

# Shionogi's Environmental Activities

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## Efforts to Preserve the Environment

In carrying out its business activities, Shionogi is aware that, as a company, it has an important social responsibility to maintain and promote improvement of the global and local environments. To lessen its environmental impact in all of its business activities, Shionogi established the Shionogi Group's Basic Environmental Policy. In line with this policy, we have established the Shionogi Group Environmental Protection Plan and conduct a growing range of environmental preservation activities. Although the scale of manufacturing and research and development activities increased in fiscal 2008, the Company moved ahead with efforts to reduce the environmental load of all its activities.

### The Shionogi Group's Basic Environmental Philosophy

Under Shionogi's Company Policy to "strive constantly to provide medicine of the best possible kind essential for protection of the health of the people," the Shionogi Group is keenly aware that a company is also a member of society. As such, the Group will contribute to building a richer society by placing priority on environmental protection, pollution prevention, and human safety in its pharmaceutical-related business activities.

#### 1. Environmental Management System

The Shionogi Group will promote high-quality environmental protection activities by assigning the Director in charge of the environment to the post of Chief Environmental Supervisor and clarifying organizational responsibilities and authority for environmental management.

#### 2. Compliance with Laws and Regulations

The Shionogi Group will work to protect the environment by complying with environmental laws and regulations as well as setting voluntary management standards.

#### 3. Reduction of Environmental Impact

In its research and development, manufacturing, distribution, marketing, and other business activities, the Shionogi Group will set and periodically revise targets in areas such as energy and resource conservation, waste reduction, and strengthening management of chemical substances, striving for continual improvement.

#### 4. Education and Training

The Shionogi Group will raise the awareness of all employees toward environmental protection by conducting environmental education and training and providing environment-related information.

#### 5. Coexistence with Society

From its standpoint as a corporate citizen, the Shionogi Group will cooperate in environmental protection activities of regional communities. In addition, we will disclose our environmental information to promote mutual understanding with society.

#### 6. Disclosure of Our Basic Environmental Policy

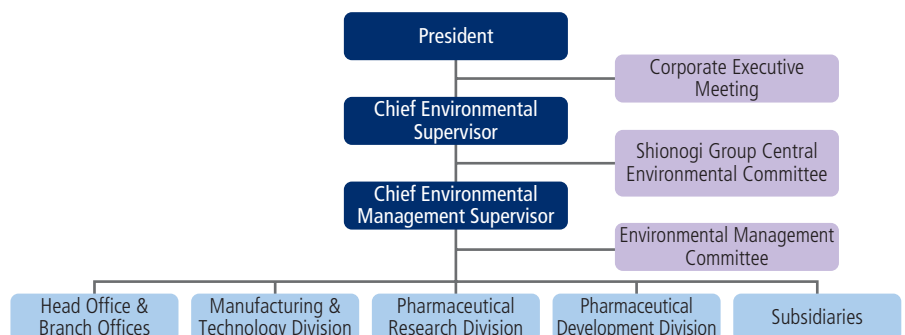
The Shionogi Group will disclose the Basic Environmental Policy both inside and outside the Group.

April 1, 2008  
Isao Teshirogi, President and Representative Director  
Shionogi & Co., Ltd.



### Environmental Management Organization

The Shionogi Group promotes environmental preservation activities under the direction of the Chief Environmental Supervisor and the Chief Environmental Management Supervisor, whose authority extends over all of the Shionogi Group. All major business sites have environmental committees chaired by the Environmental Supervisor and composed of the Environmental Management Supervisor, environmental supervisors from each department, and others. The committees deliberate on and approve the operations of the environmental management system.



## Environmental Management System

### ISO 14001

Shionogi's R&D and manufacturing departments and domestic manufacturing subsidiaries, which have a relatively large environmental impact, have obtained certification in accordance with the ISO 14001 international environmental management standard. These units are audited by an external organization each year to verify the effectiveness of their management systems. In fiscal 2008, Shionogi, Bushu Pharmaceuticals Ltd., and Nichia Pharmaceutical Industries Ltd. underwent a qualification-maintenance audit by Japan Chemical Quality Assurance Ltd. (JCQA), and their certifications were extended.



Environmental management system ISO 14001 certificates

### Environmental Audits

Shionogi conducts environmental audits of business sites and Group companies to verify that they are complying with environmental laws and regulations, properly managing environmental risks, and making continual improvements to their management systems. In the case of shortcomings, measures are organized to rectify those shortcomings. In fiscal 2008, environmental audits were conducted at the Settsu Plant and Aburahi Laboratories.



