures that there is no runoff of the relevant substances from the site using bioremediation to purify ground water, with continued periodic observation.

Lead, arsenic, cadmium, hexavalent chromium, TCE, and PCE have been completely eliminated from use.

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



Reduction of Atmospheric Emissions of VOCs

Targets and Results for Fiscal 2009

Konica Minolta has set its own risk management index and is working to reduce VOCs

With respect to the chemical substances used in the factories, since 1993, Konica Minolta has set a target at its production sites in each country for reduction of atmospheric emissions of volatile organic compounds (VOCs), prioritizing several types of VOCs that are deemed particularly risky in terms of hazard and amount used.. The Group completely eliminated the use of particularly hazardous substances (benzene, formalin, chloroform and others) by fiscal 2004, and since then, it has been working to reduce the amounts of other chemicals used, giving priority to those that pose the higher risk.

In fiscal 2009 with the switch to the Medium-Term Environmental Plan 2015, the scope of substances subject to reductions was enlarged. In addition to reducing conventional substances that pose a direct risk to human health and a risk of atmospheric pollution, the Group will work to also reduce the use of substances that pose a risk to ecosystems and an indirect environmental impact. Consequently, Konica Minolta has revised its risk management indices, setting new environmental impact index* and new targets based on the index. The targets call for a 75% reduction by fiscal 2015 compared with fiscal 2005.

The lower rate of production in 2009 due to the economic downturn resulted in reductions of 78%, far exceeding the target of 67%. Konica Minolta will maintain these levels even as production expands in order to achieve continuous reductions in risk.

* Environmental impact index:

Environmental impact index (point) = Σ (Atmospheric emissions of VOCs [t] \times Hazard coefficient \times 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

Fiscal 2009 Targets and Results: Atmospheric Emissions of VOCs (compared with fiscal 2005)

Objectives	Fiscal 2009 Targets	Fiscal 2009 Results	Target Achieved
Reducing the risk of chemical substances	Atmospheric emissions of volatile organic compounds (VOCs): -67% (environmental impact index)	-78%	Yes



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. This problem is being addressed on a global scale under the UN Convention on Biological Diversity that took effect in 1993. The 10th Conference of Parties to the Convention of Biological Diversity (COP10) will be held in October 2010 in Nagoya.

In Japan, the Guidelines for Private Sector Engagement in Biodiversity were published in August 2009 in order to promote private sector approaches, including those involving companies. Complying with the Guidelines, Konica Minolta is working toward biodiversity conservation.

Specifically, the Group will evaluate its impact and dependence on biodiversity in its business activities, address them in priority order of their impact. The Group also put into practice measures that utilize Group resources such as technology and products.

Targets and Results for Fiscal 2009

Formulating an action plan upon evaluating its dependence and impact on biodiversity

In fiscal 2009, as a first step towards restoring and preserving biodiversity, the Group reviewed the Corporate Ecosystem Services Review (ESR) published by World Business Council for Sustainable Development (WBCSD) and evaluated its dependence and impact on biodiversity in its business activities at each step of the product life cycle.

As a result, the Group found it was having a large impact on wood materials and other wood fibers due to the use of paper in the Business Technologies business (copier, MFPs), and on global scale climate control due to CO₂ emissions generated from business activities.

Based on these results, the Group is revising its procurement standards for paper forms, and is implementing them on a global basis. Upon further study the Group will formulate an action plan for the preservation of biodiversity and implement the measures consecutively in accordance with the plan.

Fiscal 2009 Targets and Results

Objectives	Fiscal 2009 Targets	Fiscal 2009 Results	Target Achieved
Restoring and preserving biodiversity	Confirm current status and formulate plans	Evaluate business activities and their relationship to biodiversity Formulate plans	Yes

Procurement Standards for Paper Forms

Procuring copy paper in consideration of forest resource conservation

Konica Minolta Business Solutions Co., Ltd., a sales company of information technology equipment 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.

In fiscal 2010, the Group will review the Standards from a global standpoint to ensure the sustainability of forest resources.



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.

Information Disclosure

Issuing Environmental Reports

Providing environmental information in reports and online

Printed CSR Report and online environmental report are prepared to provide information on the environmental activities of the entire Konica Minolta Group. Environmental information concerning individual Konica Minolta sites in Japan is presented in reports issued by each site.

The reports are updated once a year, and PDF-file versions are available for download from the Group's environmental website.



CSR Report 2010



Environmental Report 2010



The Group's environmental website

Publication of Site Reports

Each year, the Konica Minolta sites in Japan issue their own site reports containing environmental information. These publications provide information to local residents, including an outline of the site's environmental impact. The reports describe environmental conservation activities, health, safety, and disaster prevention efforts, as well as activities for promoting interaction with local communities. Konica Minolta also utilizes these reports for establishing and revising targets and execution plans.



Site reports



Information Disclosure

Providing Environmental Information on Products

Actively supplying information concerning products using environmental labels

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

Launched in Germany in 1978 as the world's first environmental labeling system, the Blue Angel Mark is granted to certify products and services that have a smaller environmental impact. Since receiving the world's first Blue Angel certification in the field of copiers in January 1992, Konica Minolta has continued to receive certification for new products by clearing the certification bar each time it has been raised.



● Eco Mark

The Eco Mark was established by the Japan Environment Association in 1989 as a standard environmental labeling system in Japan. Konica Minolta's basic policy is to obtain Eco Mark certification for all its business information products.



● EcoLogo

Established by the Canadian government in 1988, EcoLogo is North America's most widely respected environmental standard and certification system. In 2009, Konica Minolta obtained EcoLogo certification, ahead of the competition, for 12 of its MFPs in the newly established Office Machines category.



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. Implemented in 1995 through an agreement between the Japanese and US governments, the international program has now expanded with the participation of the EU, Canada, Australia, New Zealand, Taiwan, and other countries.

All of Konica Minolta's business information products 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, from raw material procurement to production, sales, usage, disposal, and recycling.

Konica Minolta discloses environmental impact data concerning its business information products through the Eco Leaf system of Type-III environmental labeling.

Eco Leaf offers a system certification tool whereby a third-party institution certifies that a company has mechanisms for the proper and effective gathering of environmental impact data. Konica Minolta has obtained this certification for its copier and printer businesses.





Communication with Society

Participating in Exhibits

Participating in the Eco-Products Exhibition (Japan)

Since fiscal 1999, Konica Minolta has been participating in the largest environmental exhibit in Japan, the Eco-Products exhibition, which is held at Tokyo Big Sight every year.

At Eco-Products 2009, which was held in December 2009, Konica Minolta introduced its environmental vision Eco Vision 2050, along with the Group's future environmental technologies and its environmental initiatives regarding its MFP product throughout the product life cycle. Also, it projected a video program on environmental protection using its mobile digital planetarium to further introduce its environmental initiatives.



An exhibition booth at Eco-Products 2009



Exhibition and Business Meeting Held on “Responsibility for the Environment” (France)

In February 2010, Konica Minolta Business Solutions France S.A.S. held its annual exhibition and business meeting under the theme of “Responsibility for the Environment.” The company used a ship anchored to the shore of the Seine River as a venue for the exhibition and meeting, and prepared portable tables made of recycled paper to help raise environmental awareness and demonstrate its approach to the environment and the environmental quality of its products.

Also, the company took the new step of inviting business partners handling recycled paper and other recycling operations, as well as France's National Forests Office, to host booths at the exhibition. By introducing its business partners, Konica Minolta sought to provide an opportunity for its customers to gain a better understanding of its environmental activities.



