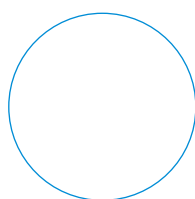




Sumitomo Heavy Industries Group
Environmental
Sustainability Report 2010



Environmental Sustainability Report



Holding fast to the “Sumitomo Business Spirit,” Sumitomo Heavy Industries Group is helping to build a sustainable society

A member of the Sumitomo Group, the Sumitomo Heavy Industries Group is carrying on the “Sumitomo Business Spirit” nurtured over more than 400 years. “Conformity of self-interest and altruism of public and private affairs” is a part of that spirit. It is the idea that to gain benefits for yourself, you must act in a way that is beneficial to other people and that you will benefit from devoting yourself to society.

Our Group’s action on environmental protection contributes to implementing the sustainable development of society and is consistent with the “Sumitomo Business Spirit.”

Above all, to contribute to the prevention of global warming, one of the most serious environmental problems, the Group is taking action to

- Reduce CO₂ emissions
- Reduce paper usage
- Promote green logistics (reduce CO₂ emissions associated with transportation)

For these activities, the Group has adopted initiatives that involve “participation by everyone” and a framework to “visualize” the activities. We are also devising way to improve a range of processes in order to further improve the efficiency of energy usage.

We find ourselves in a severe economic environment, but the Group will not allow the activities to prevent global warming to grow stagnant. Regardless of fluctuations in production volume, we will continue to reduce CO₂ emissions and promote activities to prevent global warming.

I believe that communication is the most important method of discovering precise solutions to achieve this goal.

I also head out to the Group’s manufacturing sites to see the factory floor for myself and to discuss environmental problems on site.

The Group is promoting activities to prevent global warming all over the world on the basis of the results we have had with activities to prevent global warming in Japan.

The Group also aims to be a corporation that contributes to environmental protection through its products and production activities. We strive for eco-friendly products (green products) that consume less energy, products that are smaller and lighter while providing world-class products and world-class services in a range of fields worldwide. On the manufacturing floor as well as in the office departments, we are devising improvements by reducing and eliminating harmful substances, minimizing waste, promoting recycling (zero emissions) and conserving energy.

The Group will continue to exist in harmony with local communities, to fulfill its social responsibility of environmental protection as a member of the community, and to contribute to the implementation of sustainable development in society.

We appreciate your opinions and advice, which will help us with our ongoing efforts.

President and CEO

Yoshinobu Nakamura



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Editorial Policy

The Sumitomo Heavy Industries Group issued its first Environmental Report in 2001. In 2005, we expanded the scope of the report to include social aspects and changed its name to Environmental Sustainability Report. Every year, we widen the scope of social contribution activities and environmental activities, which form the social responsibilities of the Group. In addition to promoting environmental management including activities to prevent global warming, the 2010 Report also introduces our engagement with biodiversity as a form of social contribution. We have also expanded the scope of data on the environmental burden overseas. To convey to a wide audience our engagement with environmental and social activities, we have sought to make the report accessible by using plain and concise language and by making frequent use of graphs, illustrations and photographs.

Further, when issuing this Report, we consulted the Environmental Reporting Guidelines (2007) and the Environmental Accounting Guidelines (2005) from the Ministry of the Environment.

Scope of the report

Sumitomo Heavy Industries, Ltd. and its group companies

Period covered by this report

April 1, 2009 – March 31, 2010

Previous issue: October 2009

Current issue: September 2010

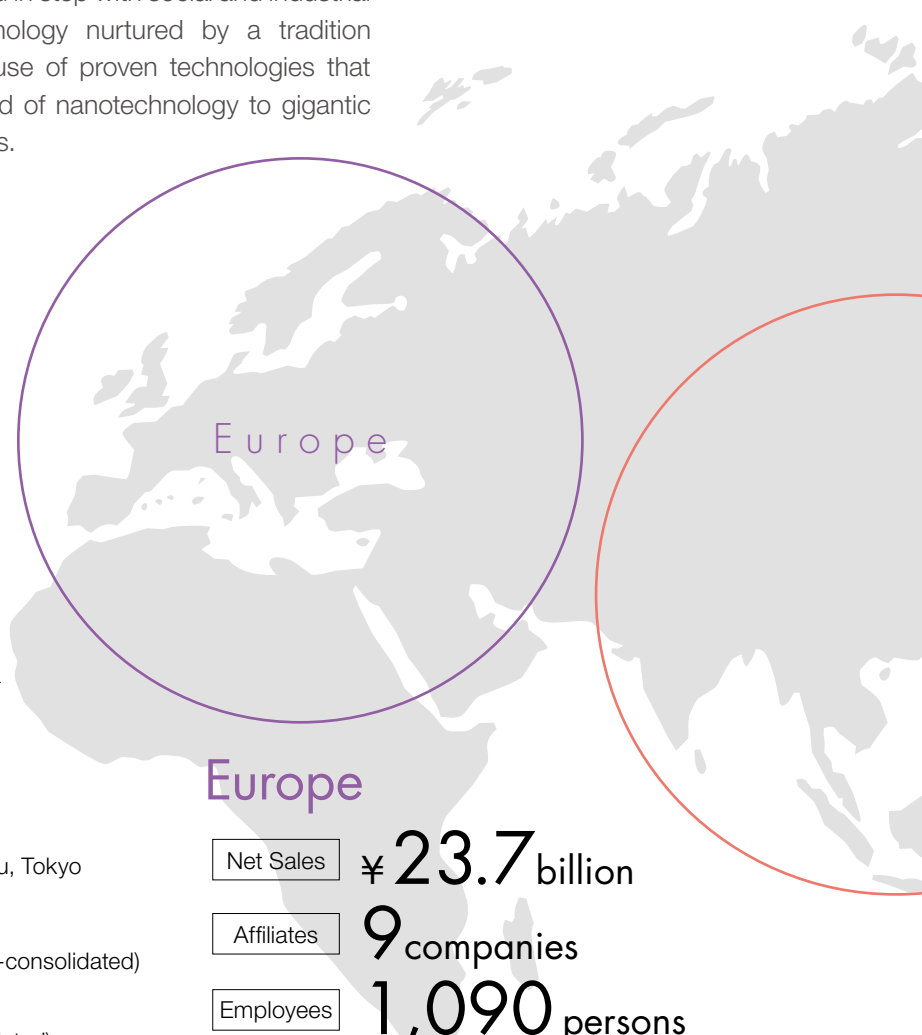
Next issue: August 2011

Disclaimer

This report contains not only facts relating to the past and present of Sumitomo Heavy Industries Group but also plans, forecasts, and projections based on management plans and management policy at the date of publication. These plans, forecasts and projections are assumptions and judgments based on available information at the time of writing, and results or matters pertaining to future business activities could differ materially from the descriptions due to changing conditions.

The Sumitomo Heavy Industries Group contributes to building an affluent society with “manufacturing” technology

Since its foundation as a repair shop for the Besshi Copper Mine in 1888, the Sumitomo Heavy Industries Group has moved in step with social and industrial development. With a manufacturing technology nurtured by a tradition spanning more than 100 years, we make use of proven technologies that “actuate and control” devices from the world of nanotechnology to gigantic structures to realize original ideas and dreams.



