

# Business Activities and Environmental Impact

Olympus seeks to grasp the adverse impact imposed on the global environment by its business activities to reduce such impact.

## Major Environmental Impact in Development and Production Processes

### INPUT

<p><b>Energy</b> <span style="float: right;">▶P20</span></p> <p>Electric power..94,850,000kWh                  Heavy fuel oil ..... 3,254kl                  Kerosene ..... 245kl                  Diesel fuel ..... 72kl                  Gasoline ..... 44kl                  City gas ..... 710,000m<sup>3</sup>                  LPG ..... 90,000m<sup>3</sup>                  Total ..... 1,151TJ                  TJ (terajoule) 10<sup>12</sup>J</p>	<p><b>Raw Materials</b></p> <p>Metals                  .....Steel, aluminum, brass                  Optical glass                  Plastics                  .....ABS, PC, polyethylene,                  polypropylene                  Chemicals                  .....Acids, alkalines,                  solvents, paints</p>	<p><b>Office Supplies</b> <span style="float: right;">▶P21</span></p> <p>Copy paper .....123t</p> <p><b>Other Utilities</b> <span style="float: right;">▶P21</span></p> <p>Piped water .....190,000m<sup>3</sup>                  Ground water .....1,720,000m<sup>3</sup></p>
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### Business Activities



Research and development ▶



Design ▶



Manufacturing ▶

### Development and Production Business Facilities

Technology Research Institutes (Hachioji) Hinode Plant Ina Plant Tatsuno Plant	Aomori Olympus Co., Ltd. Aizu Olympus Co., Ltd.	Olympus Opto-Technology Co., Ltd. Head Office Omachi Branch Sakaki Branch	Mishima Olympus Co., Ltd. Shirakawa Olympus Co., Ltd. Okaya Olympus Co., Ltd.
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### OUTPUT

<p><b>CO<sub>2</sub> Emissions</b> <span style="float: right;">▶P20</span></p> <p>Electric power .....33,863t-CO<sub>2</sub>                  Heavy fuel oil .....9,014t-CO<sub>2</sub>                  City gas .....1,521t-CO<sub>2</sub>                  Kerosene .....615t-CO<sub>2</sub>                  LPG .....561t-CO<sub>2</sub>                  Others .....293t-CO<sub>2</sub>                  Total .....45,867t-CO<sub>2</sub></p>	<p><b>Emissions of PRTR-listed Substances</b> <span style="float: right;">▶P24</span></p> <p>Toluene.....6.0t                  Xylene.....3.4t                  Ethylene oxide.....0.8t                  Dichloromethane .....0.3t                  Ethylbenzene.....0.1t                  Others.....0.3t                  Total.....10.9t</p>	<p><b>Emission into Water Systems</b> <span style="float: right;">▶P25</span></p> <p>BOD.....5.5t</p> <p><b>Recycled Wastes</b> <span style="float: right;">▶P22</span></p> <p>Paper and cardboard.....734t                  Plastics.....706t                  Waste metals and glass...510t                  Raw waste and sludge...430t                  Waste acids and alkalies...399t                  Waste oil.....235t                  Total.....3,014t</p>	<p><b>Commissioned Waste Processing</b> <span style="float: right;">▶P22</span></p> <p>Waste paper .....110t                  Sludge .....28t                  Waste plastics.....18t                  Waste alkalies .....17t                  Waste metals and glass...16t                  Waste oil.....7t                  Waste acids.....6t                  Others.....3t                  Total.....205t</p>
<p><b>Boiler Air Pollutants</b> <span style="float: right;">▶P25</span></p> <p>SOx .....6t                  NOx .....38t</p>			



