

Energy and Resources Management

Olympus promotes energy saving to save energy and protect against global warming. While energy consumption by the Olympus Group increased as businesses expanded, consumption at domestic facilities decreased and the basic unit of sales demonstrated dramatic improvement.

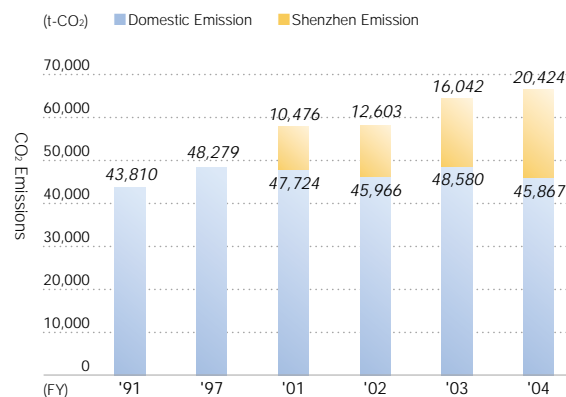
Transition in Total Energy Use

In FY2004, energy consumption at domestic facilities was 1,151 terajoules, down 3.9% from the previous year. CO₂ emissions also decreased by 5.6% from the previous year. Unit consumption to sales was down 23% from a year earlier. We strive to operate by using environmental resources more effectively. Since FY2001, we have maintained a track record of energy consumption at the Shenzhen Plant in China, our largest overseas facility. In FY2004, due to increased production worldwide, energy consumption including that of the Shenzhen Plant was 1,567 terajoules, a 3.9% increase from the previous year.

In FY2004, determining energy consumption by 10 domestic facilities and the facility in China and consulting personnel responsible for equipment at manufacturing facilities about the performance of inspection of transformer station, pumps, motors, air compressors, lighting, air conditioners, manufacturing equipment, etc., and proper timing of environmentally conscious equipment replacement to implement ideas for energy-related improvement, Olympus established a plan to save energy. We are emphasizing energy saving to cope with increasing overseas energy consumption reflecting the expansion of global business.

Transition in CO₂ Emissions

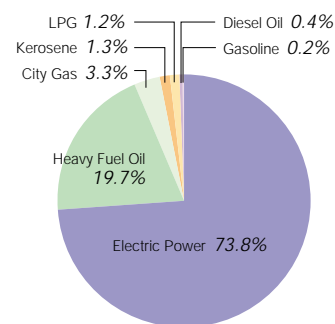
Total CO₂ emissions due to manufacturing by the Olympus Group increased to 66,291 tons of CO₂, up 2.6% from the previous year. Emissions are increasing as business expands. Unit consumption to sales decreased by 55% from a year earlier only at domestic facilities. We are now working to maintain production with high energy efficiency by promoting safe-energy programs, reducing energy consumption in production, installing streamlined equipment, and applying production innovations. Starting in FY2004, we are actively implementing programs for preventing global warming by controlling CO₂ emissions and nonenergy-related greenhouse gas emissions.



* We calculate the CO₂ emission factor for Shenzhen similarly to domestic cases using the factor for FY1999 prescribed in the Law concerning the Promotion of the Measures to Cope with Global Warming.

■ Transition in CO₂ Emissions

Items	Unit	FY1991	FY1997	FY2001	FY2002	FY2003	FY2004
CO ₂ Emissions	t-CO ₂	43,810	48,279	47,724	45,966	48,580	45,867
Amount of Energy	TJ	1,084	1,187	1,194	1,159	1,198	1,151
Net Sales	100 mil. yen	1,574	2,017	3,129	3,283	3,464	4,252
Unit Consumption to Sales	t-CO ₂ /100mil. yen	27.8	23.9	15.3	14.0	14.0	10.8
Unit Consumption to Sales (100 in FY1997)	%		100	64	59	59	45
Crude Oil Conversion Basis	kℓ	28,069	30,723	30,910	30,000	31,012	29,806



■ CO₂ Emissions by Type of Energy Source in FY2004

* CO₂ emissions: CO₂ emissions for each year are calculated on the basis of factors specified in the FY2000 Regulations for the Law concerning Promotion of Measures to Cope with Global Warming.

