

Expansion and Promotion of Environmental Management

Highlights

Efforts by Nanjing Nikon Jiangnan Optical Instrument Co., Ltd. (NNJC)

NNJC commenced full-scale environmental initiatives in 2007 amid a rising momentum for environmental measures in China in preparation for the Beijing Olympics. With little knowledge and no expertise on the environment yet, it was a start without a clear direction. We launched the Environment and Safety Committee, established a secretariat, and introduced a simplified EMS. At the same time, a walk-through survey on energy efficiency²⁴ was conducted by the relevant departments at Nikon Corporation, and specific areas for improvement were identified.

The thermal insulation of existing buildings was not particularly good, and any major replacement of facilities and equipment would have required enormous outlays. Therefore, we began with raising awareness for the importance of energy conservation, and getting all employees to make more immediate improvements. We steadily implemented improvement after improvement, such as reviewing the temperature settings on the air-conditioning systems, thinning out the fluorescent lights, rendering the amounts of energy consumed in each process into a visible form, and reducing air leaks from air guns. During the year ended March 31, 2010, we achieved our target of 15% reduction in CO₂ emissions per unit of sales compared to the year ended March 31, 2006. We were also certified under the Nikon Group's integrated ISO 14001²⁴ environmental management system during the year ended March 31, 2011.

In June 2011, in recognition of these solid efforts, we received an Outstanding Environmental Contribution Award as part of the Nikon Environmental Commendation Program. At NNJC, efforts are underway for further energy savings and CO₂ reductions. For instance, we have plans to introduce individual air-conditioning systems, and for energy-saving measures when rebuilding or extending our existing buildings.



Members in charge of promoting environmental measures



Energy-saving power strips distributed to all employees, along with labels urging employees to turn them off when going home or leaving the office

Voice Significant results achieved by improving environmental awareness

Prior to conducting activities for the reduction of CO₂ emissions, employees were not all that aware of environmental problems. I think this was the reason why there was so much wasteful use of electricity and energy. In promoting activities for the reduction of CO₂ emissions, we first educated employees about the environment. We also kept records of monthly electricity usage that employees could physically see, and we reaffirmed how activities were going in conjunction with utilization of the environmental management system based on ISO 14001. As a result of these activities, employees became much more aware of the environment, and we achieved success in reducing CO₂ emissions. Going forward, in addition to reducing CO₂ emissions, NNJC will also endeavor to achieve zero emissions²⁴ of waste.

Chen Hao
General Affairs Section, Management Department,
Nanjing Nikon Jiangnan Optical Instrument Co., Ltd.



Environmental Management

In committing the entire group to the Nikon Basic Environmental Management Policy and engaging in effective environmental preservation through its Environmental Management System (EMS), the Nikon Group aims to become an environmentally harmonious enterprise that contributes to the development of a recycling-oriented society in all its business activities.

The Nikon Basic Environmental Management Policy

The Nikon Group created the Nikon Basic Environmental Management Policy, which aims to prevent environmental pollution by using

resources efficiently and helping to preserve the global environment so that it would be able to pass on a sustainable and healthy environment to further generations. Following are the action guidelines that form the framework for this policy.

Action Guidelines

- (1) We will make every effort to promote reductions of CO₂ and waste emissions, reuse and recycling, while encouraging energy and resource conservation, waste reduction and conscientious waste processing with the goal of creating an environmentally-conscious recycling society.
- (2) We will perform environmental and safety reviews, including those to conserve biodiversity[□], at every stage of planning, development and design, in order to provide products that fully comply with environmental protection aims.
- (3) At every stage of production, distribution, use and disposal, we will actively introduce materials and equipment that are effective in protecting the environment, including conservation of biodiversity, strive to develop and improve technologies in this area, and work to minimize environmental burdens.
- (4) We will meet targets for reduction of our environmental burdens and use of harmful substances, and continue to improve our environmental management system through environmental audits and other means.
- (5) We will develop and follow a rigorous code of standards, in addition to observing all environmental conservation treaties, national and regional laws and regulations.
- (6) We will conduct ongoing education programs to further employee knowledge of environmental issues and promote employee involvement in environmental activities.
- (7) We will provide business partners with guidance and information to promote optimal environmental protection activities.
- (8) In cooperation with our stakeholders[□], we will participate actively in the environmental protection programs of society at large, and actively disclose information.

Business Activities and the Environment

A company is like a living organism, functioning within the global environment. As it grows, providing products and services to society, it consumes various resources and energy and generates waste. As the need to build a recycling-based society grows, companies must also gain a clear understanding of their own environmental impacts and execute more advanced ecological management.

In addition to making steady efforts to reduce waste and other environmental impacts, the Nikon Group has also been actively engaged in its own unique activities, a notable example of which is the development of Eco-glass[□], which has an amazingly small environmental footprint. During the year ended March 31, 2012, we sought to expand the scope of our environmental management system, and we continued to focus our efforts on CO₂ emissions reduction and on the reduction and management of hazardous chemical substances.



Nikon Environment Symbol

Relationship with the Environment in the Nikon Group's Business Operations



Expansion and Promotion of Environmental Management

Nikon Group's Principal Environmental Impacts (for year ended March 31, 2012)

INPUT		Nikon Corporation facilities	Group manufacturing companies in Japan	Units
Energy	Electricity	160,695	92,159	MWh
	City gas	6,013	1,425	thousand Nm ³
	Liquefied Petroleum Gas (LPG)	422	2,155	t
	Heavy oil	10	836	kl
	Kerosene, light oil, etc.	49	124	kl
	Water	2,126	899	thousand m ³
PRTR [☐] substances	2-aminoethanol	1,573	0	t
	Ferric chloride	0	4,800	t
	Hexavalent chromium compounds	0	2,071	t
	Chromium and trivalent chromium compounds	0	1,791	t
	Dichloropenta-fluoropropane	0	1,475	t
	Toluene	0	3,887	t
	Lead compounds	11,602	0	t
	1-bromopropane	27,232	54,782	t
	Boron compounds	3,023	17,138	t

OUTPUT		Nikon Corporation facilities	Group manufacturing companies in Japan	Units
CO ₂ emissions	Electricity	60,290	36,636	t-CO ₂
	City gas	13,492	3,271	t-CO ₂
	Liquefied Petroleum Gas (LPG)	1,265	6,463	t-CO ₂
	Heavy oil	27	2,265	t-CO ₂
	Kerosene, light oil, etc.	127	310	t-CO ₂
PRTR substances emissions to the air	2-aminoethanol	0	0	t
	Ferric chloride	0	0	t
	Hexavalent chromium compounds	0	0	t
	Chromium and trivalent chromium compounds	0	0	t
	Dichloropenta-fluoropropane	0	1,382	t
	Toluene	0	3,116	t
	Lead compounds	0.008	0	t
	1-bromopropane	24.772	40,875	t
Wastes including valuable resources	Boron compounds	0.004	0.024	t
	Amount discharged	3,123	2,610	t
	Amount recycled	3,103	2,458	t
	Amount of landfill	8	89	t

Scope of Data Nikon Corporation facilities: Head Office, and Ohi, Yokohama, Sagami-hara, Kumagaya, Mito and Yokosuka Plants

Group manufacturing companies in Japan: Tochigi Nikon Corporation, Tochigi Nikon Precision Co., Ltd., Sendai Nikon Corporation, Miyagi Nikon Precision Co., Ltd., Kurobane Nikon Co., Ltd., Hikari Glass Co., Ltd., TNI Industry Co., Ltd.

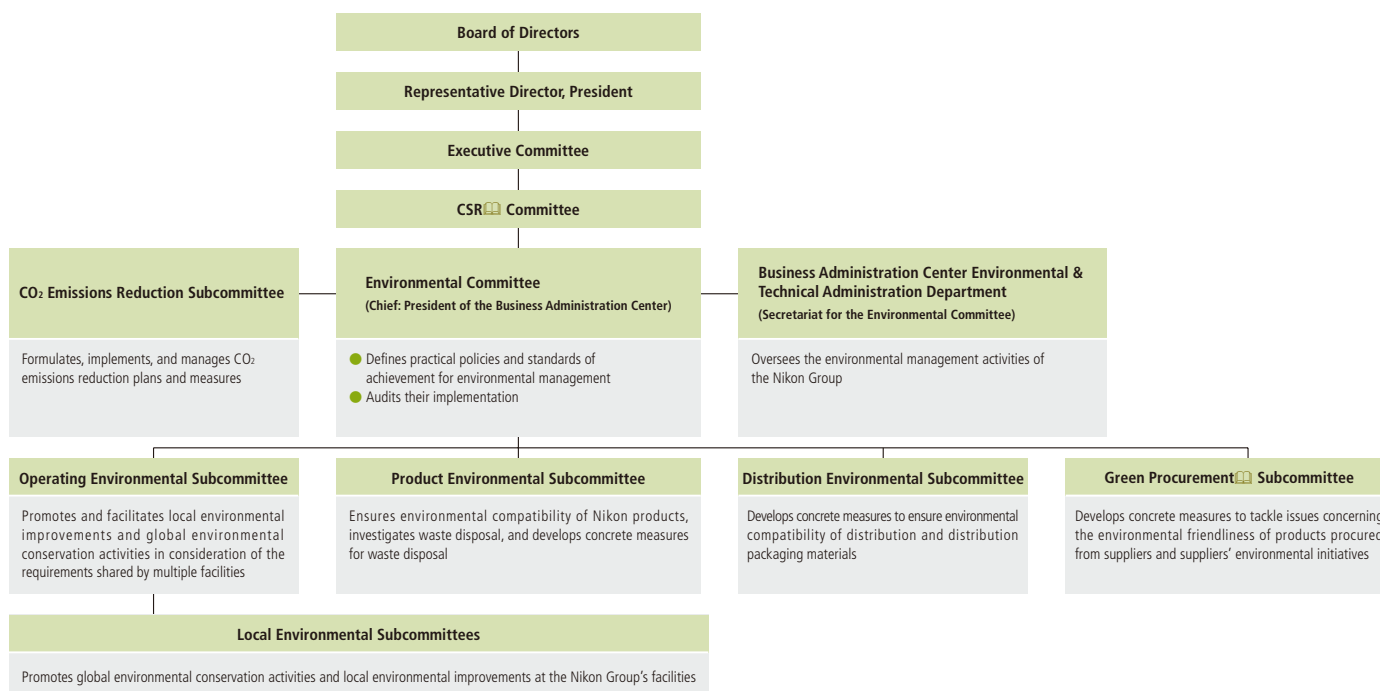
Environmental Management System

Environmental management organization

The Nikon Group established an environmental management organization based on the Nikon Basic Environmental Management Policy, and is