Environmental audits (Aburahi Laboratories)

### Environmental Education/Training

Shionogi conducts environmental education to raise environmental awareness among employees and provides training on such subjects as managing facilities to prevent environmental pollution. Other activities include qualification

training of internal auditors to audit the operation of the environmental management system and education to raise their skill level. In addition, Shionogi establishes response procedures regarding such events as earthquakes, tsunami, and other natural disasters as well as fires, chemical leaks, and other emergencies. Each year, Shionogi conducts drills to practice the procedures and reevaluates procedures and emergency equipment and materials.

In fiscal 2008, because of the strong earthquakes that occurred in Japan's Tohoku region during June and July of 2008, the Kanegasaki Plant and other business sites placed emphasis on earthquake response measures and implemented drills of such measures. In addition to evacuation, personnel safety verification, and reporting procedures, preparations were made for responding to fires by undertaking drills of fire-extinguishing measures and early-stage fire response measures and confirming related capabilities. Furthermore, the Shionogi Research Laboratories responded to a revision of Fire Service Act standards by changing the siren sound of emergency alarm broadcasts to a beeping sound.



Disaster prevention drill (Settsu Plant)

### Information Disclosure

Initially, Shionogi issued a separate Environmental Report as a printed brochure that was also made available via the Internet. Since fiscal 2007, the Company has integrated the Environmental Report with its Annual Report and disclosed environmental information via its Annual Report. Detailed information, including site data, is disclosed via the Company's website.



Environmental Reports and Annual Reports (2000-2008)

### Legal Compliance/Accidents/Complaints

Regarding the prevention of air and water pollution and compliance with other regulation mandated environment-related measure-

ment values, Shionogi established necessary procedures and undertakes monitoring and measuring activities. In addition, each year, the Company confirms the appropriate administration of these activities by using procedure evaluation sheets.

Shionogi has maintained a flawless performance concerning the non-occurrence of environment-related penalties or litigation. In fiscal 2008, however, regarding such laws as the Invasive Alien Species Act, the Company was at fault in the late submission of applicant change notifications, the surpassing of breeding volume limits, and certain other matters. To prevent the recurrence of this, the Company has made changes to procedural handbooks and provided educational programs for the responsible employees. In addition, transformers containing polychlorinated biphenyls (PCBs) were temporarily transported away from their installation site during a building demolition project but were subsequently recovered, and appropriately managed as PCB waste products. During fiscal 2008, there were zero cases in which Shionogi exceeded regulation mandated environment-related measurement values or was the object of environment-related complaints.

### Interaction with Local Communities

Shionogi maintains communication with local communities through participation in cleanup activities around each site and in environment-related associations as well as by conducting factory tours and undertaking other activities. We endeavor to always provide advance notice of upcoming construction and demolition work to the heads of local residents' associations, school principals, and other concerned parties.

In fiscal 2008, the Kanegasaki Plant co-sponsored "Iwate Prefecture's CO<sub>2</sub> Diet Point Promotion program" and the "Kanegasaki Greenery and Flower Bank." In addition, the Aburahi Laboratories organized a work-site experience study program for local junior high school students, who were provided with an opportunity to experience a portion of environment-related work processes.



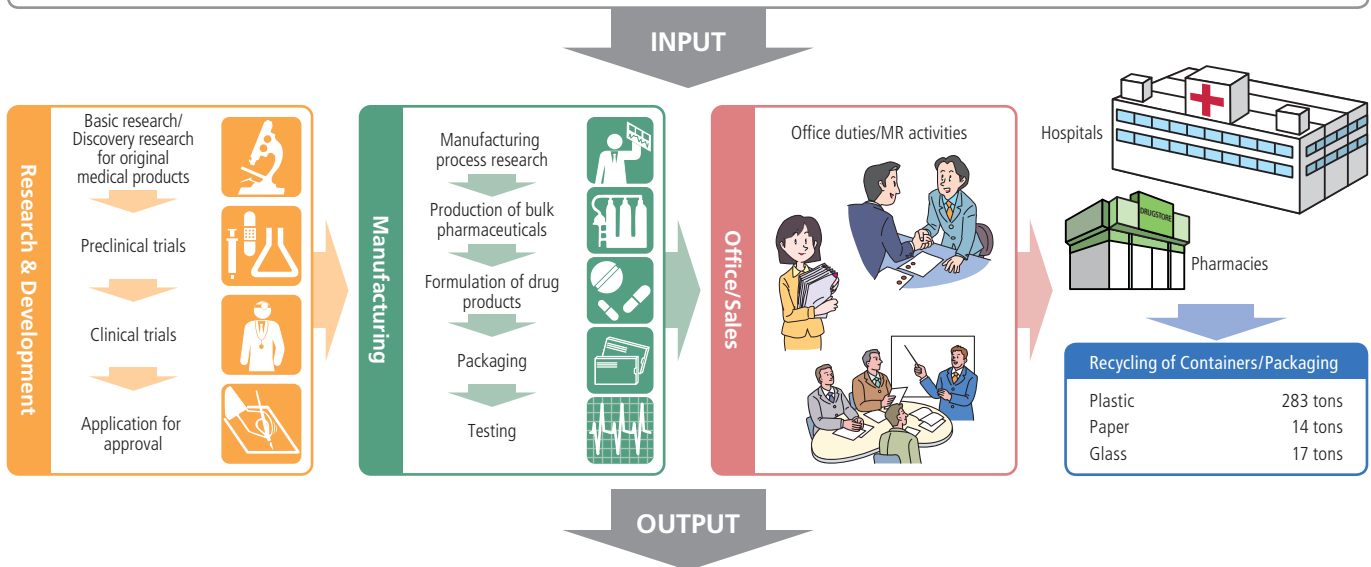
Cleanup activities (Kuise Site)