Company Profile (as of March 31, 2010)

Company Name:	Sumitomo Heavy Industries, Ltd.
Founded:	November 20, 1888
Incorporated:	November 1, 1934
Head Office:	1-1, Osaki 2-chome, Shinagawa-ku, Tokyo
Capital:	JPY 30,871,650,000
Employees:	15,463 (Consolidated), 2,748 (Non-consolidated)
Net Sales:	JPY 516,165 million (Consolidated) JPY 196,735 million (Non-consolidated)

Europe

Net Sales ¥23.7 billion

Affiliates 9 companies

Employees 1,090 persons

Business Outline

■ Mass-produced Machinery



Main Products

Power Transmission Equipment, Plastic Injection Molding Machines, Cyclotrons for Medical Use, Ion Accelerators, Plasma Coating Systems, Laser Processing Systems, Cryogenic Equipment, XY Stages, Transfer Molding Press Machines, Precision Forgings

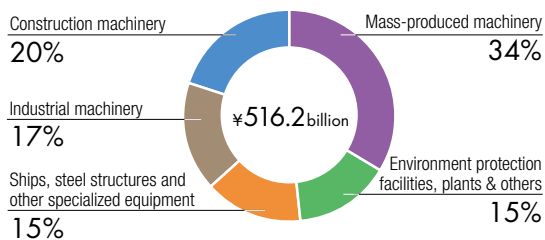
■ Environmental Protection Facilities, Plants & Others



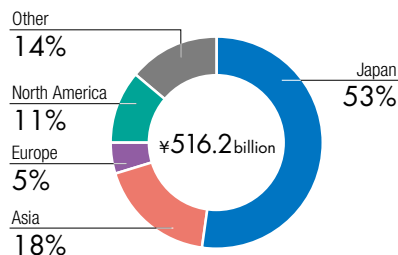
Main Products

Power Generation Systems, Industrial Wastewater Treatment Systems, Water and Sewage Treatment Systems, Landfill Leachate Treatment Systems, Air Pollution Control Plants, Chemical Process Equipment for Chemical Plants, Food Processing Machines, Software

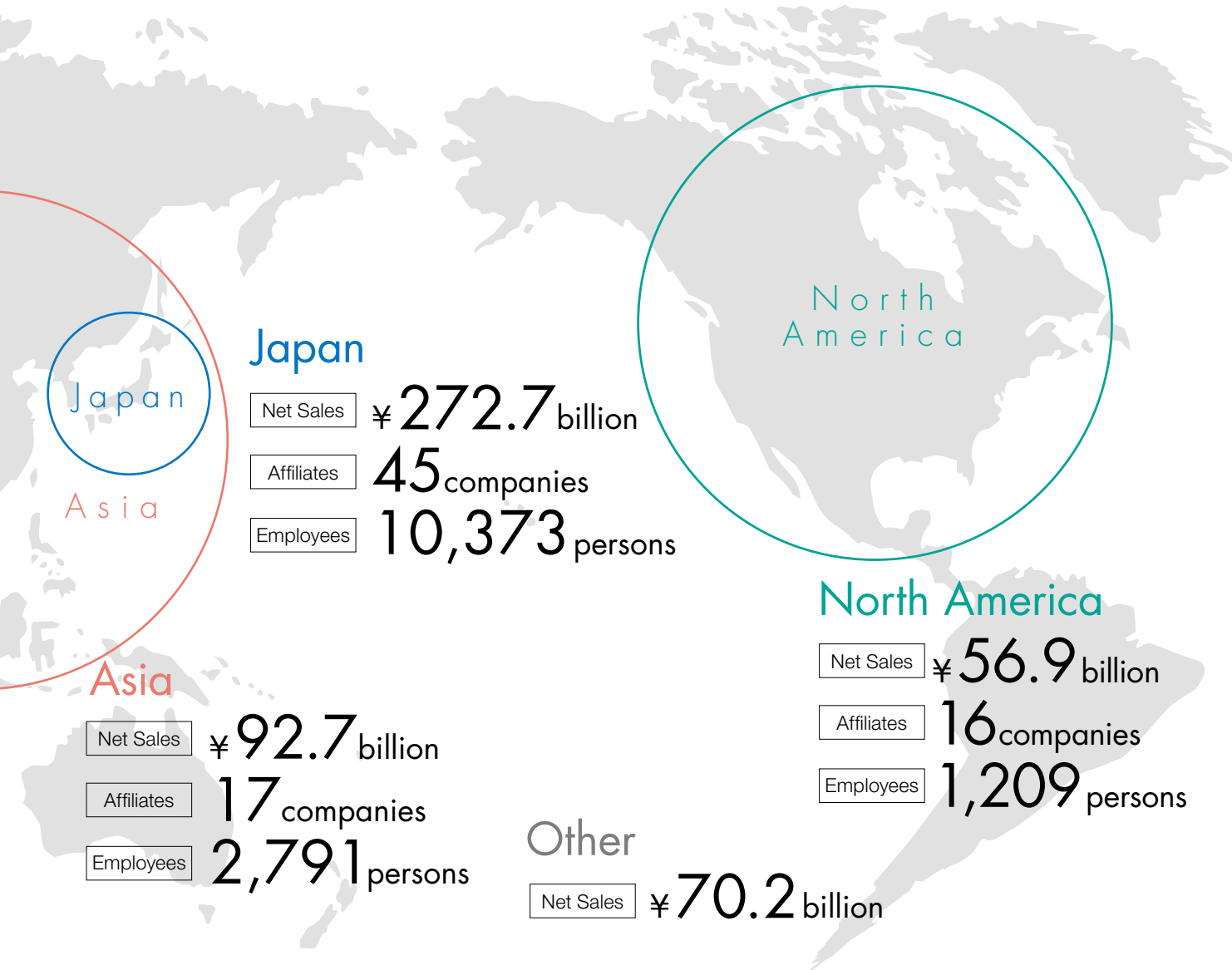
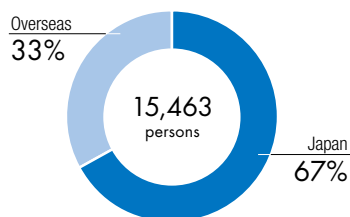
Net sales ratio by segment (FY2009)



Net sales ratio by region (FY2009)



Employee Ratio by Region (FY2009)



Ship, Steel Structure, and Other Specialized Equipment



Main Products
Steel Structures, Pressure Vessels, Mixing Reactors, Ships, Marine Structures, Marine Equipment, Coke Ovens Machines

Industrial Machinery



Main Products
Logistics & Handling Systems, Parking Systems, Forging Presses, Material Handling Systems, Turbines, Pumps

Construction Machinery



Main Products
Hydraulic Excavators, Mobile Cranes, Road Machinery

Relationship between Sumitomo Heavy Industries Group and Society

Oil refineries, shipbuilding yards, automobile factories, semiconductor industry and other industrial settings as well as the settings of daily life such as households, hospitals, elevators and escalators: the products of the Sumitomo Heavy Industries Group are involved with all these areas. Here, we use numbers to demonstrate the special features of our products.

14 At Automobile Factories

0 wobbling at inversion.

Supports accuracy of robot movements.

Precision speed reducers



1 Sewage Treatment Plants

Reduces air content by **approx. 30%**

compared to average diffusion plates



Diffusion equipment

2 In Harbors

Improves fuel consumption by

60%

Recipient of the Chairman's Award for Excellence in Energy-Saving Machines (FY2008)



Hybrid crane

3 At Power Generating Facilities

Facilitates combustion with

100%

biomass fuel



Biomass boiler

Supplied to **approx. 80 countries worldwide** to deliver electric power



Steam turbine

Removes SOx, NOx and other harmful emissions with

0 water volume

Dry-type desulfurization-denitrification system



4 At Sea

Transports

100,000 tons of oil



Oil tanker

15 At Oil Refineries

Withstands temperatures of

500

to extract light oil from heavy oil



Coke drums



5 At Shipbuilding Yards

Suspends the heaviest load in the world at **1,200 tons.**

Contributes to improved efficiency on site.



Large crane

6 At Semiconductor Factories

Compatible with

65nm

ultrafine LSI. Implants ion in wafers.



Ion implantation system

Largest in the world at
16,000 tons.

Forges engine parts.

Forging press



13 At Underground Parking Lots

Capacity of

170 vehicles per unit.

Efficient use
of space.

Mechanical
parking garage

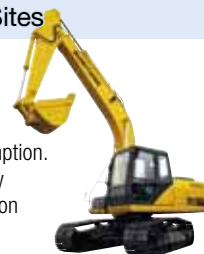


12 At Construction Sites

20%

improvement in fuel consumption.
First construction machinery
receiving Energy Conservation
Grand Prize (FY2007).

Hydraulic excavator



11 For Televisions and PCs

Positioning accuracy of

1 μ m

for manufacturing of
glass substrates

Semiconductor and
liquid production equipment

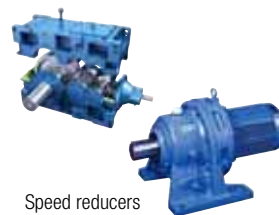


10 Elevators and Escalators

The compact
design trims the
weight by

30%.