implementing a group-wide environmental management system under the leadership of the Environmental & Technical Administration Department. Through this organization, we constantly monitor the enactment and enforcement of the relevant regulations, treaties, and standards both within and outside Japan, as well as social needs that are taking shapes so that we can respond to them proactively.

Environmental Management Organization (as of April 1, 2012)



Utilization of ISO 14001[®] certification

The Nikon Group conducts environmental management activities based on ISO 14001. We are currently expanding the scope of certification of our globally integrated environmental management system in and outside Japan with the goal of boosting the efficiency of our business operations and spreading our Environmental Action Plan through the entire Group, which is our medium-term goal for environmental activities. In the year ended March 31, 2012, two Group companies in Japan were certified as a single site within Nikon Corporation facilities.

One non-manufacturing overseas Group company also obtained independent certification.

We are also promoting the introduction of the Nikon Simplified Environmental Management System (simplified EMS) to facilities in Japan and overseas which have low environmental impacts. The simplified EMS consists of the key elements from ISO 14001. During the year ended March 31, 2012, the simplified EMS was introduced at the facilities of two Group companies in Japan.

Acquisition of ISO 14001 Certification

	Scope of certification
Integrated certification	Nikon Corporation
	Sendai Nikon Corporation
	Miyagi Nikon Precision Co., Ltd.
	Tochigi Nikon Corporation Tochigi Nikon Precision Co., Ltd.
	Kurobane Nikon Co., Ltd.
	Hikari Glass Co., Ltd.
	Nikon Instech Co., Ltd.
	Nikon TEC Corporation
	TNI Industry Co., Ltd. Nagai Factory
	Nikon Vision Co., Ltd.
	Nikon Imaging (China) Co., Ltd.
	Nikon (Thailand) Co., Ltd.
	Hikari Glass (Changzhou) Optics Co., Ltd. Nanjing Nikon Jiangnan Optical Instrument Co., Ltd.
Independent certification	Nasu Nikon Co., Ltd.
	Aichi Nikon Co., Ltd.
	Nikon U.K. Ltd.

Performing internal audits

We conduct internal audits at least once a year to verify the compatibility of auditees' environmental management systems with ISO 14001, to see whether they are complying and adhering strictly to their environmental manuals, and to check how they have set and implemented their environmental targets and how they are performing. During the year ended March 31, 2012, one of the main points in the audits was whether specific statements had been included in the control ledger which would allow users to easily check the status of compliance[®] with environmental laws and regulations.

Environmental Education, Awareness Raising, and Internal Communication

The Nikon Group has been conducting a range of environmental education and awareness-raising activities for employees in order to raise the standard of the Group's environmental conservation activities.

Training of internal auditors

In order to maintain and improve environmental management systems, it is critical to maintain and improve the quality of internal audits. The Nikon Group therefore periodically provides employees with an internal auditor training course four times a year and an internal auditor skill-up training course four times a year. From the perspective of strengthening compliance, we also conduct effective periodic training sessions on relevant environment-related laws and regulations twice a year, as well as at the request of any of the local environmental subcommittees. At these training seminars, lectures are given by employees who are externally qualified as auditors. These lecturers provide support for the establishment of environmental management systems and give lectures, both inside and outside the Nikon Group.

General education

At Nikon Group companies in Japan, employees are provided with education matched to their positions, groups, facilities and departments, based on the educational training plan for the environmental management system.

For example, we provide introductory training and a basic workshop program for all new employees. These training sessions cover the latest information on the regulation of hazardous chemical substances, global warming, biodiversity[®], and other environmental issues considered to be important in recent years. We also teach new employees about the activities being undertaken at the Nikon Group to reduce the use of hazardous substances in our products and reduce CO₂ emissions at our facilities.

Meanwhile, in order to provide employees with essential information and increase their awareness of and interest in our environmental measures, we also hold seminars and lectures during "Environment Month" (June) and at other opportunities. For Environment Month in 2011, we held a seminar on the revised RoHS Directive[®], as well as a lecture on biodiversity presented by a visiting speaker.



Training seminar for new employees

Expansion and Promotion of Environmental Management

Environmental Commendation Program

In order to encourage employees to expand measures to protect the environment, the Nikon Group introduced the Nikon Environmental Commendation Program. This program commends and awards groups and individuals who have achieved outstanding results in their daily environmental activities. In the fiscal year ended March 31, 2012, three Outstanding Environmental Contribution Awards and five Environmental Contribution Awards were given.



Environmental Commendation ceremony

Efforts in Biodiversity Conservation

Corporate activities are closely linked to biodiversity. In procuring materials and being supplied with water and energy, companies receive the benefits of nature, but at the same time, they also have direct and indirect effects on nature, such as generating waste, emitting CO₂ and releasing chemical substances and wastewater.

Led by a working group consisting of members from the CSR section, Social Contribution section, Environmental section and

Procurement section, the Nikon Group has been exploring initiatives aimed at preserving biodiversity.

During the year ended March 31, 2012, we strengthened our monitoring of environmental data, and using the Corporate Ecosystem Services Review (ESR), we assessed which benefits or “ecosystem services” our corporate activities were relying on or affecting by way of our facilities and/or products. During the year ending March 31, 2013, based on the results of the ESR and of our own impact assessments, we will implement specific measures that reflect the true Nikon.

Environmental Accounting

The Nikon Group has adopted environmental accounting in accordance with the Ministry of the Environment’s “Environmental Accounting Guidelines (2005).” By implementing continuous environmental measures based on a long-term viewpoint, we hope to make those measures more effective, and through information disclosure, we hope to increase the transparency of our environmental conservation activities, thereby clarifying our position on the environment.

Scope of data: Nikon Corporation, Tochigi Nikon Corporation, Tochigi Nikon Precision Co., Ltd., Sendai Nikon Corporation, Miyagi Nikon Precision Co., Ltd., Kurobane Nikon Co., Ltd., Hikari Glass Co., Ltd., TNI Industry Co., Ltd. Nagai Factory, Nikon Business Service Co., Ltd., Nikon Vision Co., Ltd., Nikon-Trimble Co., Ltd., and Nikon Staff Service Corporation

Period: April 1, 2011 to March 31, 2012

- * Only costs that are clearly distinguishable as environmental costs are included.
- * Depreciation has not been factored into these accounts.
- * Where a facility has been utilized for several purposes and breakdown is considered complex, the entire cost has been included in the investment amount.
- * All costs have been rounded up or down to the nearest whole number, so it is possible that totals are not identical to the sum of the constituents as listed.

Cost of Environmental Protection

Unit: millions of yen

Category		Main activities	Investment	Expenses	Total
Business Area Cost	Pollution Prevention Cost	Prevention of air pollution, water pollution, noise pollution, etc.	133	850	983
	Global Environment Conservation Cost	Prevention of global warming, energy conservation, etc.	389	29	418
	Resource Circulation Cost	Disposal of waste, efficient use of resources, etc.	55	420	475
Upstream/downstream Cost		Administration of green procurement, recycling measures, etc.	—	38	38
Administration Cost		Administration of environmental management systems, greening activities, disclosure of environmental information, etc.	—	390	390
R&D Cost		Energy-saving design of products, compliance with REACH Regulations, research and development, etc.	15	216	231
Social Activity Cost		Social contribution activities, sponsorship activities, donations to environmental organizations, etc.	—	43	43
Environmental Remediation Cost		Costs for restoring soil, etc.	—	—	—
Other Costs		Other costs related to environmental conservation	—	—	—
Total			592	1,986	2,578

Economic benefits associated with environmental conservation activities

Unit: millions of yen

		Economic benefits	Costs
Revenue		Revenue from the sale of valuable resources	106
Expense Saving	Reduced energy costs due to energy savings		—
	Reduced expenses due to efficient utilization of resources		—
	Reduced expenses due to recycling of resources		—
Total			106

Environmental Action Plan

The Nikon Group evaluates its results against its annual Environmental Targets. Issues are then detected, and revisions are made to overcome those issues.