Environmental and Social Contribution Activities

To earn the loyalty and trust of the local communities in which it operates, Konica Minolta is striving to fulfill its responsibility as a corporate citizen by engaging in a variety of activities that contribute to the creation of a better society.

Example: Environmental Education Programs with Local Communities (United Kingdom)

Konica Minolta Business Solutions (UK) Ltd., a business information systems sales company in the United Kingdom, works closely with local communities on an educational program to enhance the environmental awareness of children. The program aims to develop children's understanding of the importance of waste reduction through the 3R's (Reduce, Reuse & Recycle) and to empower them to make choices that have a positive impact on environmental preservation. In 2009, the company implemented the program at 20 primary schools, offering four 90-minute courses on the environment during one month.

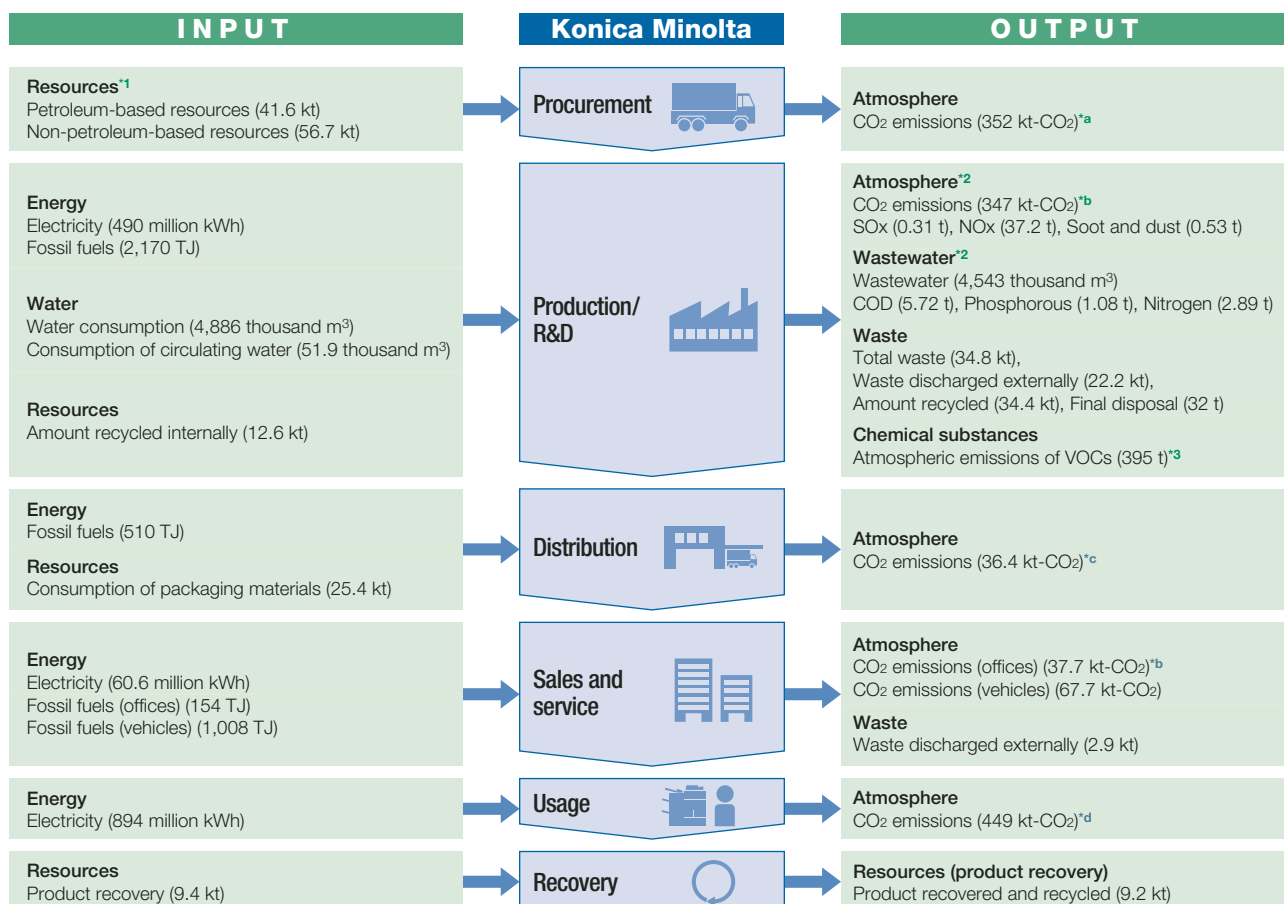
For its efforts in this regard, the company received the Green Apple Award for Environmental Best Practice in November 2009. The Green Organisation, a non-profit business, presented this award in recognition of dedicated efforts for the environment. Konica Minolta is planning to implement the program in 30 more schools in 2010.





Environmental Impacts Resulting from Business Activities

Overall Picture of Environmental Impact



*1 Input amounts for resources refer to materials for major products shipped in fiscal 2009 (not including parts for maintenance).

*2 The figures for atmospheric pollutants and water pollutants are total values for factories 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.

Method for Calculating CO₂ Emissions, and CO₂ Emissions Coefficient

*a CO₂ emissions for major products and consumable supplies are calculated by multiplying the sales amount or production amount by the emissions coefficient of each product estimated by the official value of the Ecoleaf Environment Label provided by the Japan Environmental Management Association for Industry; and for other products, multiplying the amount of resources used by the emissions coefficient of each product.

*b Calculated by multiplying the amount of energy used at the 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: Japan—2005 average value of all electrical power sources (The Federation of Electric Power Companies of Japan)
 Outside Japan—2005 emissions coefficients applicable to each country (the GHG Protocol).

*c Japanese domestic distribution, Chinese production distribution (from factory to port), and international distribution of major products are calculated by multiplying transport distance by cargo weight, and then multiplying that value by the CO₂ emissions coefficient of each means of transportation.

Japanese domestic distribution: Japan's CO₂ Emissions Calculation Method for Logistics Operations—Joint Guidelines Ver.3.0 (METI/MLIT)

Chinese production distribution, international distribution: GHG Protocol

*d CO₂ emissions for major products 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 for each model and the CO₂ coefficient (2005 world average of the GHG Protocol)

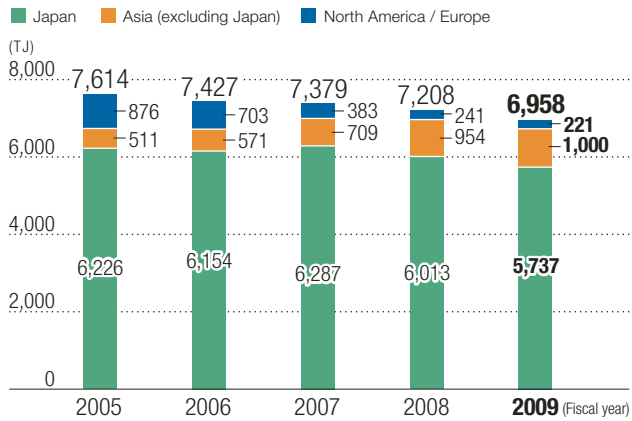
* The method used calculate CO₂ emissions is outlined on page 48.