## Shionogi and the Environment

Shionogi works to reduce its environmental impact by comprehensively measuring the energy inputs and waste product generation associated with its business operations and setting targets for such items as greenhouse gas emission volume and waste product volume. We are also receiving cooperation from transactional counterpart companies regarding such issues as green procurement and the consigning of waste disposal to appropriate waste management contractors.

In fiscal 2008, the expansion of business activities led to a rise in greenhouse gas emissions generated, although the partial revision of waste treatment methods and other factors enabled a decrease in total waste product volume.

Item	Shionogi		Subsidiaries		Shionogi Group	
	Amount Used	Calorific Value (MJ)	Amount Used	Calorific Value (MJ)	Amount Used	Calorific Value (MJ)
Electricity (purchased)	103,383 MWh	1,016,257,210	18,522 MWh	182,068,704	121,905 MWh	1,198,325,914
Kerosene	7 kl	262,478	0 kl	14,680	8 kl	277,158
Fuel oil A	12,083 kl	472,445,300	3,639 kl	142,284,118	15,722 kl	614,729,418
Propane	17 tons	854,404	0 ton	14,056	17 tons	868,460
City gas	7,366 thousand m <sup>3</sup>	286,978,905	7 thousand m <sup>3</sup>	262,621	7,373 thousand m <sup>3</sup>	287,241,525
Gasoline (in-house)	3,328 kl	115,165,892	131 kl	4,532,254	3,459 kl	119,698,146
Diesel oil (in-house)	2 kl	91,413	0 kl	11,460	3 kl	102,873
Water intake	1,619 thousand m <sup>3</sup>		352 thousand m <sup>3</sup>		1,971 thousand m <sup>3</sup>	



Item	Shionogi	Subsidiaries	Shionogi Group
	Amount Released	Amount Released	Amount Released
Greenhouse gas emissions	94,692 tons-CO <sub>2</sub>	16,882 tons-CO <sub>2</sub>	111,574 tons-CO <sub>2</sub>
Environmental emissions of PRTR Class 1 chemical substances	100 tons	4 tons	104 tons
Waste generated	5,964 tons	1,319 tons	7,283 tons
Waste sent directly to landfills	1 ton	0 ton	1 ton
Public sewerage	494 thousand m <sup>3</sup>	36 thousand m <sup>3</sup>	530 thousand m <sup>3</sup>
Natural waterways	972 thousand m <sup>3</sup>	261 thousand m <sup>3</sup>	1,233 thousand m <sup>3</sup>
NOx	167 tons	15 tons	182 tons
SOx	24 tons	14 tons	38 tons
BOD	12 tons	1 ton	13 tons
COD	7 tons	2 tons	8 tons

## The Phase 3 Shionogi Group Environmental Protection Plan

Previously, Shionogi worked to reduce its environmental impact based on two stages of its Company-wide Environmental Protection Plan; Phase 1 covered fiscal 1995 through 2000, and Phase 2 covered fiscal 2000 through 2004.

Aiming to further augment its environmental activities and expand their scope to include the parent company and other Shionogi Group companies, Shionogi is currently carrying out Phase 3 of the Shionogi Group Environmental Protection Plan, which covers fiscal 2005 through 2010.