Results of the Nikon Environmental Action Plan for the year ended March 31, 2012

○: Achieved △: Measures started but not yet achieved ×: Not started

Theme		Targets	Results	Self evaluation	See page
Product-related activities	Energy conservation (prevention of global warming)	● 20% or more improvement in overall energy efficiency [□] of new products during use compared with existing products	Improved by 22.5% (simple average of new-release products)	○	P33
	Reduction in the use of hazardous chemical substances	(Hexavalent chromium, lead, cadmium, mercury, PBB, PBDE, PVC) ● Continue compliance [□] with RoHS Directive [□] and maintain and enhance the management system	Maintained 100% compliance for products subject to the RoHS Directive, and maintained and enhanced the management system	○	P33-35
	Control of chemical substances	● Determine policy for chemical management systems	Determined policy for management systems	○	P34
	Green procurement [□]	(Reduction in the use of hazardous chemical substances) ● Consumer products: Maintain and update green procurement ● Industrial products: Expand green procurement (Application of the Nikon Green Procurement Standards) ● Continue to apply and update the Nikon Green Procurement Standards ● Continue to examine and audit the environmental management systems	Consumer products: Maintained and updated green procurement Industrial products: Expanded green procurement Continued to apply and update the Nikon Green Procurement Standards Continued to examine and audit the environmental management systems	○	P58-60
	Distribution	(Reduction in CO ₂ emissions from physical distribution) ● 850-ton reduction of CO ₂ from implementing measures	99-ton reduction of CO ₂ from implementing measures	△	P37
Activities at facilities	Reduction in GHG [□] emissions (CO ₂ emissions from energy use)	● Total CO ₂ emissions from Nikon Corporation and Group manufacturing companies in Japan: 126 thousand tons or less ● CO ₂ emissions per unit of real output from two Group manufacturing companies in Asia: Reduce by 20% (compared with the year ended March 31, 2006) (total CO ₂ emissions: 88 thousand tons)	Total CO ₂ emissions: 116 thousand tons Reduced CO ₂ emissions per unit of real output by 20% (compared with the year ended March 31, 2006) Total CO ₂ emissions: 66 thousand tons ^{*3}	○	P38-40
	Waste reduction	(Waste reduction) ● Waste from Nikon Corporation and Group manufacturing companies in Japan: Maintain levels from the year ended March 31, 2011 (3,944 tons or less) (Zero emissions [□]) ● Achieve level 4 zero emissions at Hikari Glass Co., Ltd. and NTC ^{*1} ● Start building a system at NNJC ^{*2} and other Group companies	Maintained levels from the year ended March 31, 2011 Achieved level 4 zero emissions at Hikari Glass Co., Ltd. and NTC ^{*3} Started building systems at NNJC, Hikari Glass (Changzhou) Optics Co., Ltd.	○	P41-43
Others	Environmental Management System (EMS)	● Prepare for introduction at overseas non-manufacturing facilities	Started preparations for introduction at overseas non-manufacturing facilities (Nikon Simplified Environmental Management System)	○	P30
	Biodiversity conservation	● Assess the level of environmental impact of business activities, enhance current actions, and begin new initiatives	Assessed the level of environmental impact of business activities Selected measures and themes to be tackled Strengthened monitoring of environmental data	○	P31
	Life Cycle Assessment (LCA) [□]	● Perform LCAs on a trial basis	Performed LCAs on a trial basis for representative products	○	P33

*1. NTC: Nikon (Thailand) Co., Ltd.

*2. NNJC: Nanjing Nikon Jiangnan Optical Instrument Co., Ltd.

*3. For NTC, only data for the Apr-Sep period is recorded because the factory stopped operating due to floods.

Targets of the Nikon Environmental Action Plan for the year ending March 31, 2013

Theme		Targets
Product-related activities	Energy conservation (prevention of global warming)	● Improve overall energy efficiency Improve overall energy efficiency of new representative products released during the year ending March 31, 2013
	Reduction in the use of hazardous chemical substances	● Maintain 100% compliance for products subject to the RoHS Directive
	Green procurement	Refer to Promotion of CSR [□] Activities in the Supply Chain [□] (see pp. 58-60).
	Distribution	● Reduction in CO ₂ emissions from physical distribution Improve loading efficiency and promote modal shifts
Activities at facilities	Reduction in GHG emissions (CO ₂ emissions from energy use)	● Total CO ₂ emissions from Nikon Corporation and Group manufacturing companies in Japan: 136 thousand tons or less ^{*1} ● CO ₂ emissions per unit of real output from two Group manufacturing companies in Asia: Reduce by 25% (compared with the year ended March 31, 2006) (total CO ₂ emissions: 32 thousand tons) ^{*2}
	Waste reduction	● Waste from Nikon Corporation and Group manufacturing companies in Japan: Maintain levels from the year ended March 31, 2011 (4,867 tons or less) ^{*3} ● Zero emissions: Maintain level 1 for facilities that have achieved level 1 Hikari Glass (Changzhou) Optics Co., Ltd. and NNJC: Build a level 4 system
Others	Environmental Management System (EMS)	(Integrated ISO 14001 [□] certification) ● Prepare for introduction at Nikon Metrology NV
	Biodiversity conservation	● Plan and implement specific measures and themes, and collect data on the environmental burdens of business activities ● Continue performing LCAs on a trial basis

*1. Revisions were made to each type of CO₂ emissions factor. Electricity: weighted average of the actual emissions factors between the year ended March 31, 2006 and the year ended March 31, 2008 (fixed for all periods) City gas (unit heating value): value specific to gas company Other fuels: value contained in the Manual for Calculating and Reporting Greenhouse Gas Emissions applied when calculating baseline emissions

*2. NTC not included in targets due to effects of flood.

*3. Broaden scope of data from year ending March 31, 2013.

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Product-related Activities

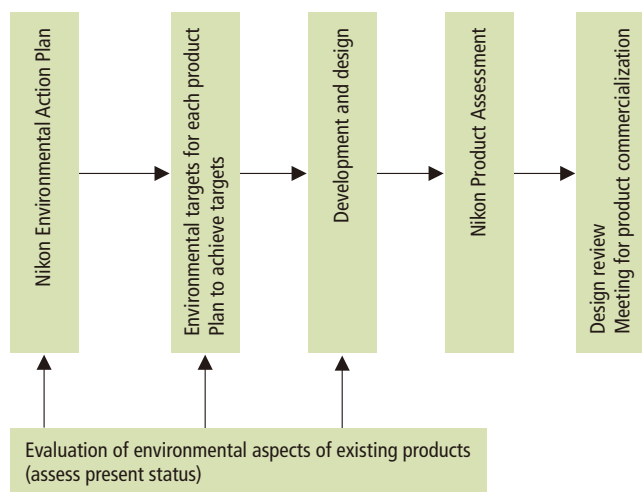
In order to minimize the environmental impact throughout a product's life cycle and to promote legal compliance[□], we introduced Nikon Product Assessment to the development and design stages of products. We are also making efforts to recycle waste products and packaging materials and to reduce our environmental impact during physical distribution.

Eco-friendly Product Development

Environmentally friendly product development system

The Nikon Group has continued to operate the system outlined in the figure below, producing a steady stream of even more advanced eco-friendly products.

Management system for the development of eco-friendly products



Nikon Product Assessment

In a bid to stay ahead of environmental regulations and deteriorating global environmental problems, in 1995, Nikon Corporation developed and established the Nikon Product Assessment, taking the properties of Nikon products into full account.

Since then, we have continued to run the assessment during the development and design stages of all product categories of the Nikon Group, while constantly revising and tightening the assessment items and standards.

We have already assessed over 1,000 products and units, and with an aim of improving our products, we have pushed for less wasteful use of resources and substantial reductions in the use of hazardous substances. We have also continued efforts to improve energy efficiency[□]. In comparison to our existing products, we made an average 22.5% improvement for our new products in the year ended March 31, 2012.

Furthermore, by utilizing life cycle assessment (LCA)[□] techniques to promote quantitative environmental impact assessments for our representative products, Nikon Corporation has conducted activities that effectively reduce our environmental impact.

Features and outline of the Nikon Product Assessment

Features

- Mandates product assessment in the development stage
- Requires continuous improvement in assessment scores from one model to the next
- Supports designers by offering relevant documentation and references

Outline

- Continues to reduce product mass and volume and the number of parts used in a product
- Improves energy efficiency
- Pursues longer product life and simpler repair procedures
- Raises consumer awareness (for the reduction and appropriate management of waste consumables)
- Simplifies recycling procedures
- Discontinues or reduces the use of hazardous substances
- Uses Eco-glass[□] in the optical systems (see p. 33)
- Uses lead-free solder on electronic circuit boards (see p. 34)
- Adopts hexavalent chromium-free surface treatment technologies (see p.34)
- Ensures compliance with environmental regulations
- Makes overall assessments

Reducing Hazardous Substances in Products

In order to reduce the use of hazardous substances in all Nikon products, the Nikon Group has extensively promoted the development and use of lead- and arsenic-free Eco-glass as well as the use of lead-free soldering technologies and hexavalent chromium-free technologies in surface treatment. We completed preparations to comply with the European RoHS Directive[□] in March 2006, and since then we have proceeded to build and strengthen the management system. Up until the year ended March 31, 2012, we have maintained 100% compliance. We also make use of chemical analysis techniques in our quality assurance departments to prevent the contamination of heavy metals and other hazardous substances.