* Conversion to Joules: For electrical power, factors specified in Regulations for the Law concerning Rational Use of Energy are used for each year but for other types of energy, factors specified in Overall Statistics about Energy is used.

* Conversion to crude oil: Conversion is conducted on the basis of factors specified in Regulations for the Law concerning Rational Use of Energy.



Energy-saving Activities

Timer-controlled Operation of Blowers and Air Conditioners

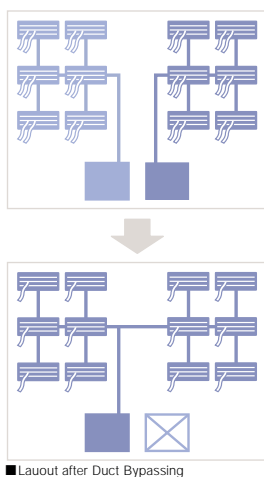
Olympus Opto-Technology Co., Ltd.,
Sakaki Branch

Two 11 kW blowers operated 24 hours for aeration in the wastewater treatment facility. Reviewing air quantity required for wastewater treatment showed that one blower was sufficient. We installed a calendar timer for air conditioners to stop cold air intake during spring and fall, off-season. Thanks to these two measures, annual electricity consumption was reduced to 261,000 kWh.

Saving Energy for Large Air Conditioners (Cool Air Intake, Duct Bypassing, Air Conditioners)

Shirakawa Olympus Co., Ltd.

Two cool air intake air conditioners were used to cool the workplace for circuit board assembly of about 1,000 m² floor space even in winter because of heat generated through soldering. Bypassing the air conditioner duct made one air conditioner sufficient, reducing power consumption of 44,000 kWh per year.



Replacement with High-efficiency Transformers

Olympus Opto-Technology Co., Ltd.,
Omachi Branch

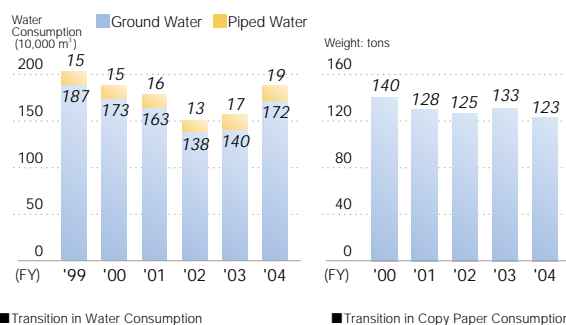
Old transformers installed over 15 years ago lost large amounts of electricity. We installed high-efficiency oil transformers, cutting electricity loss by 22% over conventional transformers and reducing electricity consumption by 40,000 kWh a year.



High-efficiency Transformers

Resource-saving Activities

Total water consumption in FY2004 was 1.91 million m³, by 22% increase from a year earlier. Copy paper consumption was 123 tons, down 8% from the previous year.



Reduction in Water Consumption

Shirakawa Olympus Co., Ltd.

In FY2004, Shirakawa Olympus used 9,300 m³ of piped water. Since water from a nearby village was delivered to the workplace at comparatively high pressure, we decreased pressure using a pressure control valve to reduce water consumption by 1,000 m³ a year.



Pressure Reduction Valve for Water

Water Circulation System

Ina Plant

At the Ina Plant, lens cleaning equipment consumes large amounts of purified water for lens cleaning. We reduced water consumption by 1,200 m³ per year by re-purifying used water, using circulation system.



Water Purification Equipment

Waste Management and Recycling

In FY2004, we focused on realizing our Zero emissions declaration. As a result, all major facilities in Japan achieved Zero emissions.