### Targets and Results of Phase 3 Shionogi Group Environmental Protection Plan

Phase 3 Shionogi Group Environmental Protection Plan Targets	Fiscal 2008 Targets
<p><b>1 Strengthen conservation of resources and waste disposal measures</b></p> <ul style="list-style-type: none"> <li>Reduce amount of waste generated by 38% (to 4,990 tons) [42% reduction to 4,460 tons]</li> <li>Reduce waste 40% by fiscal 2015 (to 4,830 tons) [44% reduction to 4,350 tons]</li> </ul> <hr/> <ul style="list-style-type: none"> <li>Promote zero emissions</li> </ul> <hr/> <ul style="list-style-type: none"> <li>Reduce use of copy paper and printing paper by 5% (to 36.5 million sheets) [7% reduction to 34.3 million sheets]</li> <li>Reduce 8% in fiscal 2015 (to 35.3 million sheets) [10% reduction to 33.1 million sheets]</li> </ul>	<p><b>13% reduction</b> (to 6,971 tons) [25% reduction to 5,794 tons]</p> <ul style="list-style-type: none"> <li>Raise environmental efficiency by reducing the amount of waste generated (Kanegasaki Plant)</li> <li>Implement registration processes for the treatment of PCB waste products (Shionogi Research Laboratories, Aburahi Laboratories)</li> </ul> <hr/> <p><b>Waste sent directly to landfills: 0.95 ton</b> [0.95 ton]</p> <ul style="list-style-type: none"> <li>Promote appropriate treatment methods and reduce waste volume to zero (Nichia Pharmaceutical Industries)</li> <li>Further increase the sophistication of waste separation into burnable and non-burnable categories (Nagoya branch office)</li> </ul> <hr/> <p><b>8.3% reduction</b> (to 35.255 million sheets) [10.3% reduction to 33.024 million sheets]</p> <ul style="list-style-type: none"> <li>Employ shared folders and diverse printing machine functions to achieve further progress toward paper-free operations</li> </ul>
<p><b>2 Implement measures to counter global warming</b></p> <ul style="list-style-type: none"> <li>Maintain greenhouse gas emissions at level of benchmark year (to 102,500 tons-CO<sub>2</sub>) [8% reduction to 84,000 tons-CO<sub>2</sub>]</li> <li>Reduce 1% in fiscal 2015 (to 101,500 tons-CO<sub>2</sub>) [8% reduction to 84,000 tons-CO<sub>2</sub>]</li> <li>Promote energy conservation</li> </ul>	<p><b>Limit increase to 10.3%</b> (to 113,086 tons-CO<sub>2</sub>) [5.9% increase to 97,207 tons-CO<sub>2</sub>]</p> <ul style="list-style-type: none"> <li>Work to renovate energy-saving facilities</li> <li>Increase environmental efficiency (Kanegasaki Plant)</li> </ul>
<p><b>3 Strengthen management of chemical substances</b></p> <ul style="list-style-type: none"> <li>Monitor and reduce use, emissions and transfer of hazardous chemicals</li> </ul> <hr/> <ul style="list-style-type: none"> <li>Completely eliminate specified CFCs (applies to equipment holding more than 20kg)</li> </ul> <hr/> <ul style="list-style-type: none"> <li>Set and manage voluntary control levels for atmosphere, wastewater, soil, and underground water</li> </ul>	<ul style="list-style-type: none"> <li>Continue to monitor use, emissions and transfer of hazardous chemicals as well as undertake appropriate management</li> <li>Reduce atmospheric emissions of dichloromethane to not more than 87 tons (Kanegasaki Plant)</li> <li>Practice and sustain environment-friendly experiment methods (Shionogi Research Laboratories)</li> </ul> <hr/> <ul style="list-style-type: none"> <li>Renovate three facilities employing specified fluoron gases (Kuisse Site)</li> </ul> <hr/> <ul style="list-style-type: none"> <li>Continue periodic measurement and evaluation of air, water, and soil</li> </ul>
<p><b>4 Enhance system for evaluating safety of chemical processes</b></p>	<ul style="list-style-type: none"> <li>Maintain administration of chemical process safety evaluation system (Kuisse Site)</li> </ul>
<p><b>5 Promote Product Life Cycle Assessment</b></p>	<ul style="list-style-type: none"> <li>Consider selection of packaging materials, methods, etc., based on results of environmental impact surveys (Kuisse Site)</li> </ul>
<p><b>6 Implement environmental accounting</b></p>	<ul style="list-style-type: none"> <li>Continue to collect data in accordance with environmental accounting guidelines</li> </ul>
<p><b>7 Expand green purchasing</b></p> <ul style="list-style-type: none"> <li>Raise rate of green purchasing of office supplies to 75% [75%]</li> <li>Raise rate to 80% in fiscal 2015 [80%]</li> </ul>	<p><b>Green purchasing rate 78%</b> [76%]</p> <ul style="list-style-type: none"> <li>Promote green procurement</li> </ul>
<p><b>8 Contribute to society</b></p>	<ul style="list-style-type: none"> <li>Promote communication with surrounding communities</li> </ul>
<p><b>9 Disclose environmental information</b></p>	<ul style="list-style-type: none"> <li>Publish environmental information as part of the Annual Report</li> </ul>

Scope of application: Shionogi Group companies (domestic and overseas)

Benchmark year: Fiscal 1990 (or fiscal 2004) (Figures in [ ] in the table show non-consolidated targets or results for Shionogi.)