Development of lead- and arsenic-free Eco-glass

In the 1990s, in the recognition that the lead and arsenic used in most optical glass at the time were the most significant product-related environmental aspects, the Nikon Group developed Eco-glass, a type of optical glass that contains no lead and arsenic. Since then, we have endeavored to use only Eco-glass in optical products. Barring some products with unique specifications, we have achieved nearly 100% usage of Eco-glass. In the year ended March 31, 2012, Eco-glass usage rates in new designs were 100% for consumer products and 99.9% for industrial products.

Full-scale adoption of lead-free solder

The Nikon Group has established a lead-free soldering system under the leadership of the electric technology department of Nikon Corporation and Sendai Nikon Corporation, and in collaboration with the product development and manufacturing departments, other Group companies and our business partners. We use lead-free tin-silver-copper solders, which represent the standard solder type used in the industry.

The properties of the materials used in lead-free soldering, such as the narrow range of allowable temperatures, mean that manual soldering requires a high degree of skills. For this reason, the Nikon Group added a course on lead-free soldering to our in-house training and technical certification system. We have already trained numerous instructors and certified technicians through this course.

By implementing measures such as these, we have striven to increase the use of lead-free solder. In the year ended March 31, 2012, we again maintained 100% use of lead-free circuit boards in all our new consumer products, including the digital SLR D800. In principle, we have also eliminated lead from all new circuit boards used in industrial products (such as steppers and scanners, microscopes and surveying instruments).

The photographs below introduce two of the many new circuit boards released during the year ended March 31, 2012.



Control board for fieldscopes featuring Nikon's vibration reduction (VR) system



Control board for the latest model ArF immersion scanners

Use of hexavalent chromium-free technology in surface treatment

Nikon Corporation's surface treatment department reviewed its technologies and processes for chromate treatment and chrome plating, and discontinued the use of highly hazardous hexavalent chromium at the end of 2004. By applying these innovative results and accumulated

expertise to all Nikon product categories, we have established hexavalent chromium-free technologies in surface treatment.

The Nikon Group has established a strict technical standard to discontinue use of heavy metals (hexavalent chromium, lead, cadmium, and mercury) in all surface treatment processes including coating, plating and chemical conversion. To ensure that this technical standard is practiced rigorously in all product categories, in cooperation with widespread business partners contracted to conduct surface treatment processes, we take all possible steps, including individual technical assistance, strict on-site audits and checks based on chemical analysis of actual items.

Chemical analysis techniques used by the quality assurance departments

The Nikon Group is in the process of discontinuing the use of hexavalent chromium, lead, cadmium, mercury, PBB, PBDE, PVC, and other hazardous chemical substances in all of its products. Nikon products are made from an astonishingly large number of materials and components and pass through the hands of numerous business partners before reaching completion. To completely eliminate the use of hazardous chemical substances in Nikon products, in addition to establishing a green procurement[□] system (see pp. 58 - 60), it is essential that we inspect various materials using chemical analysis. We have therefore introduced chemical analysis technologies to our quality assurance departments and other departments involved in the process of producing Nikon products. We also educate many of our engineers on analysis technologies and the related know-how to prevent hazardous chemical substances from making their way into Nikon products.

Response to regulations on hazardous chemical substance (REACH Regulation[□])

Based on the Strategic Approach to International Chemicals Management (SAICM)[□], which was adopted in 2006, today, many new laws and regulations on the registration and control of chemical substances are being established around the world. One of these is the European system for the registration and control of chemical substances, REACH Regulation.

Under REACH Regulation, depending on the content of substances of very high concern (SVHCs) in a product, manufacturers are required to provide information to downstream users and consumers, and/or are required to notify authorities. The Nikon Group will meet these obligations effectively by utilizing IT to survey the use of SVHCs throughout the supply chain[□] and to manage that content information. In addition, we will actively limit the use of SVHCs in our products and promote the switch to parts that do not contain SVHCs.

Web Nikon's declaration on compliance[□] with REACH Regulation
http://www.nikon.com/about/csr/pdf/Nikon_REACH.pdf

Expansion and Promotion of Environmental Management

Eco-friendliness of key products

The Nikon Group aims to constantly improve the environmental performance of its products by means of its original system for managing environmentally friendly product designs.

Following are some examples of the eco-friendliness of products that we announced or released during the year ended March 31, 2012.

Precision Equipment Company

ArF Immersion Scanner NSR-S621D (released January 2012)

By employing our tried-and-trusted Streamalign Platform and making further improvements to the existing NSR-S620D model, the NSR-S621D has achieved even greater accuracy and productivity. The NSR-S621D provides the optimal and efficient solution to customers' production lines.

Energy efficiency [□]	Reduced consumption of electricity per wafer
Lead-free solder	Complete use of lead-free solder on new circuit boards
Elimination of hexavalent chromium	Discontinued use of hexavalent chromium in the surface treatment process
Eco-glass [□] usage	Complete use of Eco-glass for optical systems
Ozone layer protection	Use of new HFC refrigerant in temperature control and air conditioners which does not contribute to ozone depletion.



Imaging Company

1 NIKKOR VR 10-30mm f/3.5-5.6 (released December 2011)

This is a 3x standard zoom lens for the Nikon 1 camera system. It employs a lens-shift vibration reduction (VR) mechanism, which can also be used when shooting video, and is capable of capturing a range of scenes with superb depiction, including everyday snapshots, landscapes and portraits. Being a compact lens with a retractable lens mechanism, it is easy to carry around.

Energy efficiency	18% improvement compared to the AF-S DX VR Zoom-Nikkor 55-200mm f/4-5.6G IF-ED
Lead-free solder	Lead-free solder used on all electronic circuit boards
Reduction of hazardous substances	Standards of the European RoHS Directive [□] achieved
Eco-glass usage	100%



COOLPIX S6300 (released February 2012)

This is one of the most compact digital cameras in its class despite the built-in 10x optical zoom NIKKOR lens. Offering an effective pixel count of 16.0 megapixels, and equipped with a lens-shift vibration reduction (VR) mechanism, the S6300 is a high-definition model offering such functions as special effects, filter effects, 3D photography and full-HD movie video recording.

Energy efficiency	Besides improvement in performance, 10% grows in energy efficiency, compared to the COOLPIX S6100
Lead-free solder	Lead-free solder used on all electronic circuit boards
Reduction of hazardous substances	Standards of the European RoHS Directive achieved
Eco-glass usage	100%



Instruments Company

Biological microscopes: ECLIPSE E200 LED illumination model (released December 2011)

We released a LED illumination model as an addition to the existing halogen illumination model in the ECLIPSE E200 series. The new high-intensity LED illumination we developed boasts exceptional energy-saving and long-life properties, and significantly reduces the need for frequent lamp replacement. It is a top performing model with full specifications that can be used for various purposes, from practical training to clinical examinations and research.

Reduced electricity consumption	LED illumination reduces electricity consumption by 92.7% compared to the existing model
Longer life	Approximately 60,000 hours using a high luminescent white LED illuminator (Eco-illumination)
Lead-free solder	Lead-free solder used on all electronic circuit boards
Reduction of hazardous substances	Significant reduction in hexavalent chromium in surface treatment; discontinued use of PBB and PBDE



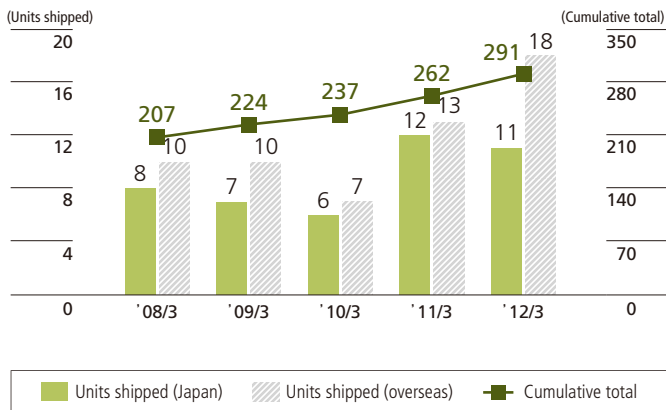
Reuse and recycling of used products

Supplying products the world over, Nikon is working tirelessly to reduce the total environmental impact of its products and services by reusing and recycling used products.

Sales of refurbished steppers and scanners

In the year ended March 31, 2001, the Nikon Group launched a commercial service for collecting used Nikon steppers and scanners from customers, reconditioning them, replacing parts, reconfiguring them, and installing them for new customers in Japan and overseas. This exemplifies Nikon's practice of reusing its own products. As of the year ended March 31, 2012, Nikon had shipped a cumulative total of 291 refurbished steppers and scanners.

Volume of refurbished steppers and scanners



Battery recycling

In Japan, Nikon Corporation has been cooperating with JBRC and a number of other companies to collect end-of-life secondary batteries, including those used for Nikon digital cameras, from users for recycling.

Recycling of used Nikon products

Under WEEE Directive, European countries have been developing national laws in relation to the collection and recycling of used electronic products. In response to these laws, we have been working to fulfill our responsibility for the collection and recycling of Nikon digital cameras and other products. Since 2005, the Nikon Group, led by a group company in the Netherlands, has been preparing nation-specific measures to meet its collection and recycling obligations for digital cameras and other Nikon products. We have established a collection and recycling system in more than 25 countries, registering with local collection organizations.

The Nikon Group will continue taking appropriate measures in the future for the collection and recycling of used products.



WEEE symbol

Recycling of packaging materials

The Nikon Group promotes the recycling of packaging materials for Nikon products in Japan by outsourcing the task to the Japan Containers and Packaging Recycling Association.