All Major Facilities in Japan Achieved Zero Emissions

In FY2004, we worked to achieve Zero emissions declarations at major facilities. This was accomplished by 11 major development, production, and distribution bases in Japan.

Olympus prioritized reduction of the amount of final disposal, and its criterion for Zero emissions is to reduce the volume of landfill after intermediate processing within 1% or less of total amount of emissions. We perfected assessment standards and regulations for assessing Zero emissions.

The assessment criterion was compliance with regulations, such as consignment contracts with contractors, manifests, etc., and whether promotion at each work site succeeded and maintenance and control after achievement was sustainable.

Individual facilities separated and collected waste and promoted recycling, starting with Tatsuno Plant's achievement of Zero emissions in June and all major facilities in Japan had achieved Zero emissions by March 2004.

We issued Olympus Zero Emissions Achievement Certificates to individual facilities.

Olympus will continue to promote Zero emissions at sales and marketing sites in Japan and bases abroad.



Assessment

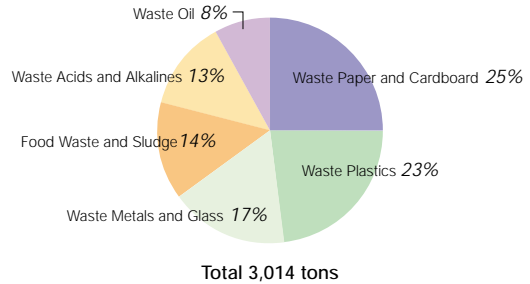


Achievement Certification Award Ceremony

Amount and Rate of Recycling in FY2004

Olympus counts the amount of resources recycled as the amount of those reused as resources for recycling by facilities or outsourcing contractors out of total emission materials at each facility. This amount includes materials that were sold as valuable resources.

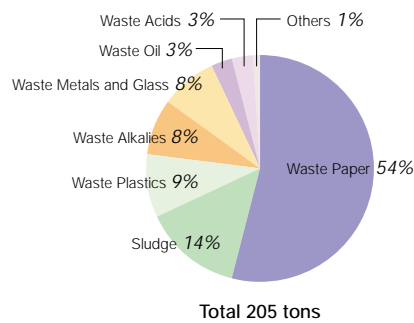
Recycling in FY2004 was 94%, up 18% from the previous year. By looking for ways to thoroughly separate and collect waste and routes for recycling, it has become possible to recycle even waste considered to be conventionally difficult to recycle.



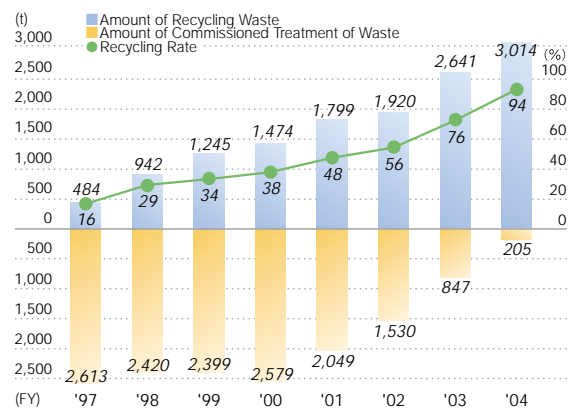
Breakdown of Amount of Recycled Materials

Transition in Commissioned Waste Processing

To reduce commissioned waste processing, we reused and recycled waste within the company, focusing on lens sludge, waste plastics, waste acids, and waste alkalies, all unique to our company. As a result, commissioned waste processing discharged from development and production sites in Japan stood at 205 tons in FY2004, down 642 tons (76%) compared to the previous year and 2,408 tons (92%) compared to the standard year (FY1997).