Evaluation (○ : achieved; △ : achievement rate of 80%-99%; × : achievement rate of less than 80%)

Fiscal 2008 Results	Evaluation	Fiscal 2009 Targets
<p><b>9% reduction</b> (to 7,283 tons) [23% reduction to 5,964 tons]</p> <ul style="list-style-type: none"> <li>Environmental efficiency raised and waste product volume reduced through partial change of waste product treatment methods (Kanegasaki Plant)</li> <li>Registration processes for the treatment of PCB waste products was completed earlier (Shionogi Research Laboratories, Aburahi Laboratories)</li> <li>Installed recycling facilities for the reuse of outdoor drainage water (Bushu Pharmaceuticals)</li> </ul>	×	<p><b>12% reduction</b> (to 7,109 tons) [24% reduction to 5,907 tons]</p> <ul style="list-style-type: none"> <li>Make efforts to offset natural increase in environmental impact accompanying the start of operations at new building (Settsu Plant)</li> <li>Reduce waste product volume 145 tons below the fiscal 2008 level despite an increase in production volume (Kanegasaki Plant)</li> </ul>
<p><b>Waste sent directly to landfills: 1.13 tons</b> [0.93 ton]</p> <ul style="list-style-type: none"> <li>0.2 ton of landfill waste was generated, including activated charcoal, ion-exchange membranes, etc. (Nichia Pharmaceutical Industries)</li> <li>Waste separation was thoroughly implemented, decreasing the volume of non-burnable waste (Nagoya branch office)</li> </ul>	×	<p><b>Waste sent directly to landfills: 0.79 ton</b> [0.79 ton]</p> <ul style="list-style-type: none"> <li>Promote appropriate treatment methods (Nichia Pharmaceutical Industries)</li> <li>Thoroughly implement waste separation and decreasing the volume of non-burnable waste (Nagoya branch office)</li> </ul>
<p><b>12.0% reduction</b> (to 33.816 million sheets) [15.8% reduction to 31.016 million sheets]</p> <ul style="list-style-type: none"> <li>Further progress was made toward paper-free operations based on the use of two-sided printing and compressed printing functions (Settsu Plant, Aburahi Laboratories)</li> </ul>	○	<p><b>8.6% reduction</b> (to 35.127 million sheets) [12.6% reduction to 32.177 million sheets]</p> <ul style="list-style-type: none"> <li>Employ diverse printing machine functions, information sharing, and other measures to sustain progress toward paper-free operations</li> </ul>
<p><b>8.8% increase</b> (to 111,574 tons-CO<sub>2</sub>) [3.2% increase to 94,692 tons-CO<sub>2</sub>]</p> <ul style="list-style-type: none"> <li>Operation of an accumulator facility was turned off and a refrigeration unit and compressor unit were renovated (Kuisse Site)</li> <li>Measures including those to replace steam distribution pipes and renovated air compressors supported a rise in environmental efficiency (Kanegasaki Plant)</li> </ul>	○	<p><b>Limit to 14.3% increase</b> (to 117,235 tons-CO<sub>2</sub>) [9.6% increase to 100,581 tons-CO<sub>2</sub>]</p> <ul style="list-style-type: none"> <li>Reduce to below the fiscal 2008 level (Kuisse Site)</li> <li>Further raise environmental efficiency targets (Kanegasaki Plant)</li> </ul>
<ul style="list-style-type: none"> <li>Measured hazardous chemical use, emission, and transfer volumes and undertook appropriate management</li> <li>Dichloromethane emissions into the atmosphere were reduced from the previous year's level, to 89.8 tons, but the reduction target was not attained (Kanegasaki Plant)</li> <li>Reduced waste solvents and catalysts through measures that include modification of water content measurement methods, analysis methods, and refining methods (Shionogi Research Laboratories)</li> </ul>	×	<ul style="list-style-type: none"> <li>Continue to monitor use, emissions, and transfer of hazardous chemicals and undertake appropriate management</li> <li>Respond to Osaka's chemical substance management system</li> <li>Increase capacity utilization rate of processes employing dichloromethane as a means of reducing emissions to below 95 tons (Kanegasaki Plant)</li> <li>Sustain use of environment-friendly experiment methods (Shionogi Research Laboratories)</li> </ul>
<ul style="list-style-type: none"> <li>Three freezer facilities were renovated according to plans (Kuisse Site)</li> </ul>	○	<ul style="list-style-type: none"> <li>Renovate two freezers (Kuisse Site)</li> <li>Renovate one freeze-drying equipment (Settsu Plant)</li> <li>Renovate one freezer (Kanegasaki Plant)</li> </ul>
<ul style="list-style-type: none"> <li>Carried out periodic measurement and evaluation of air, discharged water, and soil based on voluntary standards</li> </ul>	○	<ul style="list-style-type: none"> <li>Continue periodic measurement and evaluation of air, water, and soil</li> </ul>
<ul style="list-style-type: none"> <li>Chemical process safety evaluations were performed for all 39 processes related to new products under development (Kuisse Site)</li> </ul>	○	<ul style="list-style-type: none"> <li>Continue to manage chemical process safety evaluation system (Kuisse Site)</li> </ul>
<ul style="list-style-type: none"> <li>Began experiments in preparation for a shift to new packaging methods (SP packaging and bottle cap material modification) (Kuisse Site)</li> </ul>	○	<ul style="list-style-type: none"> <li>Continue considering selection of packaging materials, methods, etc., based on results of environmental impact surveys (Kuisse Site)</li> </ul>
<ul style="list-style-type: none"> <li>Collected data on Shionogi Group facilities in accordance with environmental accounting guidelines</li> </ul>	○	<ul style="list-style-type: none"> <li>Continue to collect data in accordance with environmental accounting guidelines</li> </ul>
<p><b>Green purchasing rate 76%</b> [74%]</p> <ul style="list-style-type: none"> <li>The response to the incidence of falsified claims of recycled paper content led to changes in sticker mark standards for environmental labels, causing a decline in the green purchasing rate.</li> </ul>	×	<p><b>Green purchasing rate 78%</b> [76%]</p> <ul style="list-style-type: none"> <li>Promote green purchasing</li> </ul>
<ul style="list-style-type: none"> <li>Undertook concerted cleanup campaigns near business facilities and for nearby main roads and participate in other environmental programs</li> <li>Co-sponsored "Iwate Prefecture's CO<sub>2</sub> Diet Point Promotion program" and the "Kanegasaki Greenery and Flower Bank" (Kanegasaki Plant)</li> <li>Lent out facility grounds and cooperated in work experience program for junior high school students (Aburahi Laboratories)</li> </ul>	○	<ul style="list-style-type: none"> <li>Promote communication with surrounding communities</li> </ul>
<ul style="list-style-type: none"> <li>Made the Annual Report available as a booklet and made it public on the Internet</li> </ul>	○	<ul style="list-style-type: none"> <li>Publish environmental information as part of the Annual Report</li> </ul>