In Europe, under EU Directive on packaging and packaging waste, each country has developed packaging waste collection and recycling system in accordance with its national law. Many of those systems adopt the Green Dot system. The Nikon Group cooperates in the collection and recycling of packaging materials in those countries that are members of this program by paying a collection and recycling fee to recycling organization in each country and by displaying the Green Dot mark on its product packaging.



The Green Dot mark

Packaging Measures

Nikon Corporation formulated its Environmental Policy Regarding Packaging Materials in May 1998 and revised it in June 2000 to reduce the use of packaging materials for its products.

Based on this policy, we have been engaging in various efforts to boost the loading efficiency of physical distribution. Packaging can be continuously improved by reviewing the size of product boxes so that they can be efficiently loaded onto trucks, making user manuals less bulky, and switching from conventional containers to pallets to eliminate the need for outer packaging.

In addition, we are making efficient use of recycled resources. For example, we employ a type of insertion packaging that enables the cushioning material and cardboard box to be easily separated, and use molded pulp as cushioning materials for some products.



Product boxes for compact digital cameras

Expansion and Promotion of Environmental Management

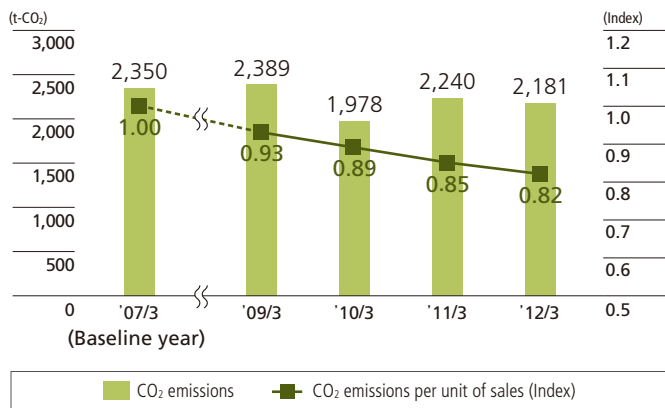
Distribution-related Activities

The Nikon Group is engaged in a number of initiatives to reduce CO₂ emissions in distribution based on the understanding that such efforts are urgently needed to mitigate global warming.

Reducing carbon emissions in distribution

Nikon Corporation is striving to reduce CO₂ emissions in transportation by identifying its distribution routes including those of Group manufacturing companies in Japan, and obtaining numerical data on transportation volumes and CO₂ emissions. In Japan, 2,181 tons of CO₂ were emitted through distribution in the year ended March 31, 2012. Although our measures for the reduction of CO₂ emissions had been expected to realize a reduction of 850 tons of CO₂, a reduction of only 99 tons was achieved. The main reason for this was the planned modal shift from air transport to sea transport did not match the various business conditions, and so was implemented significantly less than expected.

CO₂ emissions from physical distribution in Japan



Promoting eco-driving

Nikon Business Service Co., Ltd., which oversees transportation of goods for the Nikon Group, has installed digital tachographs and drive recorders on all of its large goods vehicles. These devices record varied information such as driving routes, departure and arrival times, maximum speeds on local roads and expressways, frequency of sudden starts, sudden acceleration and sudden braking, and rest times. By managing and evaluating this recorded information, we aim to further improve fuel efficiency and raise awareness of safety among our drivers. In addition, all of our drivers periodically attend eco-driving workshops.

Nikon Instech Co., Ltd. is promoting safe and eco-friendly driving by using telematics[□] to manage operation of its company vehicles, a move that is also helping its drivers to become more aware of the environment.

“Stop Idling” Promotion

When transporting IC steppers and scanners and other devices by vehicle, it is necessary to strictly control the cargo room temperature by the use of in-vehicle heating, ventilating, and airconditioning (HVAC) equipment, for which engines used to be kept running even while the vehicle was parked. Now, however, there is no need for idling within the premises of our factories, where it has been made possible to power the equipment by the use of external sources. Nikon Business Service has equipped all of its vehicles for use with external power sources.



Externally powered vehicle

Introduction of eco-friendly vehicles and shortening of transport distances

The Nikon Group is gradually replacing its company vehicles and freight trucks with fuel-efficient models, and is promoting the introduction of eco-friendly vehicles. The Group will consider introducing freight trucks powered by natural gas.

From the perspective of transport efficiency, we will also proceed to shorten transport distances by reviewing the transport routes used in international distribution and to practice bulk transport[□].

Modal shifts

The Instruments Company is shifting from truck deliveries to railway transport, which causes lower environmental impact. The company is now gradually increasing the use of railways that can be easily implemented and then will promote further the modal shift transportation.

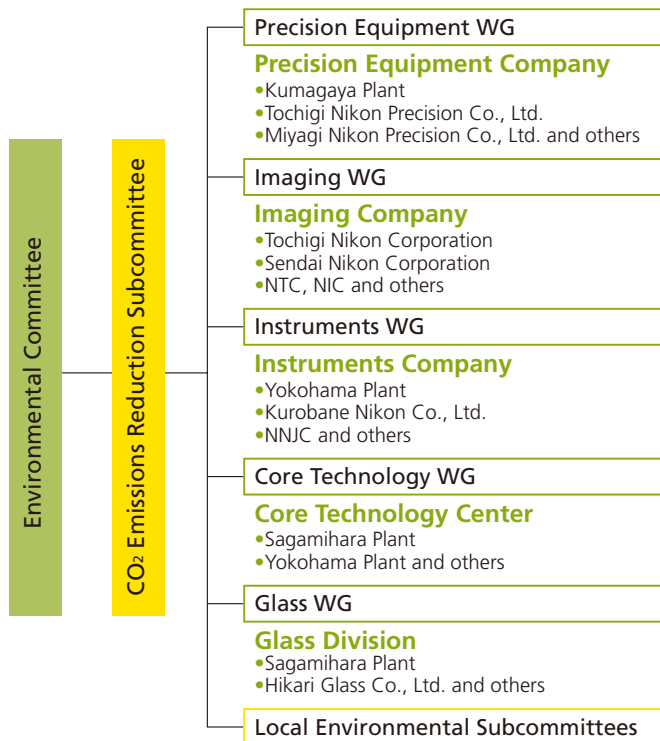
Activities at facilities

To prevent global warming and move toward a resource-recycling society, the Nikon Group is striving to ensure that all of its facilities save energy, recycle waste, and protect the local environment.

Reducing CO₂ emissions

The Nikon Group implements various measures to reduce CO₂ emissions based on the mindset of continuously growing our business while protecting the environment. We will continue to include CO₂ emissions reduction as one of our management priorities as we work to help create a low-carbon society through measures including thorough energy conservation, making use of natural energy, and offering products with high energy efficiency[□] throughout their lifecycles.

The CO₂ Emissions Reduction Subcommittee



*WG: Working Group
 *NTC: Nikon (Thailand) Co., Ltd.
 *NIC: Nikon Imaging (China) Co., Ltd.
 *NNJC: Nanjing Nikon Jiangnan Optical Instrument Co., Ltd.

Promoting the reduction of CO₂ emissions

The Nikon Group is making efforts to reduce CO₂ emissions, centered on the CO₂ Emissions Reduction Subcommittee comprised of working groups from in-house companies and business segments that emit large amounts of CO₂.

In addition to activities carried out independently by facilities, the Nikon Group has created systems for independent activities on the part of its in-house companies and business segments. These systems involve considering, drafting, and implementing effective measures to reduce CO₂ emissions that are in line with each business form.

The Nikon Group is working to reduce CO₂ emissions, keeping an eye on the evolvement of the Japanese government's energy policy and power companies' reactions after the Great East Japan Earthquake, and bearing in mind how international frameworks are forming.

Under the management of the CO₂ Emissions Reduction Subcommittee, each unit and facility have established their own reduction targets and are implementing various measures to reduce CO₂ emissions. In addition to each department promoting their own autonomous activities, such as visualization of energy usage, extending this to management by objectives and awareness-raising activities for employees, we are carrying out initiatives throughout entire product life cycles.

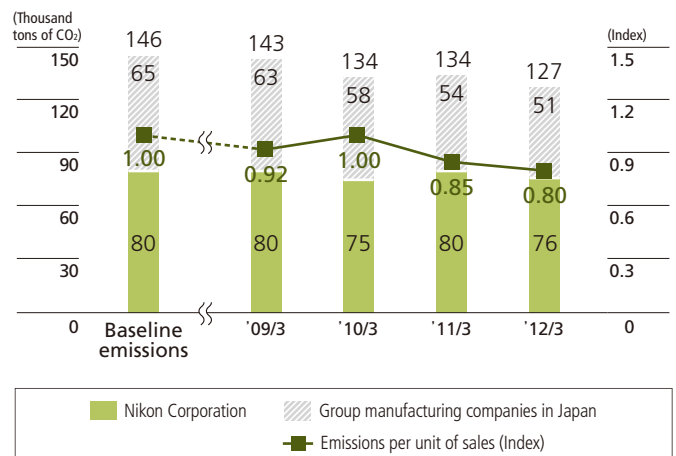
Especially in Japan, considering how tight the current power supply situation is, the Nikon Group is inspecting its ordinary energy usage once again and working toward even more thorough energy conservation, including electricity savings.

CO₂ emissions from Nikon Group companies in Japan

The Nikon Group is working continuously to reduce its CO₂ emissions by implementing measures that include increasing the efficiency of HVAC and lighting equipment, improving production activities, managing the use of lighting and OA devices, and making more use of renewable energy.