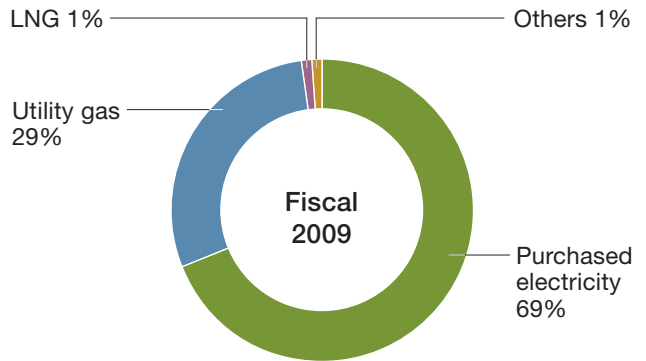
Input

Energy, Water

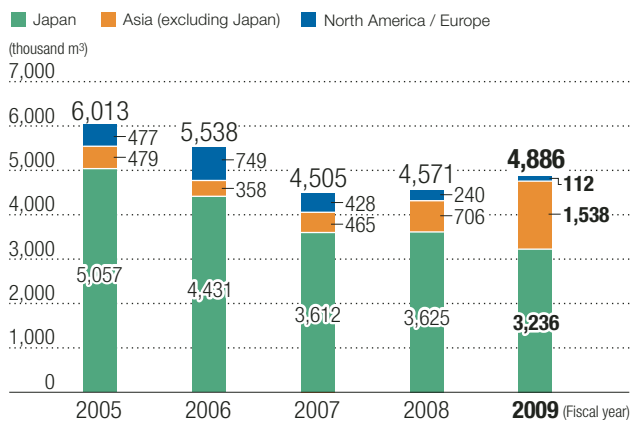
Total Energy Inputs



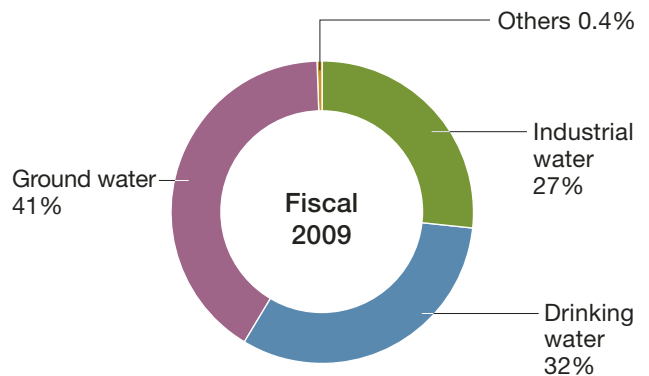
Energy Use by Type



Total Water Inputs



Water Use by Type



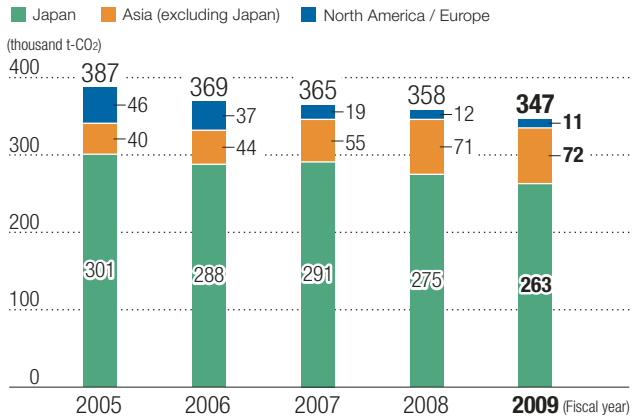
* Boundary of data: Charts cover production and R&D sites in Konica Minolta Group.



Output

Atmosphere

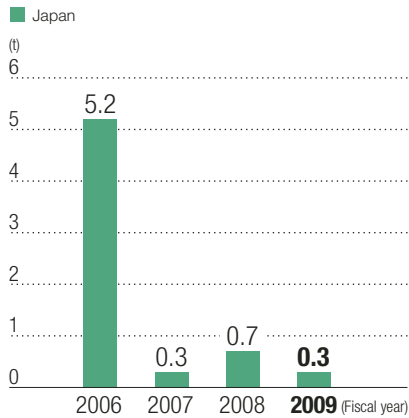
CO₂ Emissions



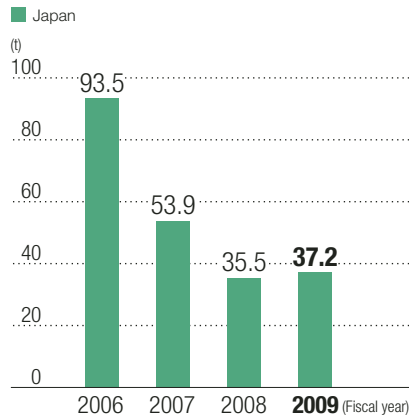
* Preparing for the transition to the new Medium-Term Environmental Plan, the Group has reviewed and revised coefficients for CO₂ emissions throughout the product life cycle. Data for past years have been restated accordingly.

* The method used to calculate CO₂ emissions is outlined on page 48.

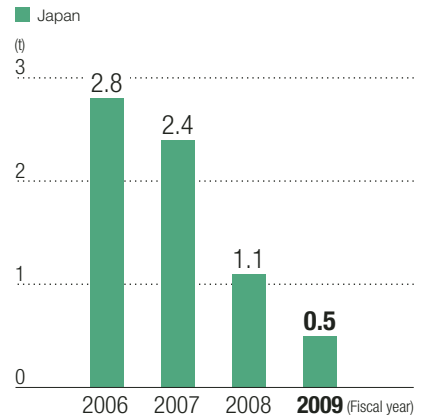
SO_x Discharged



NO_x Discharged



Soot and Dust Discharged



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

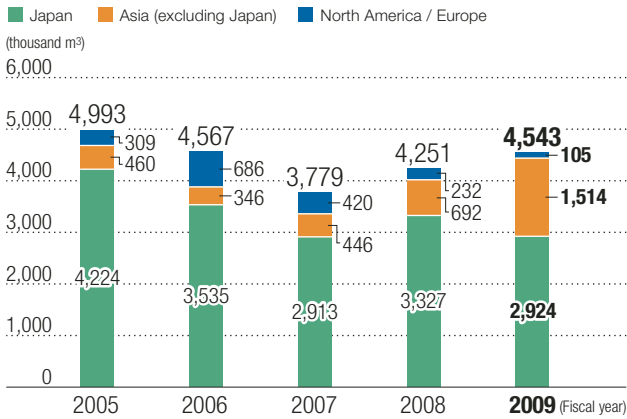
* The figures of atmospheric pollutants are total values for factories that are legally required to measure emissions.



Output

Wastewater

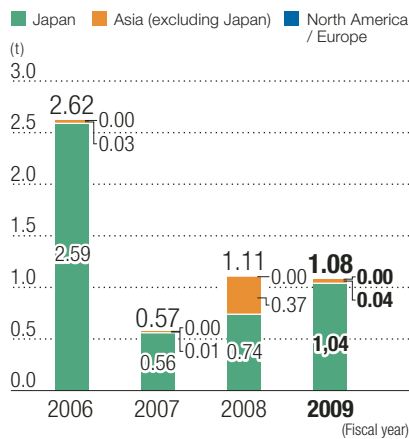
Total Wastewater



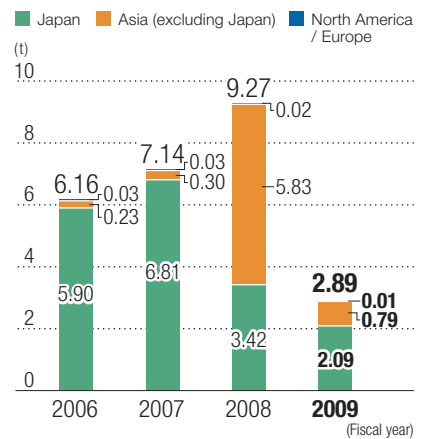
COD Discharged into Public Waters



Phosphorus Discharged into Public Waters



Nitrogen Discharged into Public Waters



* Boundary of data: Charts cover production and R&D sites in Konica Minolta Group.
 * The figures of water pollutants are total values for factories that are legally required to measure waste.