Breakdown of Commissioned Waste Processing



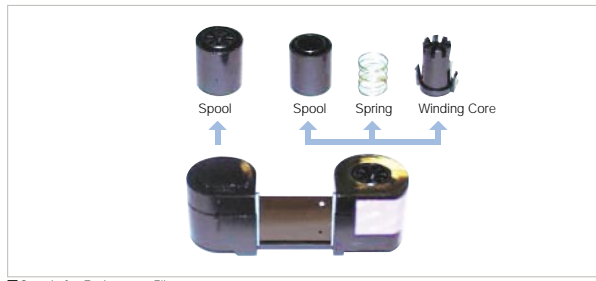
Transition in Amount of Recycling Materials and Commissioned Waste Processing



Waste Reduction and Recycling

● Increase Reuse of Film Spools for Endoscopes Shirakawa Olympus Co., Ltd.

We are collecting and reusing endoscope film cassettes, which consist of a spool, a spring, and a winding core. Collection now stands at 100% — 6 tons annually.



■ Spools for Endoscope Film

● Recycling Different Metal Chips into Valuable Resources Ina Plant

In addition to achieving Zero emissions, we are improving waste processing. In FY2004, we focused on reducing different types of chips from metal processing plants and set up a sectional committee within the Group to improve employee awareness of waste separation and to prepare temporary storage and plural buckets for metal chips. Thanks to these efforts, we recycled nearly 50% of metal chips weighing nearly 9 tons into valuable resources and reduced waste generation and processing costs.

● Reduction of Waste Discharged by Introducing an Acid Recovery Equipment Tatsuno Plant

To reduce waste acid discharged from plating worksites, we started operating an acid recovery equipment in November 2003. We expect to reduce discharged waste acid, classified as a specially controlled industrial waste, by about 26 tons a year.



Acid Recovery Equipment

● Introduction of Waste Liquid Treatment Equipment and Reuse of Distilled/Discharged Water Hinode Plant

Since waste liquid discharged from dicing saws used in the manufacturing line for electronic scanning ultrasonic oscillators contains lead exceeding 0.1 ppm in concentration, waste liquid had to be treated separately from general industrial water. We introduced waste liquid treatment equipment able to process 1,200 liters a day, and produced recycled water after concentrating waste liquid without outsourcing it for disposal. We store recycled water in a tank watering to trees, washing commuter buses, etc., using a pressure pump.



Waste Liquid Treatment Equipment

● Changing Aqueous Cleaning for Cutting Parts Shirakawa Olympus Co., Ltd.

When cleaning cutting parts with water, we changed from conventional cleaning to cleaning by high-pressure spraying of soft water (temperature 50 °C) to parts for removing cutting oil. We plan to cut costs by about 4 million yen a year by reducing the use of petroleum-based detergent and cleaning hours. We are thermally recycling cutting oil after collecting oil using an oil/water separator. We are also reusing soft water for cleaning.

● Reducing the Number of Cardboard Boxes Mishima Olympus Co., Ltd.

Parts for clinical analyzers are small-lot products of a wide variety procured from many suppliers. This generates much waste material such as cardboard for packaging and shock-absorbent cushioning material. Working with other firms, we made special returnable boxes for packaging corresponding to the specific shape of each part, reducing waste. We cut transport costs thanks to firms being willing to take back returnable boxes. In FY2004 alone, we reduced cardboard by about 600 kg. This also reduced the transport cost of other firms.



Special Returnable Box Used for Packaging
① Folding plastic box. The shock absorbent-material inside is returnable.
② Plastic cardboard. The shock-absorbent material is for exclusive use.

Chemicals Management

Manufacturing lines use many different types of chemical substances, some of which could impact harmfully on the environment and health.

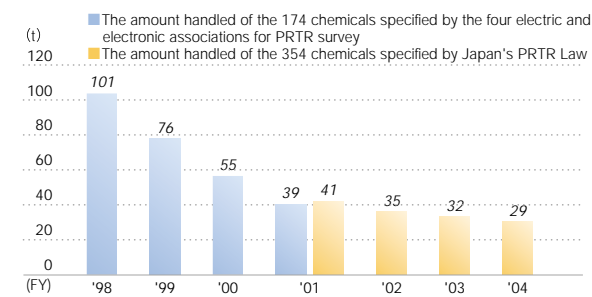
To reduce this impact, Olympus is taking different steps to reduce the discharge of chemical substances into the environment.