Domain of Business

Imaging Systems Group



Digital Camera



Film Camera



IC Recorder



Magnet-optical (MO) Drive

Medical Systems Group



Endoscope Video Information System



Ultrasound Videoscope



Endosurgery System



Endotherapy Accessories

Life Science Group



Biological Microscope



Clinical Analyzer



Genome Analysis Systems

Industrial Systems Group



Industrial Microscope



Industrial Endoscope



Liquid Crystal Substrate Inspection Unit



Distribution ▶



Sales ▶



Services

OUTPUT

Major Products ▶P12

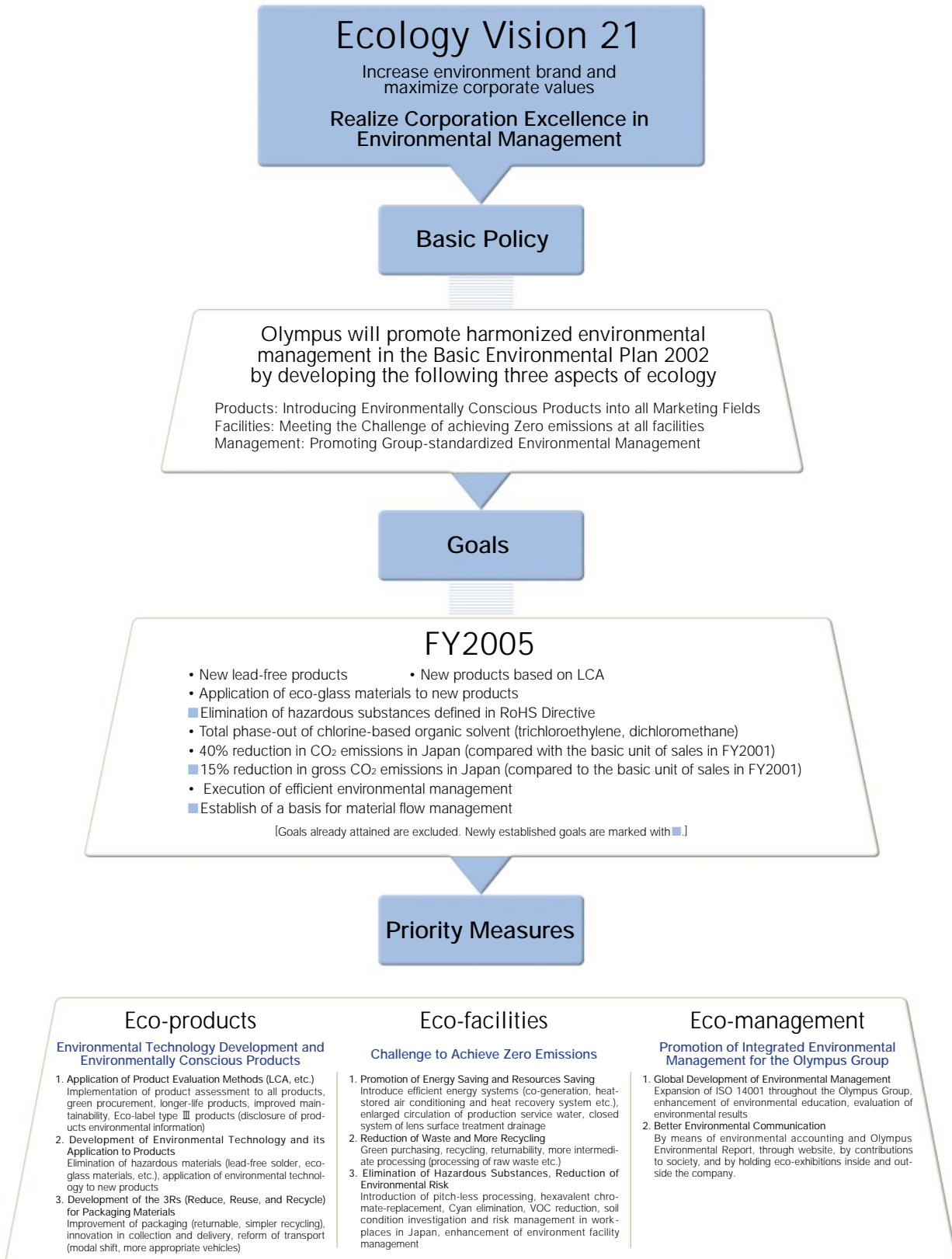
Digital Camera.....	1,376 t
Film Camera.....	773 t
IC Recorder.....	274 t
MO Disk Drive.....	103 t
Endoscope.....	776 t
Microscope.....	593 t
Clinical Analyzer.....	589 t
Measuring Instruments....	725 t
Printer.....	1,104 t
Total.....	6,313 t

Packaging Materials ▶P17

Cardboard.....	1,977t
Paper.....	473t
Plastics.....	320t
Metal.....	.1t
Glass.....	.2t
Total.....	2,773t

# Basic Environmental Plan

Every three years, Olympus formulates a Basic 5-Year Environment Plan based on presidential policy. In FY2004, the second year of the Basic Environmental Plan 2002, we accelerated the promotion of Eco-products, Eco-facilities, and Eco-management.