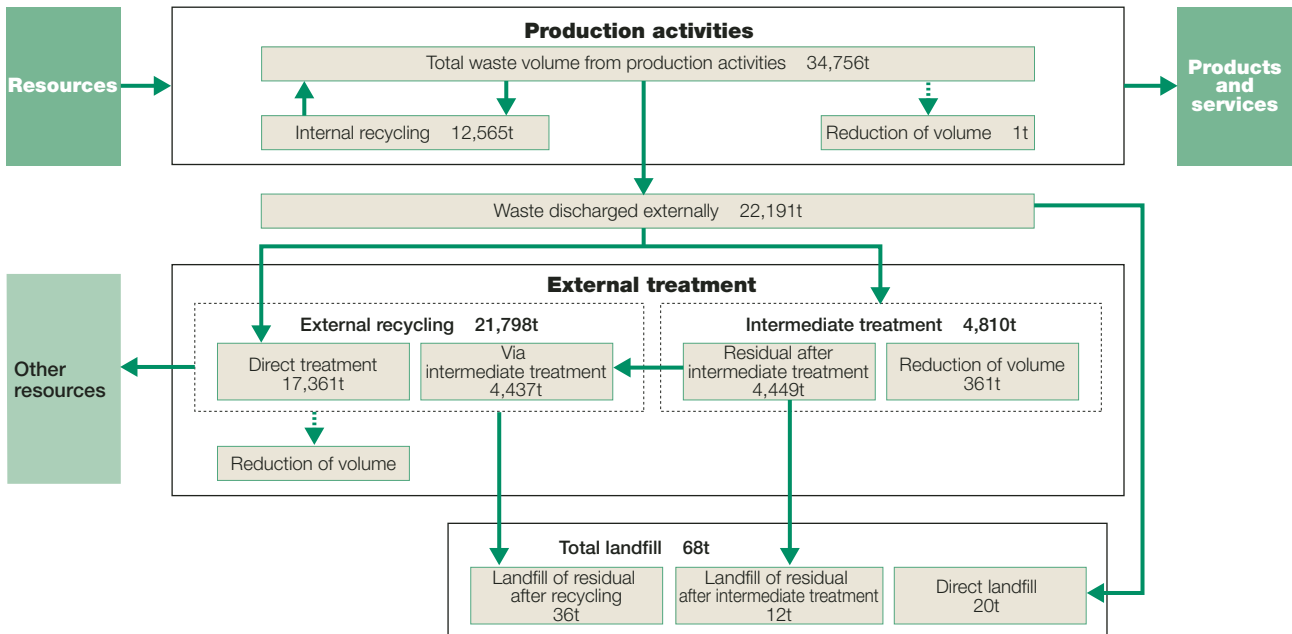


Output

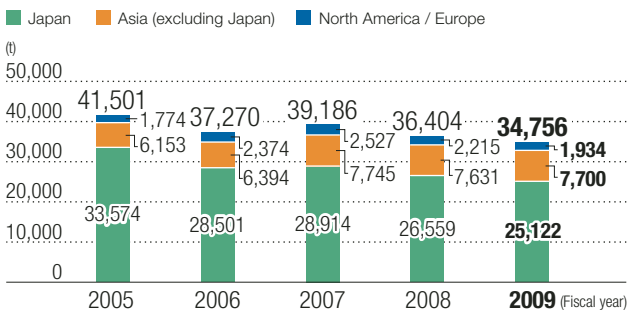
Waste

Waste Flows (Results of Recycling and Waste)

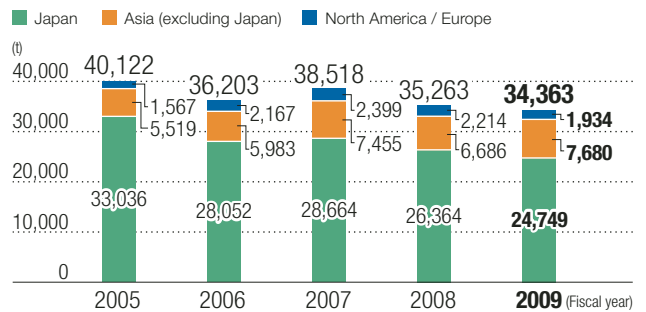
Fiscal 2009



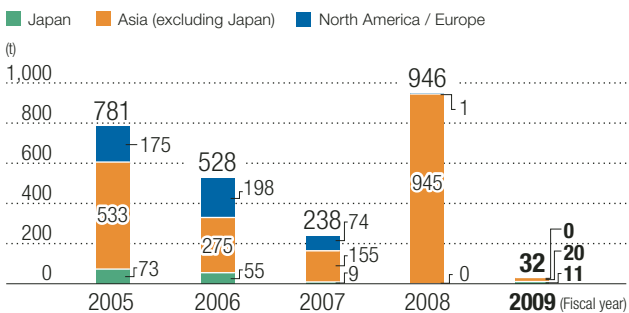
Total Waste Volume



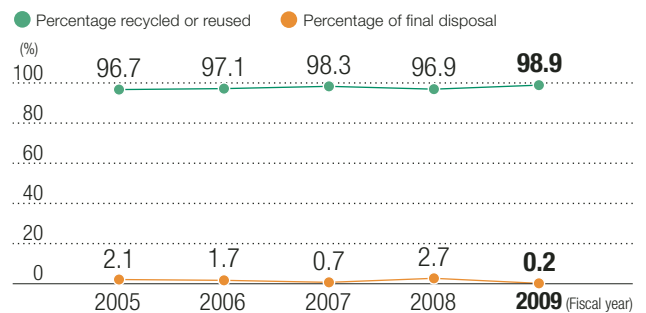
Total Volume of Recycled Resources (Internal and External Recycled)



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.

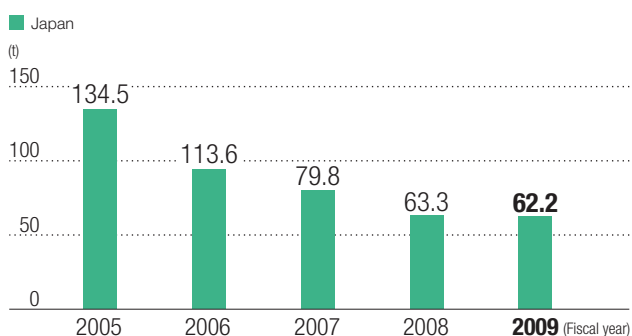
* Boundary of data: Charts cover production sites in Konica Minolta Group.