## Results of Activities

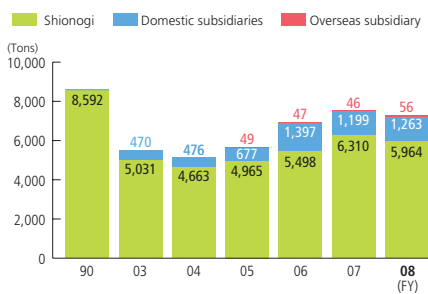
### Measures for Resource Conservation and Wastes

#### Amount of Waste Generated

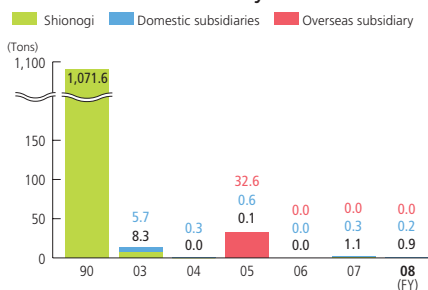
Principal waste products included waste oil generated from manufacturing processes, sludge generated from wastewater treatment processes, and plastics used in product containers. Despite growth in the scale of manufacturing and R&D operations, the volume of waste products was reduced owing to such measures as the partial modification of waste liquid processing methods. The Shionogi Group defines the goal of reducing the amount of waste products from its business sites that are directly disposed of in landfills to zero as "zero emissions," and, with this goal in mind, it is working to reduce the amount of waste products it directly disposes of in landfills.

In addition, to prevent illegal dumping of waste products, Shionogi carefully selects the companies to which it consigns waste processing and transport tasks, verifying their industrial permit acquisition situation as well as their treatment facilities, operational situation, document management situation, and other items listed on evaluation sheets to provide a basis for deliberations on whether or not to employ a particular company. After work is consigned, Shionogi appropriately manages the relevant contracts, permit certificates, and manifests, and undertakes an on-site check of the waste processing company one or more times each year.