■ The Basic Environmental Plan 2002 (formulated in December 2001)



■ Results for FY2004

○: Achieved △: In work

## Eco-products (Environmental Technology Development and Environmentally Conscious Products)

Priority Measures	Goals	Results	Self-evaluation	Related Page
Application of Product Evaluation Methods	• Introduction and Promotion of Eco-products	• Establishment of independent Eco-product Standards in three areas: microscopes, cameras, and industrial products • The stereo microscope, digital single-lens reflex camera, and portable industrial endoscope were approved as Olympus Eco-products.	○ ○	p12-15
	• Operation of New Green Procurement	• Green Procurement Standards were reviewed and briefing sessions held for domestic and overseas suppliers starting in January, 2003.	○	p18
	• Introduction of Olympus Life Cycle Assessment (OLCA)	• Eco-label, "ECOLEAF" (Type III) on the OLYMPUS E-1 digital SLR was certified as the first in the field for this type of camera.	○	p15
Development of Environmental Technologies and its Application to Products	• Application of Hexavalent Chromium-free Technology to New Products	• Different types of chromate treatment are under review The study on satisfying durability after zinc plating must be continued.	○	P15
	• Application of Lead-free Solder to New Products	• Applied to lead-free solder to new products such as the OLYMPUS E-1 digital SLR	○	P19
	• Application of Eco-glass to New Products	• Achieved an eco-glass use rate of 98.5%	○	
Development of the 3Rs for packaging materials	• Formulation and Implementation of an Improvement Program for Packaging Materials	• Adopted environmentally conscious packaging for packaging of an individual set of the OLYMPUS E-1 digital SLR • Adopted cardboard for endoscope carrying cases Adopted film wrapping for the microscopes to other products, to reduce packing material use	○ ○	p17

## Eco-facilities (Challenge to Achieve Zero Emissions)

Priority Measures	Goals	Results	Self-evaluation	Related Page
Promotion of Energy and Resource Savings	• CO <sub>2</sub> Emissions in Japan: 6.4% Reduction, Compared to FY2001	• CO <sub>2</sub> emissions at domestic facilities: The goal was not met, although a reduction of 4%, compared to FY2001, was achieved. • Eco-efficiency (consolidated net sales / CO <sub>2</sub> emissions) improved by 6%, compared to the previous year (The Shenzhen Plant [China] is included.) • Assessed energy conservation at domestic plants and the plant in China	△ ○ ○	p20-21
Waste Reduction and more Recycling	• Achievement of Zero Emissions at Major Facilities • Reduced Waste by 8%, Compared to FY2001 • Achieved Recycling Rate of 80%	• Achieved zero emissions at all development, manufacturing, and distribution bases • Reduced waste by 16%, compared to FY2001 • Achieved recycling rate of 94%	○ ○ ○	p22-23
Elimination of Hazardous Substances, Reduction of Environmental Risks	• Total Elimination of Chlorine-based Organic Solvent in FY2005 • Elimination of Hexavalent Chromium • Introduction of Lead-free Soldering • Reduction of Environmental Risks	• Implementing alternatives to dichloromethane	○	p19
		• Working at individual facilities to eliminate hexavalent chromium	○	p24
		• Completed introduction lead-free soldering to the OLYMPUS E-1 digital SLR processing line at the Tatsuno Plant • Reduced soil contamination at the Okaya site and conducted overseas environmental risk assessment	○	p25