Output

PRTR substances

Atmospheric Emissions of PRTR Substances



Substances Controlled by PRTR (Pollution Release and Transfer Register) Regulations

Fiscal 2009^(t)

PRTR Law identification number	Name of chemical substance	Amount handled	Releases			A-mounts used (in products)	Treated on-site (incinerated, decomposed)	Amount transferred externally		Recycled
			To air	To water	To soil			Waste*	Sewage	
4	Ethyl acrylate	1.8	0.0	0.0	0.0	1.8	0.0	0.0	0.0	0.0
12	Acetonitrile	36.7	1.6	0.0	0.0	2.7	3.1	29.3	0.0	0.0
15	Aniline	1.0	0.0	0.0	0.0	0.4	0.0	0.6	0.0	0.0
25	Antimony and its compounds	7.7	0.0	0.0	0.0	6.3	0.0	1.5	0.0	0.0
64	Silver compounds (Ag equivalent)	361.0	0.0	0.0	0.0	354.3	0.0	6.7	0.0	0.0
117	1,1-Dichloroethylene	1.5	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0
139	o-Dichlorobenzene	2.2	0.0	0.0	0.0	0.0	0.0	2.2	0.0	0.0
145	Dichloromethane	686.3	52.1	0.0	0.0	13.0	0.0	588.7	0.0	32.5
172	N,N-Dimethyl formamide (DMF)	39.7	0.0	0.0	0.0	0.0	0.3	39.3	0.0	0.0
177	Styrene	3,390.7	3.8	0.0	0.0	3370.3	0.0	16.6	0.0	0.0
212	2,4,6-Trichloro- 1,3,5-triazine (also known as cyanuric chloride)	9.1	0.0	0.0	0.0	9.1	0.0	0.0	0.0	0.0
227	Toluene	43.1	4.3	0.0	0.0	0.0	0.1	38.6	0.0	0.0
243	Barium and its water-soluble compounds (such as barium iodide)	4.1	0.0	0.8	0.0	3.2	0.0	0.2	0.0	0.0
254	Hydroquinone	7.4	0.0	0.0	0.0	6.6	0.0	0.8	0.0	0.0
259	Pyridine	4.1	0.0	0.0	0.0	0.3	0.0	3.7	0.0	0.0
304	Boron and its compounds (B equivalent)	2.7	0.0	0.0	0.0	2.5	0.0	0.2	0.0	0.0
311	Manganese and its compounds	208.9	0.0	0.0	0.0	207.8	0.0	1.1	0.0	0.0
313	Maleic anhydride	1.1	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0
314	Methacrylic acid	307.7	0.4	0.0	0.0	305.4	0.0	1.9	0.0	0.0
316	2,3-epoxypropyl methacrylate	6.3	0.0	0.0	0.0	6.3	0.0	0.1	0.0	0.0
320	Methyl methacrylate	2.3	0.0	0.0	0.0	2.3	0.0	0.0	0.0	0.0

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

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



Production Sites of Konica Minolta Group

Production Sites (as of 2010.3.31)

Konica Minolta Production Sites in Japan

Site name or Company name	Location	Items produced
Konica Minolta Tokyo site (Hachioji block)	Hachioji-shi, Tokyo	Optical devices
Konica Minolta Itami site	Itami-shi, Hyogo Prefecture	Optical devices
Konica Minolta Osakasayama site	Osakasayama-shi, Osaka	Optical devices
Konica Minolta Kobe site	Kobe-shi, Hyogo Prefecture	Electronic materials such as triacetyl cellulose (TAC) film
Konica Minolta Seishin site	Kobe-shi, Hyogo Prefecture	Electronic materials such as triacetyl cellulose (TAC) film
Konica Minolta Tokyo site (Hino block)	Hino-shi, Tokyo	Medical and graphic imaging materials
Konica Minolta Kofu site	Chuo-shi, Yamanashi Prefecture	Medical imaging materials

Affiliate Production Sites in Japan

Site name or Company name	Location	Items produced
Konica Minolta Supplies Manufacturing Co., Ltd.	Headquarter: Kofu-shi, Yamanashi Prefecture Tasuno facility: Tatsuno-shi, Nagano Prefecture	Consumables of multi-function peripherals (MFPs) and laser printers
Konica Minolta Supplies Manufacturing Kansai Co., Ltd.	Headquarter: Miki-shi, Hyogo Prefecture Seishin facility: Kobe-shi, Hyogo Prefecture	Consumables of multi-function peripherals (MFPs) and laser printers
Toyohashi Precision Products Co., Ltd.	Toyohashi-shi, Aichi Prefecture	Consumables of multi-function peripherals (MFPs) and laser printers
Konica Minolta Electronics Co., Ltd.	Tsuru-shi, Yamanashi Prefecture	Electronics parts
Konica Minolta Opto Products Co., Ltd.	Headquarter: Fuefuki-shi, Yamanashi Prefecture Yamanashi site: Minamitsuru-gun, Yamanashi Prefecture	Optical devices
Konica Minolta Components Co., Ltd.	Toyokawa-shi, Aichi Prefecture	Optical devices
Konica Minolta Glass Tech. Co., Ltd.	Headquarter: Osakasayama-shi, Osaka (within Osakasayama site) Iruma facility: Iruma-shi, Saitama Prefecture Itami facility: Itami-shi, Hyogo Prefecture (within Itami site)	Optical devices
Konica Minolta Opto Device Co., Ltd.	Osakasayama-shi, Osaka (within Osakasayama site)	Optical devices
Konica Minolta Technoproducts Co., Ltd.	Headquarter: Sayama-shi, Saitama Prefecture Hachioji facility: Hachioji-shi, Tokyo (within Tokyo site)	Medical and graphic imaging equipment
Konica Minolta Chemical Co., Ltd.	Fukuroi-shi, Shizuoka Prefecture	Chemicals

Affiliate Production Sites outside Japan

Site name or Company name	Location	Items produced
Konica Minolta Business Technologies (Wuxi) Co., Ltd.	China	Multi-function peripherals (MFPs), laser printers and consumables
Konica Minolta Business Technologies (Dongguan) Co., Ltd.	China	Multi-function peripherals (MFPs), laser printers and consumables
Konica Minolta Supplies Manufacturing U.S.A., Inc.	United States	Consumables of multi-function peripherals (MFPs) and laser printers
Konica Minolta Supplies Manufacturing France S.A.S.	France	Consumables of multi-function peripherals (MFPs) and laser printers
Konica Minolta Opto (Dalian) Co., Ltd.	China	Optical-related products
Konica Minolta Optical Products (Shanghai) Co., Ltd.	China	Optical devices
Konica Minolta Glass Tech (M) Sdn. Bhd.	Malaysia	Optical devices
American Litho, Inc.	United States	Graphic imaging materials



Environmental Accounting

Implementation of Environmental Accounting

Implementing Group consolidated accounting on a global basis

At Konica Minolta, an environmental accounting manager is appointed at each Group company and the Group carries out consolidated environmental accounting globally, from research and development to production and sales.

The amount invested in fiscal 2009 was about the same as in fiscal 2008, about ¥1.2 billion. Expenses were 25% less than in fiscal 2008, about ¥11.2 billion. Of these amounts, research and development accounted for approximately 62% of investment and approximately 31% of expenses. The main uses of these investments and expenses include efforts to improve energy conservation in production processes, equipment investment for new product development that contributes to the environment, and development of energy-saving technologies for business information systems.

Results for Fiscal 2009 and Budget for Fiscal 2010

(Unit: ¥1 million)

Types of Environmental Conservation Activities	Major Initiatives	Fiscal 2009 Results			Fiscal 2010 Budget	
		Investment	Expenditures	Economic Benefits	Investment	Expenditures
1. Business area cost		364	3,610	13,378	2,063	3,634
1) Pollution prevention cost	Reduced VOC emissions and managed chemical substances in the optics business	152	1,687	6	1,094	1,788
2) Preventing global warming cost	Promoted energy conservation	194	474	355	404	459
3) Resource circulation cost	Restricted use of solvents and plastics in optics business, and recovered silver from waste	18	1,450	13,017	565	1,388
2. Upstream / downstream costs	Collected and recycled products in business technologies business, and recovered silver from collected products	7	2,321	2,217	6	892
3. Administration cost	Implemented environmental management systems	40	1,596	0	3	1,306
4. R&D cost	Conducted R&D for energy efficient business information systems and for new products that contribute to environmental conservation	736	3,223	5	77	3,984
5. Social activity cost	Conducted nature conservation activities	0	107	0	0	102
6. Environmental remediation cost	Restored contaminated soil	34	365	0	54	354
7. Other costs		0	3	0	0	3
Total		1,180	11,225	15,601	2,203	10,275



Environmental Accounting

Fiscal 2009 Results: Environmental Conservation Benefits

Stage	Type of benefit	Benefits
Production	Water use reduced ^{*1}	478 thousand m ³
	Electricity reduced ^{*1}	11.1 million kWh
	Natural gas reduced ^{*1}	3,006 thousand m ³
	Heavy oil reduced ^{*1}	135 kL
	Emissions of target chemical substances reduced ^{*1}	11.2 t
	Resource input reduced ^{*1}	84.8 kt
	External recycling and reuse of waste ^{*2}	21.8 kt
Sales	Packaging reduced ^{*1}	110 t
	Recycling and reuse of materials from used products ^{*2}	9.2 kt
Usage	CO ₂ emissions reduced ^{*3}	3.5 kt-CO ₂

*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 CO₂ emissions are calculated for major new products that were shipped in fiscal 2009 by subtracting the estimated CO₂ emissions associated with the new products in use from the estimated CO₂ emissions associated with the conventional products in use.