In the year ended March 31, 2012, the total CO₂ emissions of Nikon Group companies in Japan were 116 thousand tons, meaning we achieved our target of 126 thousand tons. (After the method for calculating emissions was changed, total emissions was 127 thousand tons compared to our target of 138 thousand tons.)

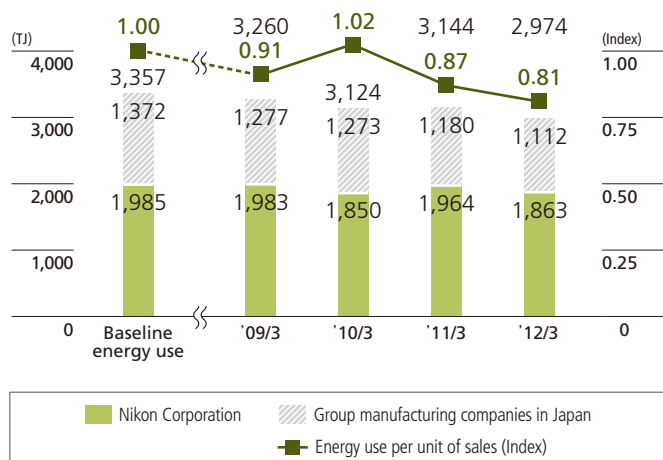
CO₂ Emissions from Nikon Group Companies in Japan (Calculated by fixing the CO₂ emission factors for use in the Action Plan)



* In addition to recalculating emissions using the following emissions factors, baseline emissions have been changed to the average value between the year ended March 31, 2006 and the year ended March 31, 2008.
 Electricity: weighted average of the actual emissions factors between the year ended March 31, 2006 and the year ended March 31, 2008 (fixed for all periods)
 City gas (unit heating value): value specific to each gas company
 Other fuels: values contained in the *Manual for Calculating and Reporting Greenhouse Gas Emissions* applied when calculating baseline emissions

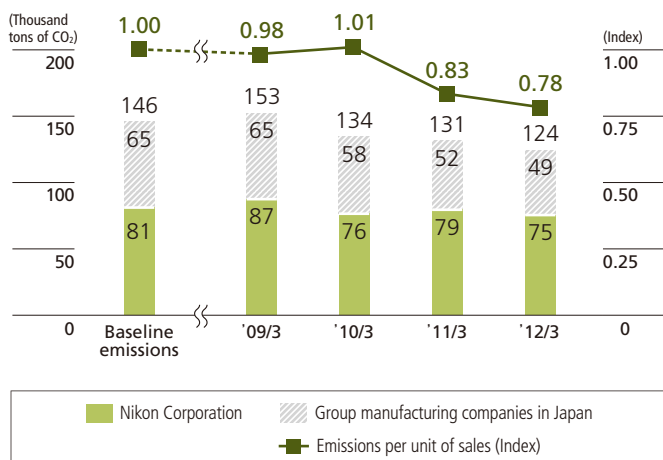
Expansion and Promotion of Environmental Management

Energy Use (Nikon Group companies in Japan)



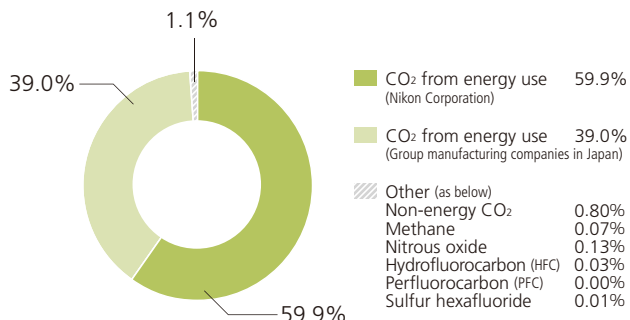
* In addition to recalculating energy use using the following coefficients, baseline use has been changed to the average value between the year ended March 31, 2006 and the year ended March 31, 2008.
 Electricity: 0.00976GJ/kWh (fixed for all periods)
 City gas: value specific to each gas company
 Other fuels: values contained in the *Manual for Calculating and Reporting Greenhouse Gas Emissions* applied when calculating energy use for each fiscal year

CO₂ Emissions (Nikon Group companies in Japan)



* In addition to recalculating emissions using the following emissions factors, baseline emissions have been changed to the average value between the year ended March 31, 2006 and the year ended March 31, 2008.
 Electricity: actual emissions factor for each fiscal year (the actual emissions factor for fiscal year 2010 is used for the year ended March 31, 2012)
 City gas (unit heating value): value specific to each gas company
 Other fuels: values contained in the *Manual for Calculating and Reporting Greenhouse Gas Emissions* applied when calculating emissions for each fiscal year

Breakdown of Greenhouse Gas Emissions by Nikon Group Companies in Japan



Examples of CO₂ emissions-reduction measures by Nikon Group companies in Japan

Introduction of a seamless HVAC system

Tochigi Nikon Precision Co., Ltd. introduced a seamless HVAC system in its clean room to efficiently generate heat. As a result of installing this system, the company has reduced its CO₂ emissions by 2,265 tons on an annual basis.

Utilizing renewable energy

The Kumagaya Plant has been operating a solar power generation system at full capacity since January 2010. The system is part of a joint research project with the New Energy and Industrial Technology Development Organization (NEDO). The system generates at least 100,000 kWh of power per year, which results in a reduction of CO₂ emissions by about 50 tons. Additionally, the Yokohama Plant also cosponsors Yokohama City's project for wind power generation as a Y(Yokohama) Green Partner Company.



Yokohama Plant's certificate for green power

Initiatives at other facilities

When it is time to replace equipment that has reached the end of its useful life, we actively encourage facilities in the Nikon Group to introduce high-efficiency equipment (LED lighting, air-conditioning, compressors, transformers, etc.) and to switch fuels for boilers. For example, the Sagami-hara Plant and its Shonan Branch replaced some of the mercury and fluorescent lights in their offices and processing rooms with LED lighting. In addition, the Kumagaya Plant has introduced three commuter buses powered by natural gas with the aim of reducing CO₂ emissions.

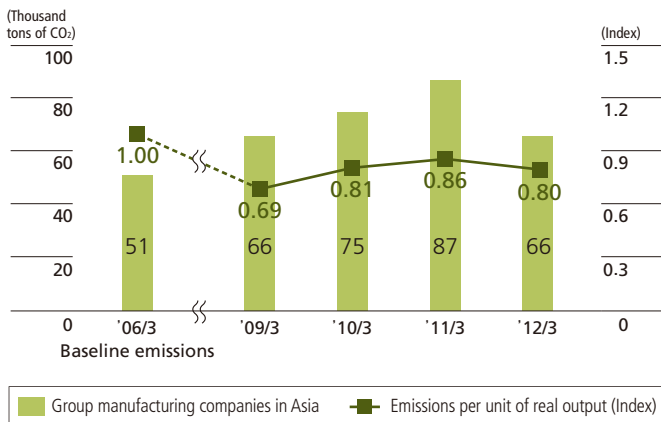


LED lighting at the Shonan Branch, Sagami-hara Plant

CO₂ emissions from Group manufacturing companies in Asia

In the year ended March 31, 2012, the CO₂ emissions per unit of real output from Group manufacturing companies in Asia were reduced by 20%, clearing the target of a 20% reduction. The absolute emissions were 66 thousand tons compared to the target of 88 thousand tons.

CO₂ Emissions from Group Manufacturing Companies in Asia



* Scope of data: Nikon Imaging (China) Co., Ltd. (NIC) and Nikon (Thailand) Co., Ltd. (NTC). However, for the CO₂ emissions of NTC, only data for the period Apr-Sep is recorded because the factory stopped operating due to floods.
 * Emissions except CO₂ from electricity use are calculated using emissions factors contained in the *Manual for Calculating and Reporting Greenhouse Gas Emissions*. Electricity: values for fiscal year 2003 in the *Report on the Estimates of CO₂ Emissions Intensity in the Power Sectors of Different Countries* (fixed for all periods)
 * The baseline year for the index of emissions per unit of real output is set at the year ended March 31, 2006 (year ended March 31, 2006 = 1).

Examples of CO₂ emissions-reduction measures by Group manufacturing companies in Asia

Introduction of solar powered LED lighting

Nikon (Thailand) Co., Ltd. (NTC) has installed LED outdoor lights that utilize solar power generation at 42 locations around its factory grounds. In this way they have reduced their annual CO₂ emissions by around 27 tons. During the year ended March 31, 2012, although affected by the floods, NTC resumed using them from November 2011.



Solar-powered outdoor lights at NTC

Voluntary Efforts by Overseas Non-manufacturing Facilities

Conserving energy at offices

Various voluntary efforts are being undertaken at the Nikon Group's non-manufacturing facilities overseas. Nikon GmbH (Germany) has elected to use superior thermal insulation in the walls of its office buildings, and has introduced cogeneration systems to power the

heating and cooling in its offices. Nikon U.K. Ltd. (United Kingdom) has introduced motion sensor lighting in its offices as a way of reducing power consumption. And Nikon Research Corporation of America (United States) has achieved an energy saving and a reduction in CO₂ emissions by replacing its indoor and outdoor incandescent light bulbs with more efficient lighting.