## Eco-management (Promotion of Integrated Environmental Management for the Olympus Group)

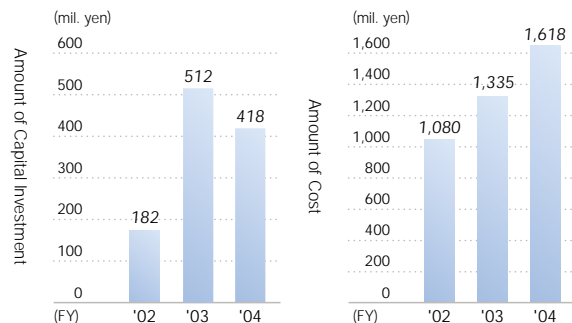
Priority Measures	Goals	Results	Self-evaluation	Related Page
Global Development of Environmental Management	• Group Evaluation Based on Eco-efficiency • Extension of ISO14001 to the Whole Olympus Group	• Performed efficiency evaluations using data on CO <sub>2</sub> emissions and net sales • Started preparation for implementing the Basic Environmental Plan 2005 • Scheduled units acquired ISO 14001 certification Olympus Logitex, ODI (Olympus Diagnostica GmbH [Irish Branch]), the Olympus Corporation Environmental Management System and KS Olympus	○ ○ ○	p10
Better Environmental Communication	• Substantial Environmental Home Pages and Environmental Reports • Participation in outside Eco-exhibitions	• Updated the home page into an HTML format in October • Introduced environmental reports in Chinese • Participated in Ecoproducts 2003 Exhibition	○ ○ ○	p28-29

# Environmental Accounting

In FY2000, Olympus introduced environmental accounting in order to assess costs and effects of environmental protection, and has implemented it to promote environmental management.

## Costs and Effects on Environment in FY2004

The environmental cost in the FY2004 was tabulated, based on the Environmental Accounting Guidelines (2002 edition), of the Ministry of the Environment of Japan. Cost was calculated to include the Shenzhen Plant, one of the largest overseas production bases, in addition to domestic manufacturing facilities. The environmental cost in FY2004 was 1.62 billion yen, up 21% from the preceding year, and capital investment totaled 420 million yen, down 18% from the previous year. Major investments in equipment such as high-efficiency transformers, energy-saving air conditioners, etc., for preventing global warming accounted for 50% of total capital investment. Expenses for collection of products, development of lead-free technologies, and prevention of global warming and reduction of waste increased. One-time ex-



■ Transition in Environmental Conservation Cost

penses were incurred from improvement in recovering polluted soil at the Okaya site, found by the soil investigation in FY2003.

In connection with environment conservation, CO<sub>2</sub> emissions increased from the preceding year, although intermediate waste treatment by contract decreased 67% from a year earlier due to accelerated zero emissions.

In an economic effect of environment protection, energy cost was 1.75 billion yen, down 3% from the previous year. The charge for intermediate waste treatment by contract was 15 million yen, down 65% from a year earlier due to accelerated zero emissions.

Unit: ton

Grouping	Environment Load Index	FY2003	FY2004	Change from Previous FY	Ratio of Change
Effects in Business Place Areas	CO <sub>2</sub> Emission	64,263	66,291	2,028	3%
	Waste Intermediately Treated by Contract	963	315	-648	-67%
	Copy Paper Purchased	133	127	-6	-5%

■ Volume Effects Involved in Environmental Conservation

Unit: million yen

Grouping	Description of Effects	FY2003	FY2004	Change from Previous FY	Ratio of Change
Cost Reduction	Energy Cost	1,800	1,753	-47	-3%
	Waste Intermediately Treated by Contract	43	15	-28	-65%
	Cost of Copy Paper Purchased	21	19	-2	-10%
Income	Trading of Recycled Valuable Articles	16	20	4	25%

■ Economy Effects Involved in Environmental Conservation

Unit: million yen

Grouping	Major Projects	Related Pages	Amount of Capital Investment			Amount of Cost			
			FY2002	FY2003	FY2004	FY2002	FY2003	FY2004	
Cost Inside Business Area	Prevention of Public Nuisance	Replacement of underground tanks with above-ground tanks	p25	59	105	60	226	364	187
	Global Environmental Conservation Cost	Installation of energy saving equipment (high-efficiency transformers, etc.) to prevent global warming	p20-21	57	353	211	22	121	302
	Resource Circulation	Reduction of waste and promotion of a recycling drive (wastewater recycling equipment, recycling cost, etc.)	p22-23	46	14	51	151	280	243
In Upstream and Downstream	Collect and reuse of products (reuse of films for endoscope)	p22-23	0	0	19	13	43	109	
Cost of Control Activity	Management and operation of environmental management	p09-11 p32-39	14	40	0	257	292	290	
Cost of Research and Development	Development of environmentally conscious technologies (lead-free technology, etc.)	p12-16	0	0	77	316	225	413	
Cost of Social Activities	Premises layout and greening	—	6	0	0	93	9	1	
Cost for Damaged Environment	Recovery from soil contamination at the Okaya site	p25	0	0	0	2	1	73	
Total			182	512	418	1,080	1,335	1,618	