Speed reducers



9 At Hospitals

Discovers cancers of

**less than
1** cm

in the early stages

Cyclotron for PET



The core of MRI equipment,
cooling to the ultralow temperature of

-269

Cryocooler for MRI systems



8 At the Warehouse

We have an abundant lineup from

0.9 to 48
tons.

Forklift



Streamlines tasks with completely automated
management of

190,000
packing
cases

Automated warehouse system



Controls temperatures within

± 1

at low running cost

Air conditioning equipment



7 For Mobile Phones, DVDs and CDs

Molds concavities and convexities reliably even at

0.1 μ m

Plastic injection molding machine



Highlighting FY2009 Activities

Initiatives by Sumitomo Heavy Industries Group

CO₂ emissions reduced by 29% compared to FY2004

In FY2009, as part of our activities to contribute to the prevention of global warming, we curtailed CO₂ emissions by 37% over FY1990 and by 29% over the FY2004 benchmark year for the Group.



▶ P15



Reduced CO₂ emissions (basic units) for logistics by 11% over FY2006

We are committed to efficient transportation and a modal shift. Focused on long-distance cargo transportation, we are actively switching from truck transportation to transport by rail and sea with reduced CO₂ emissions.

▶ P16

12% reduction in waste volume over FY2007 Recycling rate of 99.1%

We took steps to reduce metal scraps by streamlining production activities, eliminating waste and improving yields, reducing waste volumes by 12% over the Group's benchmark year of FY2007. We also promoted thorough separation of waste to achieve a recycling rate of 99.1%, exceeding the target of 98%.

▶ P17



Activities to prevent global warming

Activities to reduce waste

As part of its corporate mission, the Sumitomo Heavy Industries Group contributes to protecting the environment and reducing the burden on the environment through product development and production activities. We also continue to contribute to the creation of a sustainable society. In FY2009, each facility communicated actively with the local community while voluntarily taking part in initiatives to stop global warming and protect the environment.



Activities to protect air quality

Recipient of the Director's Prize, Environmental Management Bureau, Ministry of Environment

The activities to protect air quality at the Yokosuka Works were recognized with the Director's Prize by the Environmental Management Bureau, Ministry of Environment.

▶ P10



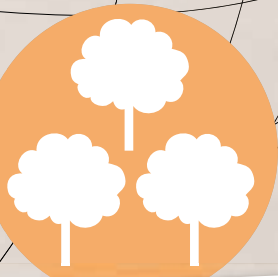
Activities to conserve energy



Awarded the Director's Prize, METI Chugoku

As Excellence in Energy Management Plant for FY 2009, the Okayama Works were awarded the Director's Prize by the Chugoku Bureau of Economy, Trade and Industry, METI.

▶ P16



Biodiversity initiatives

Biodiversity Initiatives

At the Tanashi Works, 30% of the 43,000 m² site is forest. Named the "Forest of Inspiration," part of the forest has been open to the public since 1995. The Group is actively engaged in planting and growing trees in the area.

▶ P27



Contributing to Highly Effective and Stable Biomass Power Generation

— Steam Turbines for Biomass —

Today when initiatives to take action to prevent global warming are regarded as essential, there is increasing interest in eco-friendly power generation. Since biomass power generation is capable of drastically reducing the use of oil, coal and other fossil fuels by using bagasse (dry residue after extracting juice from sugar cane) or woodchips for fuel, it is clean power generation that contributes to reducing CO₂ emissions with the aim of preventing global warming.

Biomass power generation making use of bagasse has long been introduced at sugar factories in Asia and Central-South America. In recent years, the power generation facilities have grown in size with sugar factories entering the business of selling power due to the liberalization of the electric power market in many countries.

Shin Nippon Machinery started to focus on biomass

power generation at an early stage, delivering the first machinery to a sugar factory in Thailand in 1970. Since then, the company has supplied 385 units and holds an impressive share of the world market.

The total power output of the biomass generators supplied so far is 3,840 megawatts, which in numerical value corresponds to providing power to approximately 8 million standard Japanese households.

3,840 megawatt

Total power output
from biomass power
generators supplied
in the past

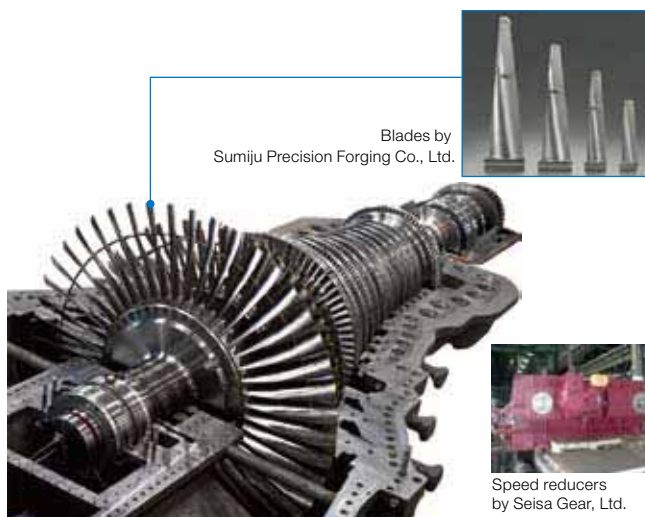


Equivalent to **approx. 8 million**
standard Japanese households



Product Features

- The typical system used in the turbines for sugar factories is called the extraction pressure method. Steam is extracted from the turbine itself as a source of heat for the sugar-making process and to dry the bagasse fuel. Since the so-called internal extraction pressure method, in particular, is capable of regulating the amount of steam extracted from the interior of the turbine to suit all types of control, it is possible to reduce power generation loss and to have a stable supply of a source of heat throughout the year.
- The power generators make effective use of the technological synergy of the Group with blades from Sumiju Precision Forging and speed reducers from Seisa Gear.



Blades by
Sumiju Precision Forging Co., Ltd.

Speed reducers
by Seisa Gear, Ltd.

TOPICS

Supplying India with the world's largest steam turbines for biomass

In 2009, Shin Nippon Machinery delivered the world's largest steam turbine for biomass to India. The facility generates 44 megawatts of power, the diameter of the turbine rotor axis is approximately 2m with a length of 5.6m, and it weighs 8.3 tons. Even so, axis vibration values during operation are kept below 10 microns. The technology is the product of a system of integrated quality control from the parts manufacturing to assembly.

Recipient of the Director's Prize, Environmental Management Bureau, Ministry of Environment

— Yokosuka Works —

In December 2009, the activities to protect air quality at the Yokosuka Works were recognized with the Director's Prize, Environmental Management Bureau, Ministry of Environment. The Works also received a Special Meritorious Award for Countering Volatile Organic Compounds (VOC).

Expanding the Painting Facility

At the shipbuilding yards 100% of on-shore painting has been transferred to an indoor facility. The ratio of indoor painting at the yards has risen from 50% to 71%. As a result, it is now easier to control the VOC contained in the volatile ingredients in paint.



Exterior view of the painting facility

Installation of VOC Removal Equipment and Paint Collecting Equipment

In step with the development of indoor painting, we have installed VOC removal equipment (95% removal rate) and paint collection equipment at the paint factory. Balancing the series of investment costs against the benefit of the process no longer being controlled by the weather, there is generally hesitation when judging the effectiveness of the investment, but our initiative is a forerunner for the industry and recognized as a valuable model for the future.



Exterior view of the VOC removal facility

Expanding Use of Low or Solventless Paint

In the past, the yards have used paints with low solvent content wherever possible, but with the understanding of our customers, we have expanded the range of use to account for approximately 65% of total volume. The use of solventless paint is still limited, but we are continuing to find solutions to the technical problems and to study the expansion of its application.