PRTR Surveys

We have conducted PRTR (Pollutant Release and Transfer Register) surveys since FY2001 for 354 substances subject to the PRTR Law promulgated in FY2002. Each facility examines chemical substances whose annual handling exceeds 10 kg, and round up the result for substances handled by all facilities, total handling exceeded 100 kg.

Total handling of substances subject to the PRTR Law in FY2004 stood at 29.27 tons, down 2.50 tons compared to the previous year.

We had completely phased out trichloroethylene by March 2003, with few exceptions, by giving work environment maintenance first priority.



■ Transition in Handled PRTR Substances

Material Code	Chemicals	Amount Handled	Volume Released			Volume Consumed	Volume Recorded	Volume Removed	Volume Recycled	Volume of Landfill
			Air	Water Area	Soil					
16	2-amino ethanol	0.54							0.54	
30	Epoxy resin of bisphenol A (liquid)	0.26	0.02			0.17		0.06	0.01	
40	Ethyl benzene	0.19	0.13					0.06		
42	Ethylene oxide	3.67	0.75	0.06			2.87			
43	Ethylene glycol	0.43						0.43		
63	Xylene	5.12	3.40					1.67	0.02	
69	Hexavalent chromium compounds	0.67						0.67		
101	Acetic acid 2-ethoxyethyl	0.30	0.02			0.11		0.17	0.00	
145	Dichloromethane *1	0.47	0.33					0.01	0.12	
207	Copper water-soluble salt	0.13		0.04		0.05		0.05		
211	Trichloroethylene *1	0.11	0.11							
224	1,3,5-trimethyl benzene	0.24						0.24		
227	Toluene	8.44	5.97					2.43	0.04	
230	Lead and lead compounds	5.12				2.83		1.52	0.77	
231	Nickel	0.36	0.00	0.03		0.23		0.04	0.06	
232	Nickel compound *1	1.91	0.02	0.24		0.74		0.62	0.29	
243	Barium and water-soluble barium compounds	0.11				0.01		0.10		
253	Hydrazine	0.12	0.06	0.06						
283	Hydrogen fluoride and water-soluble hydrogen fluoride salts	0.80						0.80		
304	Boron and boron compounds	0.24	0.00	0.02		0.03		0.19	0.00	
307	Poly (oxy-ethylene)=alkyl ether*2	0.32		0.03				0.29		
309	Poly (oxy-ethylene) = nonyl phenyl ether	0.25		0.01			0.25			
	Total	29.27	10.85	0.49	0.00	4.17	3.11	9.34	1.32	0.00

*1: Dichloromethane, trichloroethylene, and nickel compounds (including nickel sulfate) are subject to survey of noxious substances.

*2: Limited to those with number of carbons in alkyl base radical is 12 to 15 and their mixture.

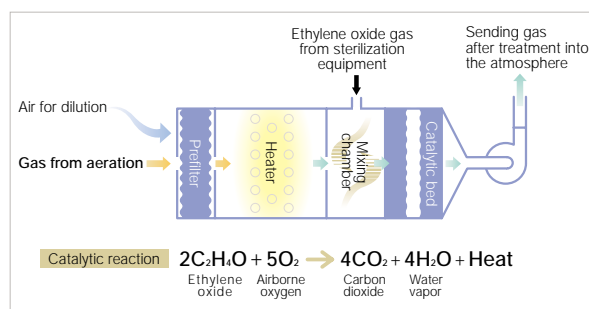
■ PRTR Survey Result

Totals may not correspond to the actual sum due to rounding off.

Catalytic Decomposition of Ethylene Oxide Gas

Aomori Olympus Co., Ltd.

Ethylene oxide gas is widely used in hospitals and health clinics for sterilization. We introduced catalytic decomposition equipment for discharging ethylene oxide sterilization gas without impacting on the environment, discharging it as a harmless gas.