■ Cost of Environmental Conservation

Scope: Olympus Corp. and affiliated production companies in Japan, including the Shenzhen Plant (China) from FY2003 on. Period of calculation: April 1 to March 31 next year, each

# Environmental Promotion System

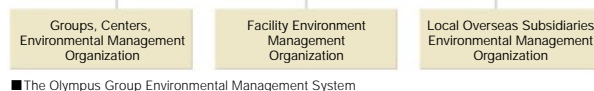
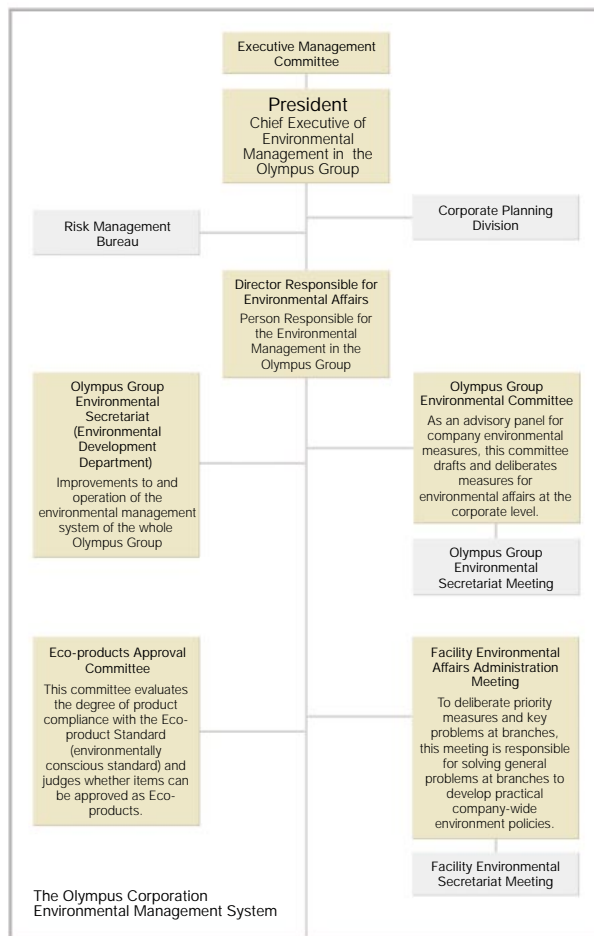
Olympus acquired ISO 14001 certification for the Olympus Corporation Environmental Management System to strengthen and promote environmental management.

## Organization of Promotion

Olympus strives to promote company-wide environmental activities the under exclusive control by the President. The Olympus Corporation Environmental Management System is run by an organization consisting of Director Responsible for Environmental Affairs, the Corporate Planning Division, Risk Management Bureau, Olympus Group Environmental Committee, Facility Environmental Affairs Administration Meeting organized by general managers of facilities, and Olympus Group Environmental Secretariat. The Eco-products Approval Committee was established in FY2004 to certify Eco-products (page 12).