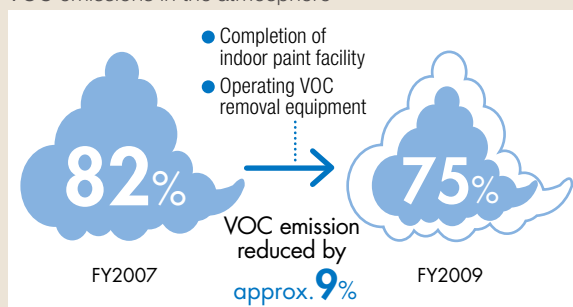
Training to Improve Painting Techniques

We have been reducing the volume of paint by designing skills training for workers and improving the processes.

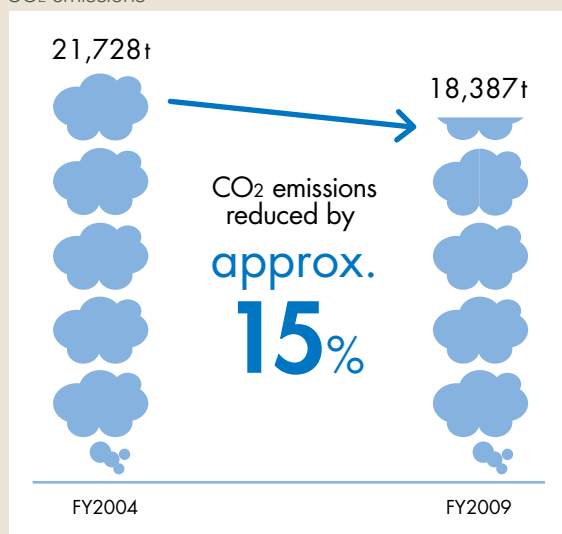
As a result of these initiatives –

We have reduced atmospheric emissions of VOC contained in paint from 82% to 75%. Despite an increase in paint volume due to a growing production volume at the shipyards, we have reduced CO₂ emissions by approximately 15%.

VOC emissions in the atmosphere



CO₂ emissions



Environmental Management System

At Sumitomo Heavy Industries Group, we have been promoting environmental management with awareness that business corporations have social responsibilities for protecting the global environment, for preserving the local environment, and for engaging in economic activities that are oriented toward recycling.

Sumitomo Heavy Industries Group Environmental Philosophy

The Sumitomo Heavy Industries Group contributes to implementing sustainable development of society by holding fast to the “Sumitomo Business Spirit.”

The Sumitomo Heavy Industries Group is taking action across the Group to protect the global environment.

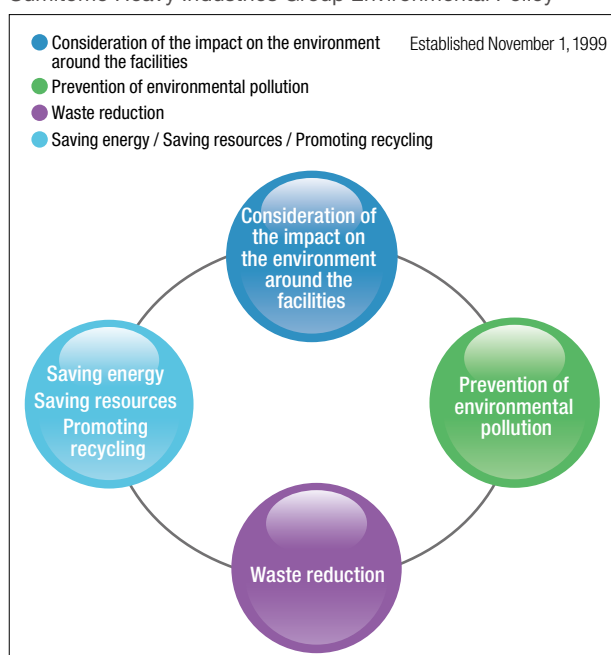
Environmental Policy

In order to implement the sustainable development of society, we must respond to global environment issues and reduce the burden on the environment posed by various aspects of corporate activity. To do so, the Group is promoting autonomous and proactive initiatives to protect the environment.

In 1992, we established the Environmental Committee to promote environmental protection and compliance in local communities. In September 1997, we established the Sumitomo Heavy Industries Environmental Policy in order to drive home the message of environmental management.

In addition, in order to clarify the basic policy of activities across the Group, we established the Sumitomo Heavy Industries Group Environmental Policy in November 1999, expanding environmental management across the Group as a whole including overseas facilities.

Sumitomo Heavy Industries Group Environmental Policy



Environmental Management

We have established an Environmental Management Division in the General Affairs Group, which draws up the medium-term environmental plan (the current second medium-term environmental plan runs from FY2008 to FY2010), environmental goals on an annual basis, and develops environmental management across the Group including personnel training.

The medium-term environmental plan and the annual environmental goals are rolled out across the Group after approval by the President and CEO.

Environmental Management Audit

| Japan |

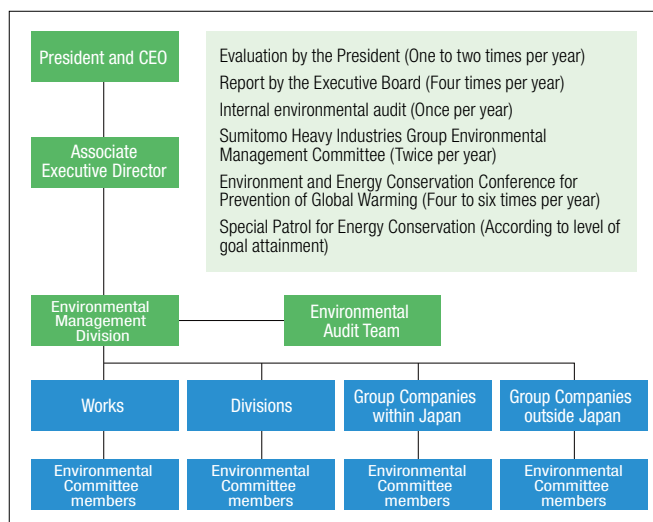
Once a year, the Environmental Management Division conducts an audit of each works and Group company. The audit covers environmental management as a whole and its principal emphasis is on activities to prevent global warming. In order to improve performance and to implement continued improvements, the emphasis is placed on validating and verifying the systems. We also undertake extraordinary audits as the need arises.

In the audits, we stress discussion and mutual awareness-raising.

| Overseas |

The Environmental Management Division undertakes documentation checks and on-site internal audits of each overseas corporation with the principal objective being activities to prevent global warming and environmental risk reduction.

In FY2009, we audited three factories in China and two factories in Vietnam.



ISO14001 Certification

Japan

Twenty-one of the main manufacturing works and plants have acquired ISO14001. In this fiscal year, two companies acquired the certification: Seisa Gear, Ltd. and Sumitomo Heavy Industries Modern, Ltd. As a result, all principal manufacturing divisions in Japan now have the certification.

Overseas

At present four companies have received the certification. Sumitomo (SHI) Cyclo Drive China Ltd., which manufactures speed reducers in China, and Link-Belt Construction Equipment Company, which manufactures construction equipment in the United States, are planning to acquire the certification in FY2010.