Using renewable energy

Starting in January 2010, all energy used by Nikon Europe B.V. (the Netherlands), a total of approximately 700,000 kWh per year, has been obtained from green energy sources. Furthermore, Nikon AG (Switzerland) introduced a heat pump system using geothermal heat for heating and cooling its office when it moved locations in 2003.



Heat pump system at Nikon AG



Certificate for green electricity at Nikon Europe B.V.

Employee attitude

At Nikon Imaging Korea Co., Ltd. (NIKC, Korea), under a slogan of "saving even just one cup per day can change NIKC," an ongoing campaign has been run since March 2011 to reduce the number of paper cups being used. Now, almost all employees use reusable cups. The company has also taken an active approach toward controlling indoor temperatures and restricting the use of elevators.

The Nikon Group commends the energy-saving actions of employees. Many other facilities also engage in positive action, such as diligently turning lights off and turning air-conditioning off outside of working hours.

Efforts for commuting and commercial vehicles

At Nikon GmbH (Germany), Nikon France S.A.S. (France), Nikon s.r.o. (Czech) and other companies, employees are encouraged to actively use public transportation or commute in other ways that have little environmental impact. Nikon GmbH has also replaced its company vehicles with more eco-friendly, fuel-efficient vehicles. Nikon France S.A.S. is also working to introduce hybrid cars.

Expansion and Promotion of Environmental Management

Preventing Air/ Water Pollution and Protecting Water Resources

Preventing pollution of the air and water

In order to help preserve air and water quality, the Nikon Group not only abides by applicable laws and regulations, but also established its own voluntary standards for controlling pollutants.

Specifically, we regularly measure pollutants released into the air and water and inspect equipment such as boilers and wastewater processing systems periodically to ensure safety at each of our facilities.

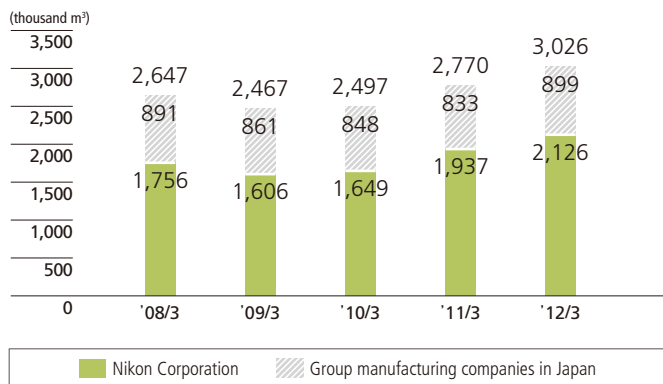
The Mito Plant and others switched the fuel used in its existing boilers from heavy oil to liquefied petroleum gas (LPG) in order to reduce CO₂ emissions, resulting in elimination of the release of SO_x as well as reduction of dust and NO_x emissions.

Protecting water resources

In addition to promoting the reuse of wastewater from production processes, the Nikon Group's manufacturing facilities also strictly control their water usage through water conservation activities.

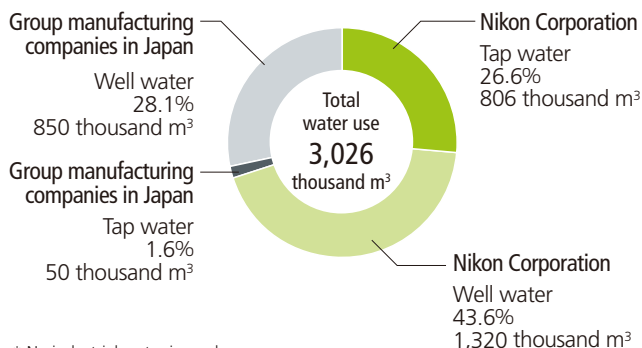
Furthermore, in order to promote greater use of circulated water, efforts are being made to strengthen monitoring of its usage and to visualize this data.

Water Use by Nikon Group Companies in Japan



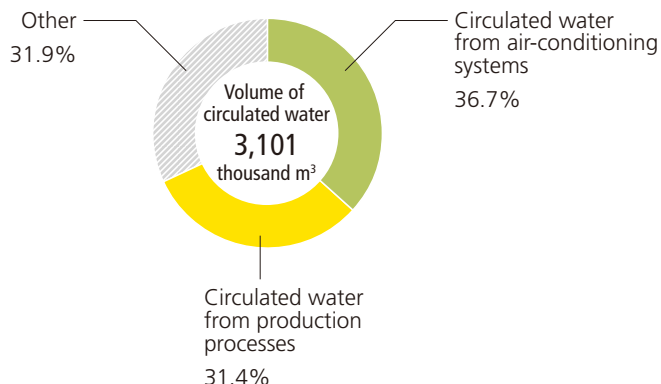
* Data on input amounts relating to the year ended March 31, 2011 and earlier were missing for some facilities. These have been recounted.

Breakdown of Water Use by Nikon Group Companies in Japan (year ended March 31, 2012)



* No industrial water is used.

Breakdown of Circulated Water at Nikon Group Companies in Japan (year ended March 31, 2012)



* The volume of circulated water only includes that water which can be measured by using flowmeters or other means.

Efforts for Waste Reduction

Waste Reduction

The amount of waste disposal during the year ended March 31, 2012 by Nikon Corporation was 2,675 tons, while that by Group manufacturing companies in Japan was 813 tons. Together, Nikon Corporation and the Group manufacturing companies in Japan achieved their target of maintaining the same level of waste disposal as the year ended March 31, 2011.

Toward Zero Emissions

In the year ended March 31, 2009, the Nikon Group defined 4 levels of zero emissions according to the rate of final landfill disposal.

So far, a total of 13 facilities belonging to Nikon Corporation and Group manufacturing companies in Japan have achieved level 1 zero emissions.

Four levels of zero emissions

- Level 1: Final landfill disposal rate: less than 1%
- Level 2: Final landfill disposal rate: less than 5%
- Level 3: Final landfill disposal rate: less than 10%
- Level 4: Final landfill disposal rate: less than 20%

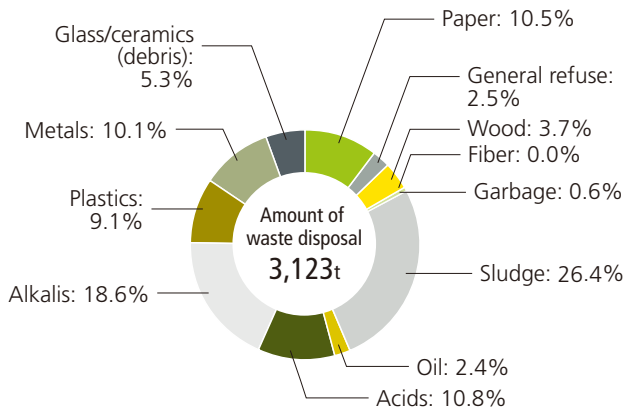
Achievement of Level 1 Zero Emissions[□] in the Nikon Group

Company		System complete (year-end)
Nikon Corporation	All plants	March 31, 2003
Group manufacturing companies in Japan	Sendai Nikon Corporation	March 31, 2002
	Tochigi Nikon Corporation / Tochigi Nikon Precision Co., Ltd.	March 31, 2004
	Kurobane Nikon Co., Ltd.	March 31, 2004
	Miyagi Nikon Precision Co., Ltd.	March 31, 2005
	TNI Industry Co., Ltd. Nagai Factory	March 31, 2010
Affiliated manufacturing companies in Japan	Nasu Nikon Co., Ltd.	March 31, 2006
	Aichi Nikon Co., Ltd.	March 31, 2007
Group manufacturing companies in Asia	Nikon Imaging (China) Co., Ltd.	March 31, 2010

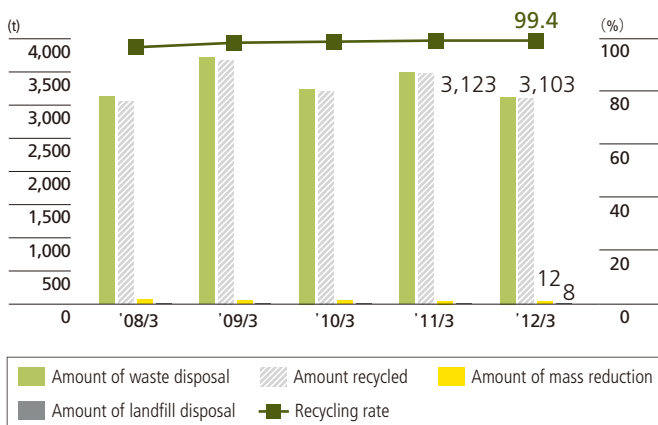
Progress made at Nikon Corporation

The amount of waste disposal including valuable resources by Nikon Corporation during the year ended March 31, 2012 decreased 10.5% year-on-year. Moreover, the recycling rate was 99.4% and the final landfill disposal rate was 0.26%, meaning the company maintained its level 1 zero emissions status.