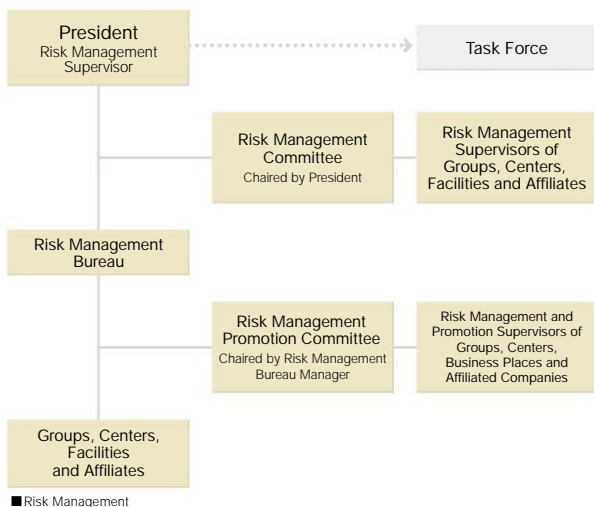
Each Group center and facility addresses environmental issues under the Olympus Corporation Environmental Management System directly reflecting top management policy. Environmental management organizations are formed at the company center, facilities, and companies incorporated overseas corresponding to the Olympus Corporation Environmental Management System (Groups, Centers Environmental Management Organization, Facility Environment Management Organization, and Local Overseas Subsidiaries Environmental Management Organization, respectively).

The Olympus Corporation Environmental Management System operates as the core of the Olympus Group, under which the mid-term environmental plan, and annual environment policy, etc., are drafted. In FY2004, Olympus received ISO 14001 certification for the Olympus Corporation Environmental Management System (box at right) (page 10).



## Risk Management

As economic activities by corporations increase, we have more occasions to encounter unexpected crises due to changes in social systems and awareness. Olympus has appointed the President as the Risk Management Supervisor and has formulated crises management rules for standardized control of crisis information company-wide both in order to prevent the development of a crisis and to promote the early solution of problems, should they arise. These rules apply to environment at risk managements as to enhance environmental protection (page 25).



# Environmental Management System

The Olympus Group uses ISO 14001 environmental management as basic environmental management promotion, and encouraged Group-wide implementation in FY2004.

## ISO 14001 Certification

The Ina Plant, a production facility, acquired the Group's first ISO 14001 certification, followed by production and development facilities and overseas manufacturing sites. Major development and production facilities in Japan obtained ISO 14001 certification by FY2000, and certification for 10 facilities has been renewed.

In FY2004, certification was granted to Olympus Logitex, and KS Olympus (a sales affiliate) and the Olympus Corporation Environmental Management System. Facilities developed environmentally conscious products, energy saving, and reduced waste through improvement via environment management.

Among overseas production affiliates, certification was acquired by Olympus (Shenzhen) Industrial Ltd. in China, Olympus Winter and Ibe GmbH (OWI) in Germany, and KeyMed (Medical and Industrial Equipment) Limited in the UK. In FY2004, Olympus Diagnostica GmbH's Irish Branch (ODI) acquired certification.

## ISO 14001 Certification for the Olympus Corporation Environmental Management System

ISO 14001 certification prompted an intensive management review by the President and encouraged innovation in Plan-Do-Check-Action in the course of the implementation of the Mid-term Environmental Plan and Annual Environmental Policy. We implemented environmental risk management, including a Risk Management Bureau, to incorporate environment management. Since ISO 14001 certification was previously acquired facility by facility, the Olympus Corporation Environmental Management System is unique and effective for company-wide environmental promotion, according to certification authorities.



Interview at examination attended by President Kikukawa (second from left)

### ISO 14001 Certification by KS Olympus Co., Ltd.

KS Olympus, an Olympus domestic sales agents handling Olympus medical endoscopes, microscopes, industrial equipment, clinical analyzers, etc., has 24 business branches, including Head Office. In June 2003, an Environmental Activities Promotion Committee headed by its president was established. As a result of top-down activities, the company established environmental management system targeting all branches and employees. KS Olympus obtained certification as the first Olympus sales affiliate, followed by the Group's largest number of branches which received certification at the same time.



KS Olympus President Kawasaki and Certification

### Olympus Diagnostica GmbH [Irish Branch] (ODI) ISO14001 Certification

ODI uses approximately 400 different chemicals as the raw materials to produce its products. The management of these raw materials is a key issue for the company. We continually improve our environmental compatibility through the following initiatives, waste vendor consolidation, installation of above ground chemical storage tanks and piping, revamp and quality review of our material safety data management process, and implementation of chemical risk assessment for the company. The auditor commented, "Very impressed with the technical knowledge and expertise of the people met and the obvious enthusiasm and commitment of the workforce which will be a source of strength to the Environmental Management System going forward. The company has in place the secure foundations of an effective Environmental Management System. A comprehensive set of Environment objectives, targets and associated programs are in place driving continual improvement in company environmental performance and overall sustainable development."