Fiscal 2009 Results: Impact of End User Usage

Stage	Type of benefit	Benefits
Usage	Electricity consumption reduced ^{*4}	7.1 million kWh
	Electricity bills reduced ^{*5}	102 million yen

*4 Electricity consumption reduced is calculated for major new products that were shipped in fiscal 2009 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 2009 Results

10 Group companies, including the holding company, business companies, and common function companies

Konica Minolta Holdings, Inc.
 Konica Minolta Business Technologies, Inc.
 Konica Minolta Opto, Inc.
 Konica Minolta Photo Imaging, Inc.
 Konica Minolta Medical & Graphic, Inc.
 Konica Minolta Sensing, Inc.
 Konica Minolta Technology Center, Inc.
 Konica Minolta Business Expert, Inc.
 Konica Minolta IJ Technologies, Inc.
 Konica Minolta Planetarium Co., Ltd.

19 Japanese affiliates

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 Opto Products Co., Ltd.
 Konica Minolta Components Co., Ltd.
 Konica Minolta Opto Device Co., Ltd.
 Konica Minolta Glass Tech. Co., Ltd.
 Konica Minolta Repro Co., Ltd.
 Konica Minolta Technoproducts Co., Ltd.
 Konica Minolta Healthcare Co., Ltd.
 Konica Minolta Graphic Imaging Japan Co., Ltd.

Konica Minolta Chemical Co., Ltd.
 Konica Minolta Technosearch Co., Ltd.
 Konica Minolta Engineering Co., Ltd.
 Konica Minolta Logistics Co., Ltd.
 Konica Minolta Sogo Service Co., Ltd.

21 affiliates outside Japan

Konica Minolta Business Technologies (Dongguan) 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.
 American Litho, Inc.
 Konica Minolta Graphic Imaging U.S.A., Inc.
 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.



Standards for Calculating CO₂ Emissions

Boundary and Standards for Calculation

(Period covered April 1, 2009 to March 31, 2010)

Stage		Methods of calculation
1. Procurement	1) Boundary	Business information systems and consumable supplies, optical products, medical and graphic imaging equipment
	2) Standards	CO ₂ emissions for business information systems and consumable supplies are calculated by multiplying the sales amount or production amount by the emissions coefficient of each product as estimated by the official value of the Ecoleaf Environment Label provided by the Japan Environmental Management Association for Industry; and for other products, multiplying the amount of resources used by the emissions coefficient of each product.
2. Production/R&D	1) Boundary	All production and R&D sites around the world
	2) Standards	CO ₂ emissions are calculated by multiplying the amount of energy used at each site 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
3. Distribution	1) Boundary	Japanese domestic distribution, Chinese production distribution (from factory to port), and international distribution of business information systems, optical products, medical and graphic imaging equipment
	2) Standards	CO ₂ emissions are calculated by multiplying transport distance by cargo weight, and then multiplying that value by the CO ₂ emissions coefficient of each means of transportation. Japanese domestic distribution: Coefficients stipulated in Japan's <i>CO₂ Emissions Calculation Method for Logistics Operations—Joint Guidelines Ver.3.0</i> Chinese production distribution and international distribution: Coefficients specified by the GHG Protocol
4. Sales and service	1) Boundary	Major sales companies around the world
	2) Standards	Offices: CO ₂ emissions are calculated by multiplying the amount of energy used at main sites (including estimated values for some sites) by the following coefficients. Vehicles: CO ₂ 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 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
5. Usage	1) Boundary	Business information systems, medical and imaging equipment (Optical products are excluded since they are used as parts of other companies' products)
	2) Standards	CO ₂ 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* for each model and the CO ₂ coefficient equal to the 2005 world average value specified by the GHG Protocol * The annual amount of electrical consumption for business information systems is estimated based on the Typical Electricity Consumption (TEC) value set by the International Energy Star Program, and for medical and imaging equipment it is estimated based on each product's specifications.

Notes:

Business information systems include multi-functional peripheral (MFP), printer and other products manufactured and marketed by Konica Minolta Business Technologies, Inc.

Optical products include pickup lens, TAC film and other products manufactured and marketed by Konica Minolta Opto, Inc.

Medical and graphic imaging equipment include medical and graphic imaging devices and other products manufactured and marketed by Konica Minolta Medical & Graphic, Inc.

From CSR Report Special Features

* For more details please refer to CSR Report 2010.

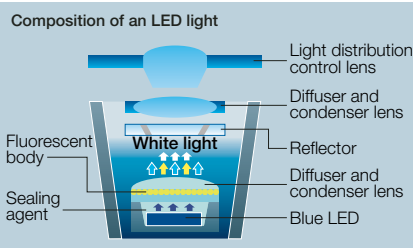



1. Taking on New Challenges in the Environment and Energy Businesses

Contributing to the Realization of a Sustainable Society by Integrating Diverse Technologies

Konica Minolta is now expanding into new business areas where it can make more positive contributions to the environment by making the most of its long-established array of uniquely diversified technologies.

Konica Minolta Businesses in the Environment and Energy Fields

<p>Organic light-emitting diode (OLED) lighting (See page P50)</p> <p>Konica Minolta is developing a next-generation lighting technology which takes advantage of the light-emitting properties certain organic materials have when subjected to an electrical current.</p> <p>Main characteristics</p> <ul style="list-style-type: none"> •Saves energy •Light source is a surface •Light, thin and flexible 	<p>Organic thin-film photovoltaics (See page P50)</p> <p>Konica Minolta is developing next-generation photovoltaics that uses the ability of certain organic materials to generate electricity when subjected to light.</p> <p>Main characteristics</p> <ul style="list-style-type: none"> •Lightweight •Flexible •Transparent
<p>LED lighting</p> <p>LED lighting has become popular as a power-saving form of lighting. Recently, Konica Minolta Opto, Inc. has started to supply heat-resistant glass lenses to lighting equipment manufacturers to be used as diffuser and condenser lenses, which are important components of LED lighting.</p> 	<p>Beam-down process solar thermal power generation</p> <p>Konica Minolta Opto, Inc. has developed a reflector with 98% or higher reflectance, allowing for the full use of optical energy as heat. The company has been supplying reflectors for the pilot installations for a solar thermal project which started in 2010 in the United Arab Emirates.</p>  <p><small>Image provided by Cosmo Oil Co., Ltd.</small></p>

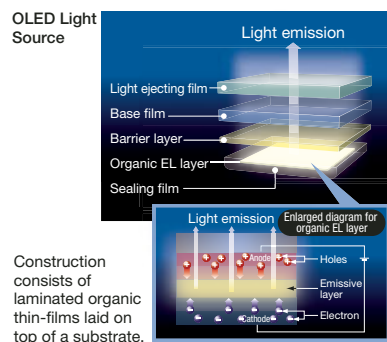
Applying Organic Material Technology to the Lighting and Natural Energy Fields

Organic materials derived from organic compounds are easily processed and are lightweight and flexible. Thus, they are utilized widely in industrial fields. They have attracted attention for their potential use in semiconductor materials, which until now have relied on inorganic substances such as silicon.