#### Waste Products Generated



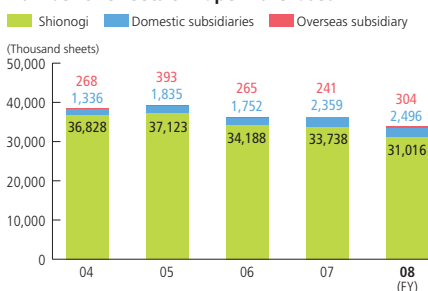
#### Waste Products Sent Directly to Landfills



### Copy Paper and Printing Paper

We are reducing the amount of copy paper and printing paper used by means of various initiatives, including those to print double-sided or multiple pages per sheet, shift to paperless faxing, increase LCD projector use by carrying personal computers to meetings, and promote the use of scanners and management of documents in electronic forms. In fiscal 2008, the amount of paper used was reduced.

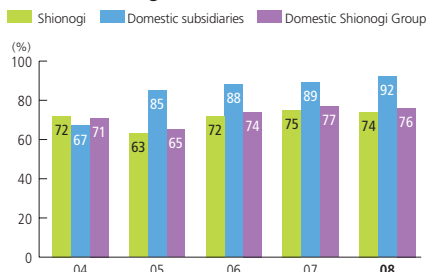
#### Number of Sheets of Paper Purchased



### Green Purchasing

Regarding office supplies, we make efforts to purchase environment-friendly products that meet the standards of the Eco Mark, Green Purchasing Network (GPN) Mark, or similar environmental labels. Shionogi has built an intranet-based purchasing system that facilitates green purchasing by displaying a green products mark that allows users to search for and recognize eco-friendly products when ordering. In fiscal 2008, the incidence of counterfeit recycled paper led to changes in sticker mark standards for environmental labels and Shionogi's green purchasing ratio declined as a result.

#### Green Purchasing Ratio



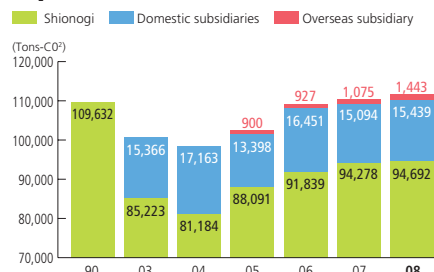
### Prevention of Global Warming

Shionogi has been aggressively working on energy conservation, with particular attention to manufacturing plant operations that use a particularly large amount of energy. In addition, Group companies are working to curb greenhouse gas emissions through means that include upgrading lighting equipment, air-

conditioning systems, and manufacturing equipment so that they use less energy and changing their operating methods.

In fiscal 2008, we continued to take systematic steps, including those to turn off steam system accumulators; renovate such equipment as freezers, compressors, and air conditioners; and install lights that automatically turn themselves off. However, an increase in the scale of manufacturing and R&D activities led to a rise in the volume of greenhouse gas emissions. Going forward, to curb output of greenhouse gases and improve our environmental efficiency, we will continue reconsidering the most-efficient facility usage methods and operating time periods as well as will take other measures, including those to upgrade such items as transformer substation equipment and air-conditioning equipment with high-energy-efficiency equipment.

### CO<sub>2</sub> and Other Greenhouse Gas Emissions



\* From fiscal 2005, figures for all greenhouse gas emissions are included on a Group-wide basis.

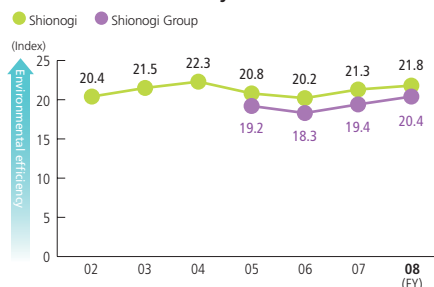
\* From fiscal 2006, the Tokyo Branch Office expanded the scope of its calculations.

### Environmental Efficiency

Environmental efficiency, which is based on greenhouse gas emissions and net sales, currently shows little change, but Shionogi will work to improve environmental efficiency through efficient business activities.

\* Environmental efficiency is calculated as net sales divided by the amount of greenhouse gas emissions. Therefore, higher numbers indicate more environment-friendly business activities.

#### Environmental Efficiency Index



\* For fiscal years prior to fiscal 2005, only figures for the CO<sub>2</sub> emissions of Shionogi & Co.'s sites are used.

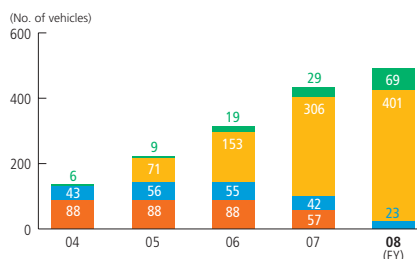
\* From fiscal 2005, figures for all greenhouse gases are included on a Group-wide basis.