Works and divisions that have received ISO14001 certification and group companies within the scope of certification

Works / Divisions	Group Companies within the Scope of Certification	Date of Certification
Tanashi Works	<ul style="list-style-type: none"> Sumiju Plant Engineering Co., Ltd. Sumiju Business, Ltd. Sumiju Tokki Service Co., Ltd. 	August 1998
Chiba Works	<ul style="list-style-type: none"> Sumitomo (S.H.I.) Construction Machinery Co., Ltd. Kenki Engineering Chiba Co., Ltd. Hitachi Sumitomo Heavy Industries Construction Crane Co., Ltd. Sumitomo (S.H.I.) Construction Machinery Sales Co., Ltd. 	April 1999
Yokosuka Works	<ul style="list-style-type: none"> Sumitomo Heavy Industries Marine & Engineering Co., Ltd. Sumiju Precision Forging Co., Ltd. Sumiju Yokosuka Kogyo Co., Ltd. Environmental Engineering Center of Sumitomo Heavy Industries Environment Co., Ltd. 	February 1999
Nagoya Works	<ul style="list-style-type: none"> Hitachi Sumitomo Heavy Industries Construction Crane Co., Ltd. Sumiju Tomida Machinery Co., Ltd. Sumiju Technos Co., Ltd. 	January 1999
Okayama Works	<ul style="list-style-type: none"> Sumitomo Heavy Industries Finetech, Ltd. 	March 2000
Ehime Works (Niigata Factory)	<ul style="list-style-type: none"> Sumitomo Heavy Industries Techno-Fort Co., Ltd. Sumitomo Heavy Industries Engineering & Services Co., Ltd. Sumitomo Heavy Industries Himatex Co., Ltd. Sumiju Plant Engineering Co., Ltd. Sumiju Techno Craft Co., Ltd. 	November 1999
Ehime Works (Saijo Factory)	<ul style="list-style-type: none"> Sumitomo Heavy Industries Process Equipment Co., Ltd. SHI Examination & Inspection, Ltd. 	February 1999
Energy & Environment Group	<ul style="list-style-type: none"> Sumiju Environmental Technology Co., Ltd. 	October 2002

Group companies in Japan that have independently received the ISO14001 certification

Group Company	Date of Certification
Sumitomo NACCO Materials Handling Co., Ltd.	March 2000
Shin Nippon Machinery Co., Ltd.	February 2002
Izumi Food Machinery Co., Ltd.	June 2002
SEN Corporation	October 2002
Sumiju Environmental Engineering Inc.	October 2002
Sumitomo Heavy Industries Environment Co., Ltd.	November 2002
Lightwell Co., Ltd.	February 2005
Nihon Spindle Mfg. Co., Ltd.	March 2006
Japan Electron Beam Irradiation Service Co., Ltd.	January 2007
Sumitomo Heavy Industries PTC Sales Company	September 2007
SFK Co., Ltd.	August 2008
Seisa Gear, Ltd.	August 2009
Sumitomo Heavy Industries Modern, Ltd.	December 2009

Group companies outside Japan that have independently received the ISO14001 certification

Overseas Group Company	Date of Certification
Sumitomo (SHI) Demag Plastics Machinery GmbH	April 1998
Sumitomo (SHI) Cyclo Drive Germany GmbH	March 2006
Sumitomo (SHI) Cryogenics of Europe, Ltd.	June 2008
Ningbo Sumiju Machinery, Ltd.	September 2008

Environmental Objectives (Medium-Term Plan) and Results

The Sumitomo Heavy Industries Group has drafted the second medium-term plan that specifies the targets to be achieved by the end of FY2010 and has been continuing with its efforts to reduce the burden on the environment.

Entire View of the Burden on the Environment (Sumitomo Heavy Industries Group)

INPUT

Energy	
Crude oil equivalent	43,357 _k
Water Resource	1,439,000 _{m³}
Paper	48,610,000 _{sheets} (A4 paper equivalent)

Sumitomo Heavy Industries Group

OUTPUT

CO ₂ Emissions	66,900 _t
Amount of Chemical Substances PRTR ^{*1} Substances	993 _t
Emission of Air Pollutants Waste VOC ^{*2}	767 _t
Waste	
Total Amount	29,761 _t
Recycling Rate	99.1%

*1 PRTR: Pollutant Release and Transfer Register
*2 VOC: Volatile Organic Compounds

Environmental Accounting for FY2009

As a yardstick for measuring the investment, expenditure and effect of environmental protection, we have conducted environmental accounting in accordance with the Environmental Accounting Guidelines, 2005, issued by the Ministry of the Environment.

Cost of Environmental Protection (Accounting Base: Sumitomo Heavy Industries Group)

Unit: million yen

Category	Details of the main activities and the effects	Investment amount	Costs	Economic effect	Main content
1. Costs within Business Areas (Sites)	Handling or processing water, air, noise, vibration, chemical substances, and waste materials; reducing energy and resource consumption; and recycling materials	401	353	331	
Breakdown	(1) Costs for Preventing Pollution	208	163	85	Reducing cost of wastewater treatment
	(2) Costs for Global Environment Protection	182	44	235	Cost reduction with introduction of energy conservation, natural energy
	(3) Resource Recycling Costs	11	146	11	Reducing landfill by separating rubbish, cost reduction by cutting back on waste
2. Upstream and Downstream Costs	Cost of cutting A4 paper use by using reverse side	0	0.4		
3. Management Activity Costs	Administering and maintaining ISO14001 standards; providing training (general, specialized, screening panel, for internal auditing); monitoring the implementation of action plans; receiving regular screening; expansion and maintenance of green areas; confirmation of PRTR; and measurement of VOC	6	19		
4. Research and Development Costs	Verification testing of compact CFB boiler; commercial development of pretreatment facility for tropical biomass boiler; development of high-performance, low-cost, energy-saving water treatment unit; high-efficiency cyclo-reducers; developing other environmental responses and energy-saving products	49	517		
Total		456	889	331	

Unit: million yen

Item	Description	Amount
Total amount of investment made in the period	Renovations of wastewater treatment facilities; Maintaining sewage systems; Installing oil-water separating tank; Cycling heat-processing coolant; Improving exhaust heat for gear grinding rooms; Upgrading transformers (high-performance); Lighting INV and scaling back on lighting Investing in energy conservation measures; Upgrading lighting; Introducing IH kitchen equipment; Upgrading compressors	456
Total cost assumed in the period	Recycling, collecting, transporting, processing and disposing of waste; Inspections to detect extremely small amounts of PCBs; Operational control of waste water treatment facilities; Measuring water quality, exhaust gas, noise and vibration; Administering and maintaining ISO14001; Providing training; Monitoring implementation of action plans; Receiving regular screening	889
Total inclusive cost of research and development in the period	Developing technologies to improve durability of CFB boiler; Verification testing of compact CFB boiler; Developing energy-saving ships; Developing high-efficiency, energy-saving motors; Downsizing and commercial development of wastewater treatment equipment; Developing next-generation electric forklifts; Developing other environmental responses and energy-saving products	517
Total cost of environmental protection activities during the period		1,345

Activities in FY2009 – General Overview

We have established the second medium-term plan, which runs from FY2008 and sets the targets to be achieved by FY2010, to facilitate our activities to reduce our environmental footprint. In particular, to contribute to the prevention of global warming, we have set a policy of reducing total CO₂ emissions by 16% from FY2004 levels.

In FY2009, however, we achieved a reduction of 29% against a target of a 13%. The table below outlines our achievement.

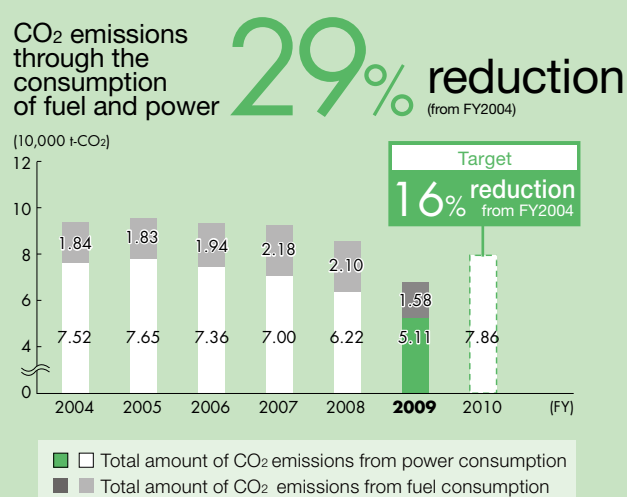
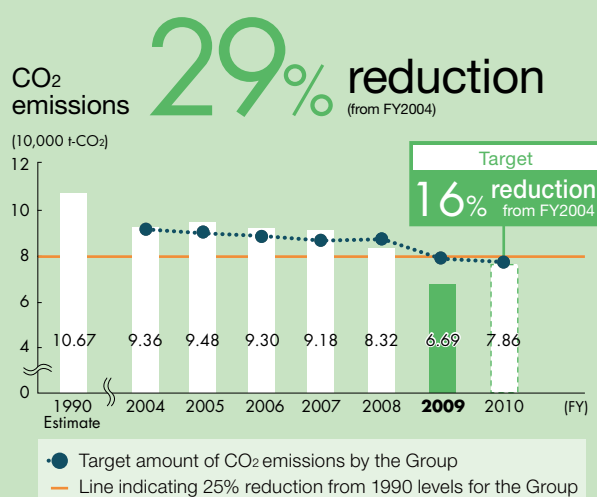
This fiscal year is the final year of the medium-term plan and to achieve the targets, we are revitalizing the initiatives based on the PDCA cycle.