■ Decomposition and Chemical Reaction Formula

Reduction of Ethylene Glycol

Ina Plant

We looked for an alternative to ethylene glycol, and developed an alternative for all lens automatic processor lines. By eliminating the use of ethylene glycol, we reduced its use by 350 kg a year.

Unit: tons

Risk Management

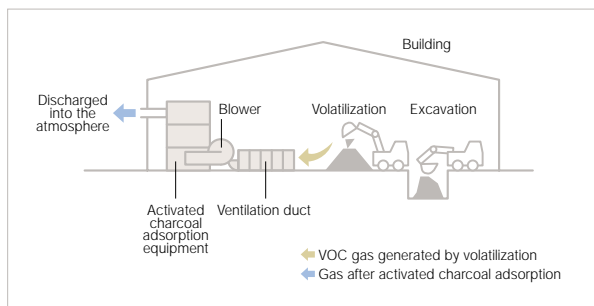
In FY2003, we cleaned up the Okaya site, where contamination was confirmed to exceed the standard, and implemented soil improvement measures. We are also developing, positively, environmental assessment abroad.

Cleaning up Soil at the Okaya Site

We cleaned up soil at the Okaya site, where contamination of soil was found by a general soil survey in FY2003. Soil in which trichlorethylene exceeded the environmental standard was placed in a sealed building to volatilize the substance. Soil was collected, cleaned, and returned to the original site. Soil containing heavy metals was broken up and replaced with clean soil. Contaminated soil was reused as cement material, completing cleanup.



Soil Cleanup



Emergency Training

Up to last year, we reported simulated training in emergencies at each facility. To obtain ISO 14001 certification in January 2004, for the Olympus Corporation Environment Management System, we implemented emergency training to improve risk management, collectively managing risk information company-wide. We checked the company's intranet Emergency Report System to see if information is accurately and unfailingly transmitted through the emergency communication route and each contact point. Linked with simulated emergency training at the Tatsuno Plant, the risk management section, the Public Relations & Investor Relations Department (Main Office, Shinjuku Monolith Building), and the Environmental Development Department joined in training, setting up countermeasures for Head Office and emergency press conferences.



Emergency Training at Tatsuno Plant



Meeting on Emergency Training at Head Office

Execution of Environmental Risk Assessment in Overseas Plants

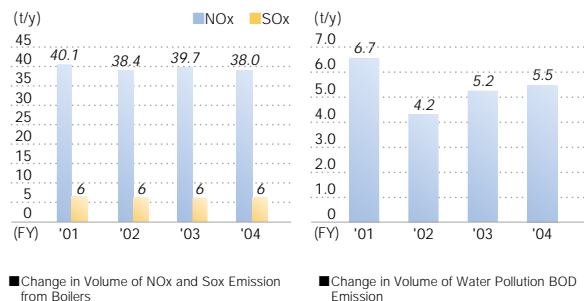
Environmental risk was assessed at overseas plants at Olympus Optical Technology Philippines, Inc. (OPI), and at China's Shenzhen and Panyu Plants. We visited OPI affiliates to match environmental management and improvement items. In environmental assessment and environmental risk diagnosis abroad, we observe laws and regulations of the governing country and implement assessment or diagnosis by setting up, globally, stricter voluntary standards.



Environmental Risk Assessment

Preventing Air and Water Contamination

The Olympus Group observes laws and regulations and ensures that individual sites prevent air and water from being contaminated by setting voluntary control standards severer than applicable regulations for maintaining and managing environmental facilities.



Lawsuit/Penalty/Complaint

In FY2004, Olympus faced no violations of environmental laws, lawsuits, penalties, fines, or other problems whatsoever. The single complaint about noise we received related to a plant located in a semi-industrial zone we handled by upgrading the ventilation duct fan and reducing noise, even though no threshold measured near the plant was exceeded.