Certification for ODI and Personnel

Facility	Location	Date of Certification
Ina Plant	Ina-shi, Nagano	February 1997
Tatsuno Plant / Okaya Olympus Co., Ltd.	Tatsuno-machi, Kamiina-gun, Nagano	February 1998
Hinode Plant	Hinode-machi, Nishitama-gun, Tokyo	July 1998
Aizu Olympus Co., Ltd. / Opnotech Co., Ltd.	Aizu-Wakamatsu-shi, Fukushima	October 1998
Shirakawa Olympus Co., Ltd.	Nishigo-mura, Nishishirakawa-gun, Fukushima	October 1998
Aomori Olympus Co., Ltd.	Kuroishi-shi, Aomori	November 1998
Olympus Opto-Technology Co., Ltd., Sakaki Branch	Sakaki-machi, Hanishina-gun, Nagano	December 1998
Mishima Olympus Co., Ltd.	Nagaizumi-cho, Sunto-gun, Shizuoka	June 1999
Olympus (Shenzhen) Industrial Ltd.	Shenzhen, China	September 1999
Technology Research Institutes (Hachioji)	Hachioji-shi, Tokyo	March 2000
Olympus Winter & Ibe GmbH	Hamburg, Germany	May 2001
KeyMed (Medical & Industrial Equipment) Limited	Southend-on-Sea, United Kingdom	March 2002
Olympus Logitex Co., Ltd.	Kawasaki-shi, Kanagawa	November 2003
The Olympus Corporation Environmental Management System	Nishi-Shinjuku, Shinjuku-ku, Tokyo Hachioji, Tokyo	January 2004
Olympus Diagnostica GmbH, Co.	Clare, Ireland	January 2004
KS Olympus Co., Ltd.	Hongo, Bunkyo-ku, Tokyo	March 2004

■ ISO 14001 certifications for the Olympus Group (as of March 31, 2004)

# Environmental Education

It is important to enhance individual employee environmental awareness to ensure environment protection for establishment of a sustainable society. Olympus provides environmental education to everyone from new employees to management, together with environmental awareness training.

## Environmental Education System

Olympus provides environmental education to eligible personnel, business units, and facilities domestic and overseas, consistent with individual responsibilities. Training includes across-the-board education mainly conducted by the Human Resources Development Center of the Human Resources Department and the Environment Development Department. Facility-specific education is given mainly by plants, and education by independent education institutes.

## Company-wide and Facility Education

An internal auditor orientation course has been held at least twice a year as part of company-wide training since 1997. In the intervening 6 years, the 24 sessions have been attended by 526 participants.

As part of company-wide education, the company magazine runs a series on environmental management covering environment-related topics.

Each facility promotes environmental education with its own business activities.



Internal Auditor Orientation Course



Company Magazine

## Olympus Eco-forum

Following FY2003, a panel exhibition introducing environmental activities by domestic and overseas facilities, a debriefing session, and a lecture by a visiting lecturer were held on September 10 and 11, 2003. In-house environmental awards were made to outstanding panel presentations.



Debriefing for Overseas Facilities



Lecture by a Visiting Lecturer

## Overseas Education

Environmental problems may arise globally, and Olympus prepares through environmental education and awareness training at overseas facilities.

At Olympus America Inc., information is shared with employees via an intranet.

At KeyMed (UK), environmental issues are introduced in a corporate brochure distributed to new employees.



OAI Intranet Display



KeyMed Corporate Brochure

## Personnel Environment-related Qualifications

Each facility sets internal standards and systematically educates legally qualified personnel in the environment and labor safety and health to secure the required number of staff members.

Qualification	Number of Actual Persons	Internal Standard	Number of Statutory Persons	
Pollution Control Managers	Air	35	16	2
	Water Quality	95	29	12
	Noise	17	5	0
	Vibration	15	3	0
Senior Pollution Control Manager	1	0	0	
Manager of Industrial Waste Requiring Special Treatment	58	13	13	

■ Number of Environment-related Qualified Persons