Index	Item	Second Medium-Term Plan	Plans for FY2009	Achievements in FY2009	Evaluation	Plans for FY2010
Prevention of Global Warming	(1) Reduction in CO ₂ emissions at works and offices	Reduction by 16% from the FY2004 level by FY2010 (23% reduction over FY1990 levels)	Reduction by 13% from the FY2004 level	Reduction by 29% from the FY2004 level	◎	Reduce CO ₂ emissions by 16% from FY2004 level (25% reduction over FY1990 levels) * Target exceeds medium-term plan
	(2) Reduction in paper usage	Reduction by 40% from FY2005 level by 2010	Reduction by 35% from the FY2005 level	Reduction by 52% from the FY2005 level	◎	Reduction by 40% or more from the FY2005 level as the benchmark
	(3) Promotion of green logistics Reduction in CO ₂ emissions in transportation	Target for FY2010: Reduction by 11% per basic unit of transportation compared with the figure for FY2006 as the benchmark.	Reduction by 10% from the FY2006 level	Reduction by 11% from the FY2006 level	◎	11% reduction per basic unit of transportation against FY2006 benchmark * Target exceeds 1% reduction specified in the Amended Energy Conservation Law
Promotion of Resource Conservation and Recycling	(1) Reduction in volume of waste generated and disposed of	<ul style="list-style-type: none"> Amount generated in FY2010: less than 30,420 tons (Down 10% from FY2007 level) Amount of disposal: less than 300 tons (below 1% of target value for volume generated) 	<ul style="list-style-type: none"> Amount generated: 32,110 tons (Down by 7% from FY2007 levels) Amount of disposal: 1,600 tons (below 5% of target value for volume generated) 	<ul style="list-style-type: none"> Amount generated: 29,761 tons (Down by 12% from FY2007 levels) Amount of disposal: 271 tons (0.9% of volume generated) 	<ul style="list-style-type: none"> Amount generated in FY2010: less than 30,420 tons (Down 10% from FY2007 level) Amount of disposal: less than 300 tons (below 1% of target value for volume generated) 	<ul style="list-style-type: none"> Amount generated in FY2010: less than 30,420 tons (Down 10% from FY2007 level) Amount of disposal: less than 300 tons (below 1% of target value for volume generated)
	(2) Achievement of zero emissions	Attain recycling rate of 95% or more for all divisions by FY2010. Then, aim for zero emissions	Recycling rate of 98% or more (SHI Group average)	Recycling rate of 99.1%. 98% or more at 8 bases (95% or more at 9 bases in previous FY)	◎	Group average recycling rate of 99% or more (target exceeds medium-term plan)
	(3) Reduction in water usage	Reduction by 20% from FY2005 level by 2010	Reduction by 17% from the FY2005 level	Reduction by 25% from the FY2005 level	◎	<ul style="list-style-type: none"> Reduction by 20% or more from FY2005 level Toward non-attainment in zero divisions
Promotion of Prevention of Environmental Pollution	(1) Emission control of organochlorine chemicals (Soil Contamination Countermeasures Law, Montreal Protocol)	<ul style="list-style-type: none"> Complete abolition of the harmful chemical substances dichloromethane, tetrachloroethylene and trichloroethylene under the Soil Contamination Countermeasures Law by FY2010 Reduction in ozone depleting substances HCFC-141b, HCFC-225 by 50% or more from the FY2006 level by FY2010 	<ul style="list-style-type: none"> Dichloromethane, trichloroethylene down by 75% or more over FY2005 levels, complete abolition of tetrachloroethylene Reduction in ozone depleting substance HCFC-141b by 50% or more, complete abolition of HCFC-225 continues 	<ul style="list-style-type: none"> Compared with FY2005 Dichloromethane reduced by 66%, tetrachloroethylene completely abolished, trichloroethylene reduced by 8.5% HCFC-141b reduced by 44.5%, HCFC-225 completely abolished 	<ul style="list-style-type: none"> Complete abolition of dichloromethane, trichloroethylene, complete abolition of tetrachloroethylene continues Reduction in ozone depleting substance HCFC-141b by 50% or more, complete abolition of HCFC-225 continues 	<ul style="list-style-type: none"> Complete abolition of dichloromethane, trichloroethylene, complete abolition of tetrachloroethylene continues Reduction in ozone depleting substance HCFC-141b by 50% or more, complete abolition of HCFC-225 continues
	(2) Emission control of substances designated as VOC (Air Pollution Control Law)	Controlled emission of painting solvents, mainly toluene, xylene, and ethylbenzen. Reduction by at least 30% from the FY2006 level to be achieved by FY2010	Reduction in emissions of 3 substances by 15% from the FY2006 level	Reduced by 22% from the FY2006 level	◎	Reduction in emissions of 3 substances by 15% or more from the FY2006 level
	(3) Total abolition of equipment that uses PCB (Law Concerning Special Measures Against PCB Waste)	Total prohibition of use	<ul style="list-style-type: none"> Complete early registration of equipment with high concentration of PCB Investigation continuing for equipment with a low concentration of PCBs 	<ul style="list-style-type: none"> Complete early registration of equipment with high concentration of PCB Investigation continuing for equipment with a low concentration of PCBs 	<ul style="list-style-type: none"> Complete early registration with the Japan Environmental Safety Corporation of equipment with high concentration of PCB. Dispose of appropriately after receipt of disposal notice For equipment that has a low concentration of PCBs, investigation will continue in accordance with the plan. 	<ul style="list-style-type: none"> Complete early registration with the Japan Environmental Safety Corporation of equipment with high concentration of PCB. Dispose of appropriately after receipt of disposal notice For equipment that has a low concentration of PCBs, investigation will continue in accordance with the plan.
Expansion of Line-up of Environmentally Friendly Products	Promotion of measures for green procurement (purchase of raw materials and components)	Respond to customers' requests by guaranteeing that shipped products do not contain prohibited substances. Have the suppliers guarantee that the products they deliver do not contain prohibited substances.	Continue in accordance with the Green Procurement Guidelines	Continue in accordance with the Green Procurement Guidelines	◎	Review Green Procurement Guidelines
Environmental Management	(1) Zero environmental accidents (legal violations)	Zero environmental accidents (legal violations)	Zero environmental accidents (legal violations)	Two environmental accidents (legal violations)	△	Zero environmental accidents (legal violations)
	(2) Increase in the number of ISO14001 certifications	Plan and push for attainment by Group companies including overseas	Plan and promote certification for two affiliates in Japan	Two companies in Japan obtained certification	◎	Expand certification at overseas Group companies
	(3) Expansion of the scope of the Consolidated Environmental Management	Conduct audits and research into the risk associated with the principal overseas manufacturing bases to avoid risks and to promote measures for environmental activities.	Audits at 6 principal overseas manufacturing bases (including China)	Audits at 6 principal overseas manufacturing bases (including China)	◎	Conduct audits at key overseas locations including China, avoid risk by conducting risk assessments, promote environmental initiatives
	(4) Contribute to biodiversity	Expand tree-planting and growing programs at factory premises	Produce biodiversity guidelines	Produce biodiversity guidelines	◎	Expand tree-planting and growing programs at factory premises

Evaluation: ◎ Achieved ○ Achieved by 70% or more △ Achieved by less than 70%

Global Warming Prevention Activities

In its business activities, including procurement, manufacturing and logistics, Sumitomo Heavy Industries Group has been taking measures to reduce CO₂ emissions by positioning it as the most important issue.



Promoting Environmental Management

In the Sumitomo Heavy Industries Group, activities to prevent global warming are positioned as a part of environmental management with discussions conducted at evaluations by the President on visits to the manufacturing floor. The results from each business division are fed back for monthly processing at the Environmental Management Division. The results are also announced at the quarterly meetings of the Executive Board.