## Low-Emission Vehicles

Shionogi is introducing low-emission vehicles for use by MRs. In fiscal 2008—following the introduction of 69 hybrid vehicles, low-emission vehicles, and other vehicles that meet specified fuel economy standards—all 493 of the Company's marketing-use cars were low-emission vehicles that have exhaust emissions 50% or more below the 2005 standard level. Going forward, plans call for introducing vehicles, mainly hybrid cars, that have low levels of exhaust gases and high levels of fuel economy and for promoting greater use of public transportation within Tokyo.

### Introduction of Low-Emission Vehicles (LEVs)

■ Hybrid ■ 75% exhaust reduction from 2005 standard levels  
■ 50% exhaust reduction from 2005 standard levels  
■ 25% exhaust reduction from 2005 standard levels



## Chemical Substance Management

Because many chemical substances have an impact on human health, ecosystems, and the global environment, the pharmaceutical industry is autonomously implementing such measures as those to survey the amount of chemical substances used and reduce atmospheric emissions. The Shionogi Group properly managed its emissions of chemical substances into the atmosphere and water and otherwise undertakes the appropriate management of harmful chemical substances. In addition, we have a reagent control system in place for appropriate inventory management regarding chemicals used in R&D as well as access controls concerning poisonous and/or hazardous chemicals.

### Environmental Emission Volume

Shionogi files reports based on the Pollutant Release and Transfer Register (PRTR) Law, which requires companies to measure, compile, and announce data on hazardous chemicals released into the environment. Going forward, we will continue to properly maintain a grasp of the amount of such chemicals we use, release, and transfer.

## Environmental Accounting

Shionogi has been conducting environmental accounting based on guidelines from Japan's Ministry of the Environment. The purpose of environmental accounting is to quantitatively manage environmental preservation activities by recognizing their cost and the effect they achieve.

Principal environmental investments in fiscal 2008 included such global environment protection expenditures as those for the renovation of lighting, air conditioning, and elevator-related equipment as well as such resource recycling expenditures as those for an outside drainage water system recycling facility at the plant of Bushu Pharmaceuticals. Principal expense items included maintenance and administration expenses associated with such facilities as those for the treatment of waste gas and wastewater as well as waste recycling and processing expenses. Real economic benefits included profit on the sale of waste liquids and metals from the Kanegasaki Plant and reduced expenses due to the shutdowns of accumulators at the Kuisse Site, the switch to a different kind of disinfectant-use ethanol at the Kanegasaki Plant, and the shutting off of lights at intermediate product storage facilities.

### Substances Reported under the PRTR Law

(kg, mg-TEQ for dioxins)

Site Name	Chemical Substance	Amount Used	Amount Released into Environment			Amount Transferred	
			Atmosphere	Natural waterways	Soil	Sewerage	Off-site
Kuisse Site	Acetonitrile	9,481	53	0	0	0	9,428
	Dichloromethane	3,285	82	0	0	0	3,203
	Toluene	4,839	25	0	0	0	4,814
Settsu Plant	Dichloromethane	1,624	1,371	0	0	0	254
Kanegasaki Plant	Acetonitrile	62,204	6,759	0	0	0	27,571
	Dichloromethane	258,324	89,821	8	0	0	105,822
	N,N-dimethylformamide	58,354	380	0	0	0	0
	Pyridine	18,013	1,509	0	0	0	10,267
	Benzene	1,566	0	0	0	0	0
Shionogi Research Laboratories	Acetonitrile	6,370	3	0	0	4	6,363
	Chloroform	8,007	21	0	0	0	7,986
	Dichloromethane	1,455	27	0	0	0	1,429
Developmental Research Laboratories	Acetonitrile	1,063	0	0	0	0	1,063
	Dioxins	0	0	0	0	0	0
Bushu Pharmaceuticals	Acetonitrile	1,579	0	0	0	0	1,579
	Dichloromethane	1,374	1,147	0	0	0	227
Nichia Pharmaceutical Industries	Acetonitrile	2,363	0	0	0	0	2,363
	Ethylene glycol	5,709	0	0	0	0	4,000
	Dichloromethane	55,250	2,543	0	0	0	52,707
	N,N-dimethylformamide	1,296	0	0	0	0	1,294
	Toluene	11,342	0	0	0	0	11,342

## Environmental Management Evaluation Report

Experts at the Institute for Environmental Management Accounting are providing Shionogi with their opinion regarding efforts to improve the reliability and transparency of disclosure of the Company's environmental activities and with advice on the Company's environment-friendliness and environmental management situation in the future.



Interview with Top Management



Environmental Management Evaluation Opinion Certificate

For more-detailed information on Shionogi's environmental activities and other activities, please visit our website at [URL: http://www.shionogi.co.jp/environment/eco/](http://www.shionogi.co.jp/environment/eco/)