Organic materials which display semiconductor characteristics have properties that transform electricity to light (light emission) and light into electricity (electricity generation) by controlling the electrical current. Konica Minolta continues to develop OLED lighting and organic thin-film photovoltaic panels, taking advantage of these properties.

Developing Blue Phosphorescent Materials Using Technologies for Synthesizing Organic Materials

Konica Minolta has succeeded in developing a blue phosphorescent material with both light emission efficiency and durability by applying technology for synthesizing organic materials developed in its work on photo-sensitized materials. In laboratory experiments in 2006, a white organic EL lighting device employing this blue phosphorescent material achieved light emission efficiency and durability which compares with those of a fluorescent lamp.



Prototype of Konica Minolta OLED lighting



Taking on New Challenges in the Environment and Energy Businesses

Organic Light-Emitting Diode (OLED) Lighting

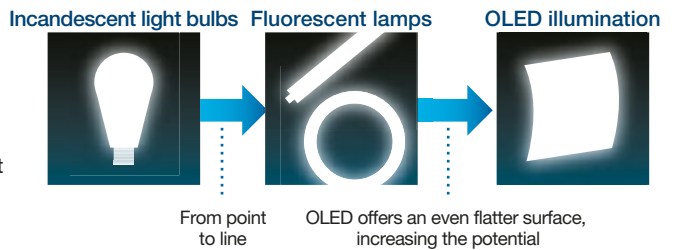
High-level Light Emission Efficiency Contributes to the Reduction of Energy Consumption

The environmental impact of OLED lighting is small because, unlike fluorescent lamps which contain mercury, it does not contain substances that can harm the environment after disposal.

Furthermore, thanks to its high light emission efficiency (the efficiency of converting electricity to light), OLED lighting holds the future promise of reducing energy consumption compared to current mainstream fluorescent light sources. Society has high expectations for the practical application of OLED lighting as a technology of low environmental impact.

New Source of Lighting That Evenly Illuminates Wide Surface Areas

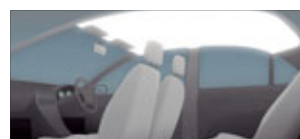
Until now, spaces have been illuminated by point or linear light sources, such as incandescent light bulbs and fluorescent lamps. OLED lighting, in contrast, has characteristics not found in conventional lighting, emitting a uniform light from the whole surface, over a large area. Moreover, OLED lighting closely resembles natural light. Not only that, it does not include ultraviolet rays, which reduces negative impact on the eye.



Lightweight, Thin, Flexible OLED Lighting Has Multiple Potential Applications

With OLED lighting, the light source itself illuminates a wide area evenly. This makes it possible to have an entire ceiling or wall serve as an illumination device.

Moreover, if plastic film is used for the substrate base, then flexibly curved lighting becomes a real possibility in the future. OLED lighting offers greater potential for applications, including revolutionary design of indoor lighting and new applications in interior spaces, illumination inside vehicles and aircraft, novel monuments and artworks, and other exciting lighting options.



Examples of applications

Organic Thin-film Photovoltaic Panels

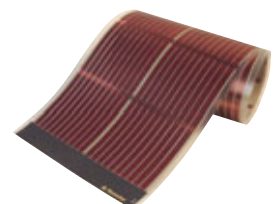
Developing New Photovoltaic Panels That Are Lightweight, Flexible and Transparent

Konica Minolta began developing organic thin-film photovoltaic panels in April 2010, in collaboration with the U.S. company Konarka Technologies, Inc., a technologically sophisticated manufacturer that was the first in the world to commercialize this type of photovoltaic panel. By combining the company's expertise with the Group's wealth of technologies, Konica Minolta aims to dramatically improve photovoltaic conversion efficiency, achieve longer life, and reduce manufacturing costs.

The organic thin-film photovoltaic panels currently under development are expected to exhibit properties unlike traditional photovoltaic panels, such as being lightweight, flexible, and transparent, as well as being capable of generating electricity via incoming light at shallow angles or with limited brightness. Such properties will make an array of new applications possible, including attaching photovoltaic panels to windows on buildings and large canopy covers.



Examples of applications



Konarka Technologies, Inc. organic thin-film photovoltaic panel



2. Polymerized Toner — an Innovative Choice

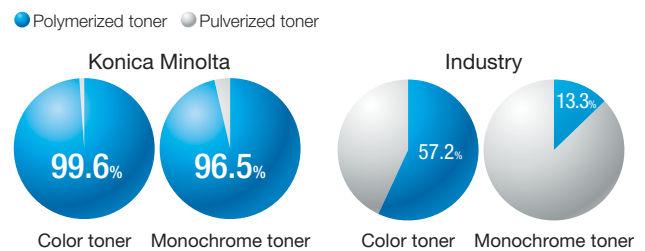
A Next-Generation, High-Performance Toner Created through Chemical Reaction

Polymerized toner is a high-performance toner produced by chemically combining a resin with color pigment particles. Unlike conventional pulverized toner, which is made by crushing lumps of plastic into small particles, the polymerized method enables precise control of the structure of each toner particle. This, in turn, makes it possible to tailor the size and shape of each particle and impart various properties to it.

Early on, Konica Minolta focused on the potential of toner made through chemical reaction that could enable high-quality printing and save energy, and thus began research and development of an emulsion polymerization method*1. The Group began to manufacture its original polymerized toner, Simitri toner, in December 2000, and became the first in the world to introduce polymerized toner for use in a monochrome MFP. Konica Minolta has adopted polymerized toner in nearly all Konica Minolta printing products, from entry-level models to high-speed production printing machines, whether monochrome or color.

*1 Emulsion polymerization method: A method of chemically combining a resin base, a color pigment and wax by dispersing them in an aqueous surfactant solution.

Adoption of Polymerized Toner (2009)



Source: The estimated toner production for 2009 from the 2009 Toner Market Directory by Data Supply Inc.

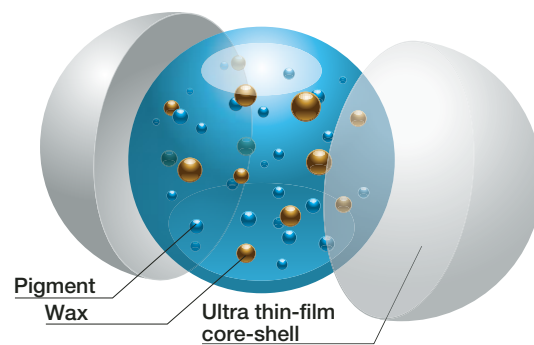
Polymerized Toner Saves Energy and Conserves Resources When in Use

When printing images using MFPs and printers, the process of fusing the toner with heat and fixing it to paper consumes the most electricity. The small and uniform polymerized toner particles conduct heat more efficiently than pulverized toner particles, and their low fusing point also means that less electricity is consumed during the fusing process.

In an effort to achieve greater power savings through the performance of low-temperature fusing, Konica Minolta developed a new type of polymerized toner, Simitri HD toner. This product features a core-shell configuration comprised of a thin outer layer of hard resin wrapped around a soft core of inner resin, to enable fusing at a lower temperature while also offering the thermostability required for high-speed printing. With such characteristics, polymerized toner has been adopted and used in many of Konica Minolta MFPs and printers.