Each division in the Group promotes activities to prevent global warming and is engaged in activities to improve a range of processes in order to further enhance the efficient use of energy and to “visualize” activities and initiatives through “the participation of all employees.”

Reducing CO₂ Emissions

The Sumitomo Heavy Industries Group started to take action in FY2005 with the “Sumitomo Heavy Industries Group 1st Global Warming Prevention Activities” to reduce CO₂ emissions by 10% from FY2004 levels by FY2007. As of FY2008, we launched the “Sumitomo Heavy Industries Group 2nd Global Warming Prevention Activities” aiming to further reduce CO₂ emissions by 16% from the FY2004 level by FY2010. Compared to the benchmark year of FY1990 for the Kyoto Protocol, the target is to achieve a 25% reduction.

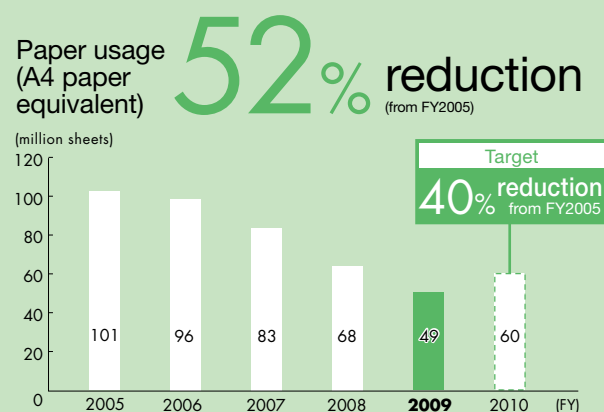
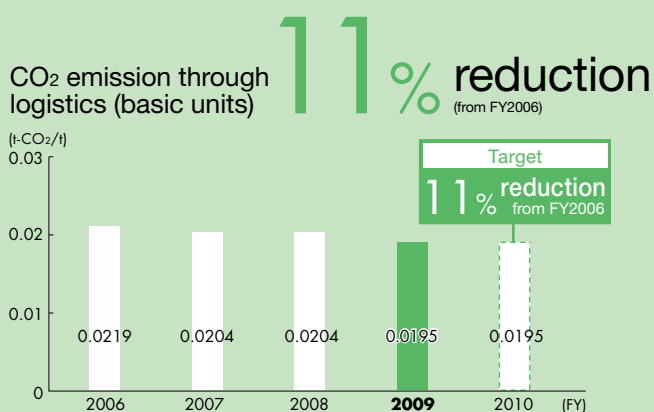
In FY2009 we were able to control emissions to far exceed the target with a 29% reduction over FY2004 levels and a 37% reduction over FY1990 levels.

Fuel and Power

At the time of launching the “Sumitomo Heavy Industries Group 1st Global Warming Prevention Activities” in FY2005, we first focused on reducing power consumption, which accounted for approximately 80% of energy consumption. In the “Sumitomo Heavy Industries Group 2nd Global Warming Prevention Activities” starting in FY2008, we added activities to reduce CO₂ emissions by curtailing the amount of fuel used.

In FY2009 we reduced CO₂ emissions from fuel by 14% compared to the benchmark year of FY2004. However, when compared to the 22% reduction in CO₂ emissions from the use of electric power, this reduction is still insufficient. Since the outlook is for production volumes to increase in the future, we are planning visualization and thorough improvements to operational procedures, including paint drying furnaces and heat-treating furnaces, in an effort to reduce the use of fuel.

To achieve the targets, we are also working to eliminate waste in power consumption by making improvements to air-conditioning and reducing standby power at night and on holidays.



Promoting Green Logistics

In transportation, we have been making efforts to reduce CO₂ emissions by eliminating waste and by improving efficiency. With FY2006 as the benchmark year, we aimed to achieve a 10% reduction in the basic unit of transportation (t-CO₂/t) in FY2009. Through measures such as modal shifts, efficient transportation planning and by making improvements to loading ratios, we exceeded the target with an 11% reduction in FY2009. We will be pushing activities toward the goal of an 11% reduction in FY2010 compared to FY2006 levels.



Loading a railway container

Initiatives for Eco-friendly Products

The Sumitomo Heavy Industries Group has created systematic and voluntary standards across the Group such as carrying out Lifecycle Assessments*, improving recycling rates at the time of disposal, reducing the volume of packaging, curtailing harmful substances contained in products, and developing products that consume less energy, weigh less, are more compact and last longer. We have started evaluations based on these standards as well as initiatives to make improvements.

*Lifecycle Assessment: A method of objective and quantitative evaluation of environmental impact throughout the lifecycle (all stages from extracting the resources to manufacturing, use, disposal and transportation) of products and services

Activities to Reduce Paper Usage

Reducing paper use is part of activities to save resources and at the same time, it is linked to activities to prevent global warming such as reducing CO₂ emissions in the papermaking process. In FY2010, the Sumitomo Heavy Industries Group aims for a 40% reduction compared to FY2005 levels.

In FY2009 we exceeded the target of a 35% reduction over FY2005 levels with a reduction of 52%.

TOPICS

Okayama Works Awarded the Prize for Outstanding Energy Management

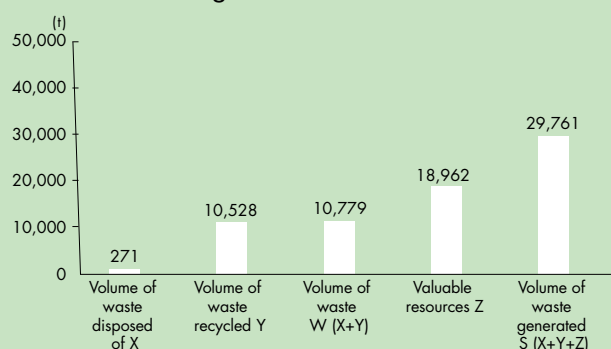
At the Chugoku Energy Conservation awards ceremony, the Okayama Works received the METI Chugoku Prize as "Excellence in Energy Management Plant for FY2009." With participation by everyone as the watchword, the Okayama Works have steadily tackled activities to conserve energy for the prevention of global warming. The prize was awarded in recognition of improvements in the basic unit of energy use by more than 5% every year from FY2005 to FY2008, and for contributing greatly to the prevention of global warming by reducing CO₂ not only through energy conservation with a focus on equipment investment, but by adding up small and straightforward day-to-day activities. Taking advantage of this public commendation, the Works are planning greater strides as a factory with outstanding energy management.



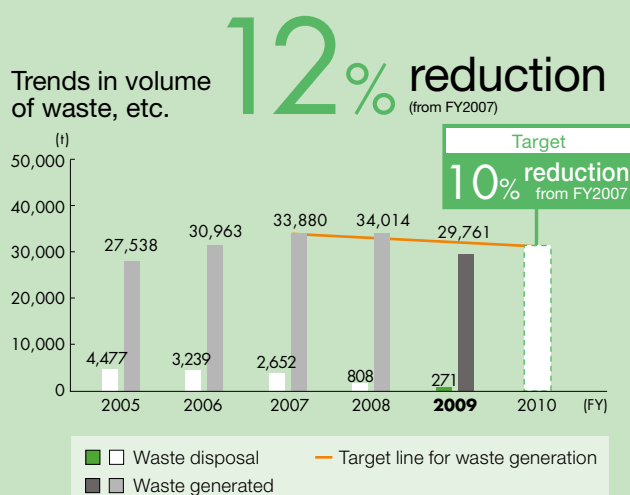
Activities Directed Toward Creating a Society Based on Recycling

To establish a society based on recycling, the staff at Sumitomo Heavy Industries Group recycle and make effective use of waste generated through the Group's business activities and control the volume created. We also take action to reduce the burden on the environment through our business activities.

Volume of waste generated in FY2009



Trends in volume of waste, etc.



Measures for reducing the environmental burden

Establishing a society based on recycling is essential for ensuring the sustainable development of society. We manage our waste by classification into the three categories shown below. We aim to reduce the volume of waste generated through our business activities and put more emphasis on improving the recycling of waste. We also take action to reduce the burden on the environment by setting specific goals.