Breakdown of Waste including valuable resources at Nikon Corporation Plants (by category, year ended March 31, 2012)



Disposal, Landfill and Recycling of Waste including valuable resources at Nikon Corporation Plants



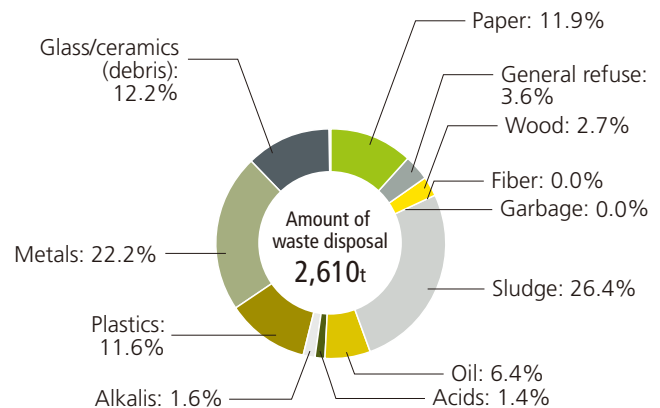
As an example of onsite improvements, the Sagamihara Plant returns the deposition materials used in the vapor deposition processing of lenses to the manufacturers of the materials for reuse, instead of just discarding them. Moreover the plant began selling waste semiconductor parts to recycling companies, thereby promoting both the recycling and cost savings.

Progress made at Group manufacturing companies in Japan

The amount of waste disposal including valuable resources by Group manufacturing companies in Japan (excluding Hikari Glass Co., Ltd.) during the year ended March 31, 2012 increased 0.8% year-on-year. Although the recycling rate decreased to 96.4%, the final landfill disposal rate was 0.3%, and they were able to maintain its level 1 zero emissions status.

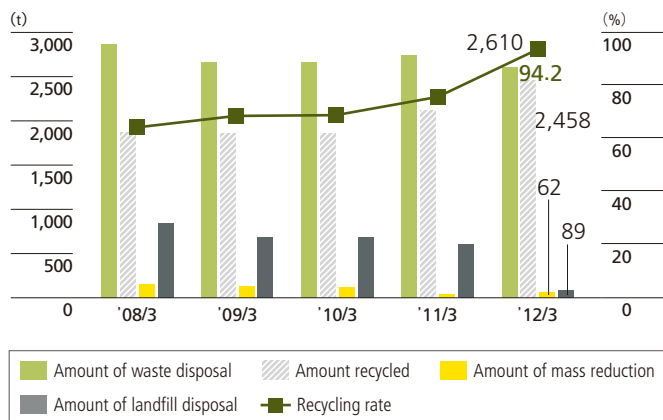
In addition, bricks and a portion of Eco-glass[□] generated at the Akita Plant of Hikari Glass, which used to be landfilled, are now sent to a waste contractor to be recycled into roadbed and other materials. In this way, the plant was able to recycle hard-to-recycle materials and to build a level 4 zero emissions system.

Breakdown of waste including valuable resources at Group Manufacturing Companies in Japan (by category, year ended March 31, 2012)



Expansion and Promotion of Environmental Management

Disposal, Landfill, and Recycling of Waste including valuable resources at Group Manufacturing Companies in Japan



Progress made at Group manufacturing companies in Asia

Nikon Imaging (China) Co., Ltd. commenced activities towards zero emissions[□] during the year ended March 31, 2009. It began with assessing the current situation and examining disposal methods according to waste type instead of sending everything to landfill, and it switched waste processing companies from those that were unable to offer recycling and other such services. As a result of its wide-ranging efforts, it achieved level 1 zero emissions in the year ended March 31, 2010. During the year ended March 31, 2012, it retained level 1 with a final landfill disposal rate of 0.67%. At present, Nikon Imaging (China) is working to recycle waste that is disposed during the cleaning process.

In the year ended March 31, 2012, Nanjing Nikon Jiangnan Optical Instrument Co., Ltd. and Hikari Glass (Changzhou) Optics Co., Ltd. began collecting accurate data on waste disposal with an aim of building a level 4 zero emissions system.

Nikon (Thailand) Co., Ltd. created a zero emissions team and commenced activities in April 2010. These include separating milk cartons from other garbage, as well as incinerating sludge, which is generated during the processing of wastewater from surface treatment and lens processing, in a cement kiln for recycling as a material used in industrial cement. As of September 2011, the final landfill disposal rate was 17%. This is below its voluntary target of 20% for the year ended March 31, 2012, meaning it had built its level 4 zero emissions system. The Thai floods caused production to stop from October 2011, and so no data has been able to be collected, but the company is doing everything it can to restore pre-flood conditions as quickly as possible.

Control and Disposal of Polychlorinated Biphenyl (PCB) Waste

The Nikon Group observes stringent safekeeping and notification practices for PCB-containing waste and electrical equipment in use in compliance[□] with laws and regulations. In July 2011, highly concentrated PCB-containing waste (56 capacitors) stored at Nikon Corporation's Ohi Plant was taken to the Tokyo Facility of the Japan Environmental Safety Corporation (JESCO) for proper disposal. In

consultation with JESCO, we plan to gradually dispose of the remaining PCB-containing waste and electrical equipment in use by the deadline specified in the "Law Concerning Special Measures Against PCB Waste[□]".



PCB waste being removed from the Ohi Plant



PCB waste being delivered to JESCO

Control and Reduction of Chemical Substances in Manufacturing

The Nikon Group manages chemical substances from their purchase and use through to disposal to prevent chemical pollution of the environment and promote safety.

As an example, Nikon Corporation obtains a material safety data sheet (MSDS) for any new chemical substance being purchased, and urges the workplace where the substance will be used to make a prior assessment of the risks associated with such use. The company then checks the measures taken based on the assessment results and has its experts recheck the measures from an expert viewpoint. The Nikon Group strictly controls the use of chemical substances, in particular those of high concern, so as to minimize their use. We will continue conducting research into alternative substances and maintain our efforts to reduce the risk of chemical contamination to as close to zero as possible.

The Nikon Group's PRTR[□]

The Nikon Group created the Nikon PRTR Guide in March 2000. All of its facilities in Japan have been using this guide to manage the chemical substances used at their facilities, including quantity management from purchase and use through to disposal, and safe handling and disposal of chemicals according to MSDSs. Subsequently, in March 2002 we established a system to make notifications, which had become mandatory by law, by updating the Guide to include a new section.

Release and Transfer of PRTR[□] Substances (year ended March 31, 2012)

Unit: kg

Facility	Substance no.	Substance name	Volume handled	Amount released			Amount transferred		Amount in on-site landfill	Amount removed for processing	Amount shipped in product	
				Air	Public water	Soil	Sewage	Waste				
Nikon Corporation	Yokohama Plant	20	2-aminoethanol	1,573	0	0	0	0	1,524	0	49	0
	Sagamihara Plant	305	Lead compounds	11,602	8	0	0	0	4,747	0	0	6,847
		384	1-bromopropane	23,438	23,191	0	0	235	12	0	0	0
		405	Boron compounds	3,023	4	0	0	0	1,235	0	0	1,784
Kumagaya Plant	384	1-bromopropane	3,794	1,581	0	0	0	0	0	0	2,213	
Group manufacturing companies in Japan	Tochigi Nikon Precision Co., Ltd.	384	1-bromopropane	10,197	8,921	0	0	0	0	0	0	1,276
	Sendai Nikon Corporation	88	Hexavalent chromium compounds	2,071	0	0	0	0	280	0	1,791	0
		87	Chromium and trivalent chromium compounds	1,791	0	0	0	0	0	0	0	1,791
		300	Toluene	2,743	2,078	0	0	0	665	0	0	0
		384	1-bromopropane	34,648	26,374	0	0	0	8,274	0	0	0
	Kurobane Nikon Co., Ltd.	71	Ferric chloride	4,800	0	0	0	0	0	0	4,800	0
		384	1-bromopropane	8,600	4,577	0	0	0	0	0	0	4,023
	Hikari Glass Co., Ltd. Akita Plant	405	Boron compounds	17,138	24	1	0	0	7,326	0	0	9,787
	TNI Industry Co., Ltd. Nagai Factory	384	1-bromopropane	1,337	1,003	0	0	0	334	0	0	0
		300	Toluene	1,144	1,038	0	0	0	106	0	0	0
TNI Industry Co., Ltd. Otawara Factory	185	Dichloropenta-fluoropropane	1,475	1,382	0	0	0	0	0	0	93	
Total			129,374	70,181	1	0	235	24,503	0	6,640	27,814	

* The Ohi Plant and Mito Plant of Nikon Corporation do not handle substances that are subject to reporting.

* Tochigi Nikon Corporation and Miyagi Nikon Precision Co., Ltd. (Group manufacturing companies in Japan) do not handle substances that are subject to reporting.

* The above table includes data only for hazardous chemical substances of which one ton or more (0.5 tons or more for Class 1 designated chemical substances) is handled at the facility in a given year.

* The volumes handled are not always identical to the sum of the constituents because of rounding.

Progress report on soil contamination remediation at the Ohi Plant of Nikon Corporation

The Ohi Plant completed remediation work for the soil contamination detected in 2007 at the former No. 2 building site at the end of that year, and at the former No. 1 building site in June 2010. The plant is now purifying the underground water

by pumping it up to be treated, and regularly monitors its quality. It will continue to do so in compliance[□] with related laws and regulations to ensure that there are no adverse effects on surrounding areas.

Soil survey results following alienation of part of Nikon Corporation's Yokohama Plant

Following alienation (transfer) of part of the site at the Yokohama Plant, a soil survey was performed based on the Yokohama City Ordinance on Conservation, etc. of the Living Environment (Living Environment Conservation Ordinance) from June to November 2010. The results of this survey indicated the presence

of fluorine in excess of the standard in a section of the plant's grounds. The degree of contamination was insignificant, with no impact on the surrounding environment. A detailed survey will be carried out up until the time the land is transferred over, and measures will be taken to replace the soil as necessary.