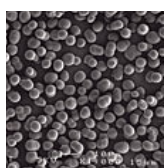
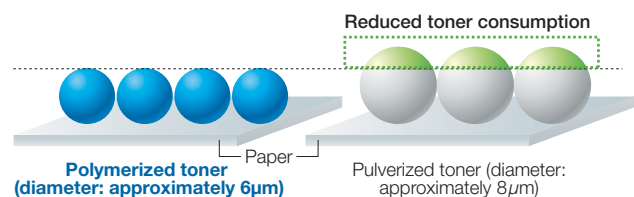
The small size of polymerized toner particles also helps reduce the amount of toner consumed when printing the image. Thus Konica Minolta's polymerized toner products not only save energy, but also conserve resources.

Core-shell Configuration of Konica Minolta's Polymerized Toner (The diagram represents Simitri HD+*2 toner)

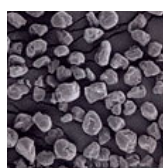


*2 Simitri is the trademark for Konica Minolta polymerized toner. The term "Simitri" was coined from the word symmetry.

Illustration of How Smaller Particles Can Reduce Toner Consumption



Polymerized toner



Pulverized toner



Polymerized Toner — an Innovative Choice

Reducing Petroleum Resource Usage by Adopting Plant-based Biomass Material

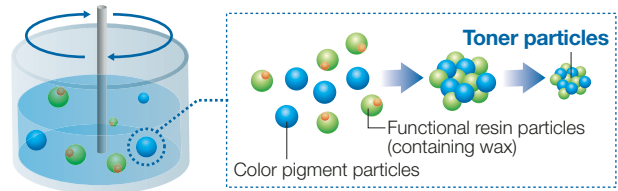
Since first manufacturing polymerized toner in 2000, roughly 9% of the raw material used to make Konica Minolta toners has been plant-based biomass.*1

Konica Minolta polymerized toner contains wax dispersed evenly during manufacturing, thereby realizing oil-free fixing*2 when printing. By using plant-based materials for the wax component in all colors of toner—cyan, magenta, yellow, black—it reduces the use of materials derived from petroleum, a finite resource.

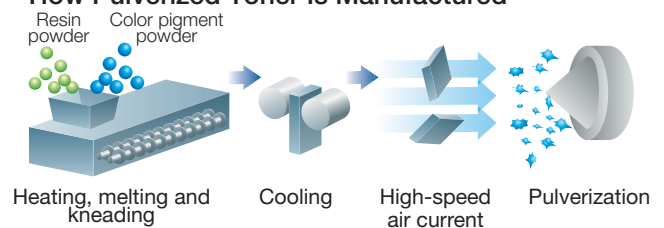
*1 Biomass: Renewable bio-organic resources other than fossil-derived resources.

*2 Oil-free fixing: This is a way to exfoliate toner from the roller and fix it to the paper without using oil applied to a heat roller. It enables higher quality output by suppressing unwanted glare and blur in the image.

How Polymerized Toner Is Manufactured



How Pulverized Toner Is Manufactured

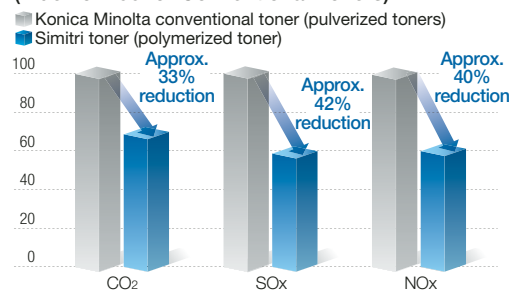


Simple Manufacturing Methods Greatly Reduce CO₂, SO_x, and NO_x Emissions

Producing pulverized toner entails an involved process for crushing after making the lumps of plastic and consumes a great amount of energy for pulverization. It produces irregular sized particles which need sorting, and also results in lower production yields.

Polymerized toners, on the other hand, entail a relatively simple manufacturing process using chemical synthesis to make the toner particles. This reduces energy consumption and also ensures uniform particle size, which minimizes the sorting needed. Compared to pulverization methods, these advantages help to reduce generation of CO₂ and the acid-rain causes SO_x (sulfur oxide) and NO_x (nitrogen oxide), thereby significantly reducing environmental impact.

Environmental Impact Reduction Effectiveness (Index of 100 for Conventional Toners)

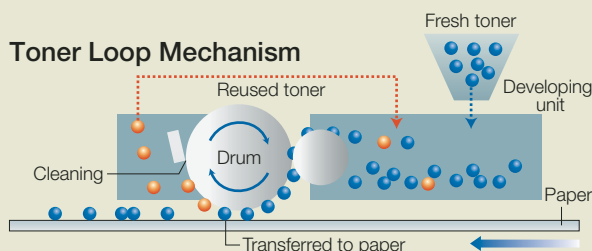


Resource-Saving Efforts in Toner Products

Toner Loop Mechanism Uses Toner without Waste

Konica Minolta equips nearly all of its monochrome MFP models and some monochrome laser printers with its unique Toner Loop Mechanism inside the machine which collects, circulates and reuses any toner not fixed to the paper during printing. This system helps realize resource conservation by reducing the amount of wasted toner to zero—a big improvement over the 5-10% of toner normally wasted.

Toner Loop Mechanism



Toner Bottles Incorporate Recycled Plastic

Konica Minolta incorporates up to 40% recycled plastic material in the toner bottles used for MFPs, which helps to lower total use of petroleum-based resources. The Group also collects and recycles used toner bottles.



Toner bottles containing recycled plastic

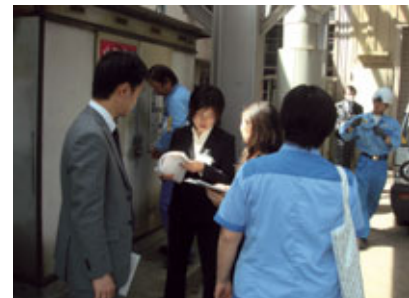
External Assurance



Konica Minolta engaged KPMG AZSA Sustainability Co., Ltd. to provide assurance on its CO₂ emissions and energy-use data found in this report. KPMG AZSA Sustainability has expressed its conclusion in its independent assurance report on whether the data has been measured, gathered and disclosed in accordance with the criteria set by the Group.



Period: March - May 2010



Site inspection at the Tokyo Site



Assurance procedures being conducted

Comments

Naomi Sugo

KPMG AZSA Sustainability Co., Ltd.

Konica Minolta has set its CO₂ emissions target with an awareness of the significance of “Scope 3 emissions*,” such as the CO₂ emitted during the use of its products. Furthermore, timed with the first year of the Group’s Medium-Term Environmental Plan 2015, the Group has dedicated its efforts, starting with this report, to improving the reliability and transparency of disclosed information by reporting the scope and calculation method of performance data in a detailed manner, and having its energy use and CO₂ emissions assured by an independent party. On the other hand, the company has yet to establish a robust control system that effectively detects anomalies in data in a timely manner for CO₂ emissions

resulting from production and sales, which are calculated based on energy consumption data reported every month by each production site and domestic sales site. A system to analyze the data in a timely manner and then require an explanation in cases where there are large fluctuations in consumption is deemed necessary. Lastly, CO₂ emissions due to distribution, which are considered Scope 3 emissions, are calculated based on the data reported by each business company, but the calculation procedures are yet to be fully consistent among the companies.

* Scope 3 emissions: “Other indirect emissions,” aside from “direct emissions” (Scope 1) and “energy indirect emissions” associated with the use of purchased electric power and heat (Scope 2)