- **Waste for Disposal** Discarded as landfill or incinerated as unusable waste
- **Valuable Resources** Recycled for reuse. Metal scraps account for the main part.
- **Waste for Recycling** Discarded as waste, but recycled and later reused

Results of our initiatives in FY2009

Control of waste generated and reduction in the volume of waste discarded

In FY2010, we aim to reduce the volume of waste discarded by 10% compared to FY2007 levels. In FY2009, we worked to control the volume of waste including metal scraps, to eliminate wastefulness and to streamline production activities. Additionally, there was also a decline in production volume and we achieved the target for FY2010, keeping the volume of waste at 29,761 tons, which is a reduction of 12% compared to FY2007 levels. The target for waste disposal is less than 1% of the volume of waste. In FY2009, we achieved the target with a disposal volume of 271 tons, or 0.9%.

FY2010 prospects are for an expansion in production volume, but we will be working toward further reduction to maintain our accomplishment.

TOPICS

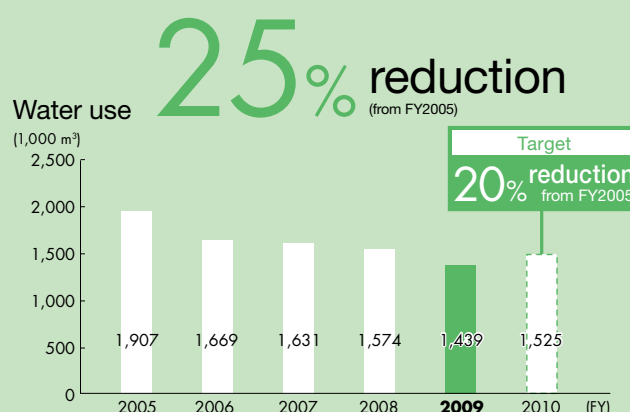
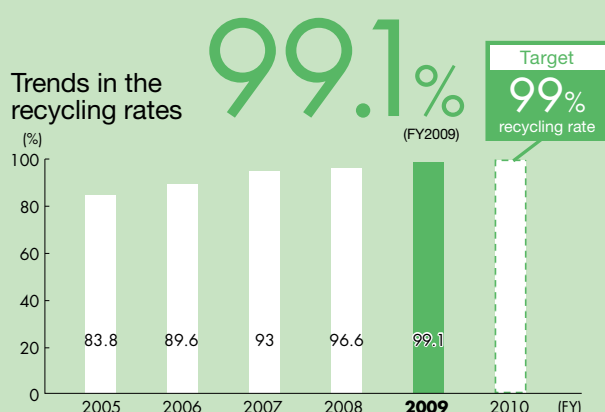
Ash collection, sludge recycling and weight reduction at the Yokosuka Works

At the Yokosuka Works, we collected both sludge and ash from the collection equipment installed at the ship painting facility. The mixture of ash and sludge was transported to a processor for incineration and fusion before final reuse as paving material. Since we added water to the mixture stored at the manufacturing site with the aim of preventing scattering, treating the added weight involved wasteful processes.

Since the collected ash is dust from the shot blast, it contains metal powder. By working with a new processor on this occasion, we were able to recycle the dust as raw material

for steelworks after passing it through several processes including enrichment.

The Yokosuka Works collects the ash in dedicated containers for storage in a dry state and has changed the process of treating ash to recycling as a value-added raw material for steel manufacturing. Eliminating the ash that was mixed in with the sludge is linked to weight reduction since we have reduced the amount of water to prevent scattering. We will continue to investigate new methods of recycling to devise optimal recycling.



Improving recycling efficiency

The initial goal for recycling rates in the second medium-term plan was to achieve a recycling rate of 95% across all departments by FY2010. Since we met this target in FY2008, we raised the goal to a recycling rate of 98% or more for FY2009. As a result, there were advances in separation and collection of waste to achieve the target with a recycling rate of 99.1%.

The target for FY2010 is to achieve a recycling rate of 99% or higher. We are taking action to achieve the target by thorough separation, while advancing the recycling of the metal waste contained in sludge.

Achieving zero emissions

The definition of a zero emissions factory at Sumitomo Heavy Industries Group is a factory where the volume of waste for landfill is less than 0.5% of the volume of waste.

In FY2009, nine factories achieved zero emission status. In FY2010, we will take action to increase the number of zero emission factories with initiatives to reduce the volume of landfill in addition to improving recycling rates.

Reducing water consumption

Reducing water consumption is linked to protecting resources and reducing discharge into public water systems. The Sumitomo Heavy Industries Group has set a target of reducing water consumption in FY2010 by 20% compared to FY2005 levels. In FY2009, we made solid progress with the elimination of leaks that wasted water through the visual installation (aboveground installation) of water pipes. As a result, we achieved the goal a year ahead of time with a 25% reduction from FY2005 levels. We aim for further reductions in FY2010.

TOPICS Okayama Works Recycle Park

At the Okayama Works, the waste collection station has been named the Recycle Park. At every factory within the Works, waste is divided into 11 categories for recycling and ultimately collected at the Recycle Park.

When the waste is transferred into dedicated containers at the Recycle Park, it is carefully checked to verify that it contains no foreign substances. Naming the waste collection station the Recycle Park helped build awareness among employees that waste must be recycled.

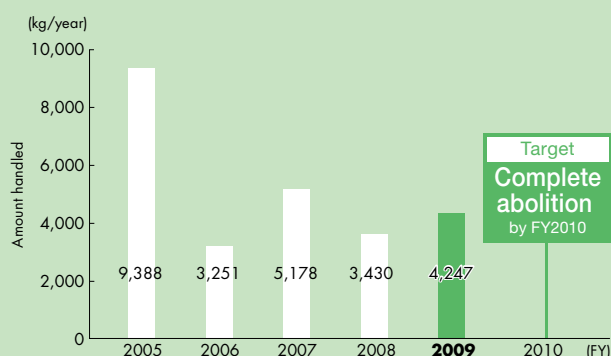


Activities for Managing Chemical Substances

To prevent environmental pollution, we focus on the following four issues for the effective management of chemical substances.

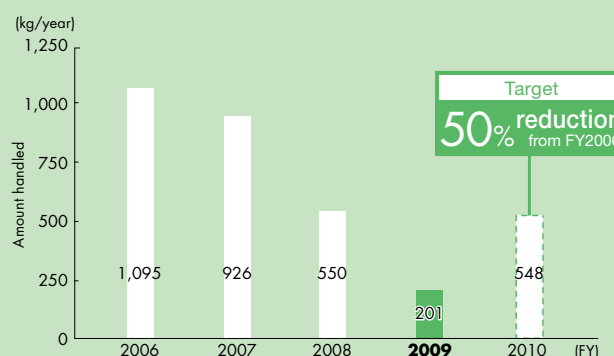
Emissions of substances that are subject to the Soil Contamination Countermeasures Law

55% reduction
(from FY2005)



Emissions of ozone-depleting chemicals

82% reduction
(from FY2006)



Emission control of organic chlorine compounds

Emission control of substances subject to the Soil Contamination Countermeasures Law

We have set a goal of completely eliminating by FY2010 the use of dichloromethane, tetrachloroethylene and trichloroethylene, which are organochemical substances subject to the Soil Contamination Countermeasures Law. In FY2009, the total reduction for these three substances was 55% compared to the level in FY2005. By substance, the achievement breaks down as follows: dichloromethane was reduced by 99% from FY2005 level, surpassing the 66% reduction from FY2005 level in FY2008. Trichloroethylene increased by 2% from FY2005 levels but will be completely abolished in FY2010 with the introduction of a substitute. Use of tetrachloroethylene was completely abolished as of FY2009.

Emission control of ozone-depleting chemicals

We have set a goal of reducing our emissions of the ozone-depleting chemicals, HCFC-141b and HCFC-225, by 50% by FY2010 compared to the level in FY2006 as the benchmark. As of FY2008, HCFC-225 was completely abolished and HCFC-141b was reduced by 81% compared to FY2006 levels. For the whole of FY2009, there was a reduction of 82% over FY2006 levels and with the introduction of a substitute, we are targeting further reductions.

Management of PCB and total abolition of equipment containing PCB

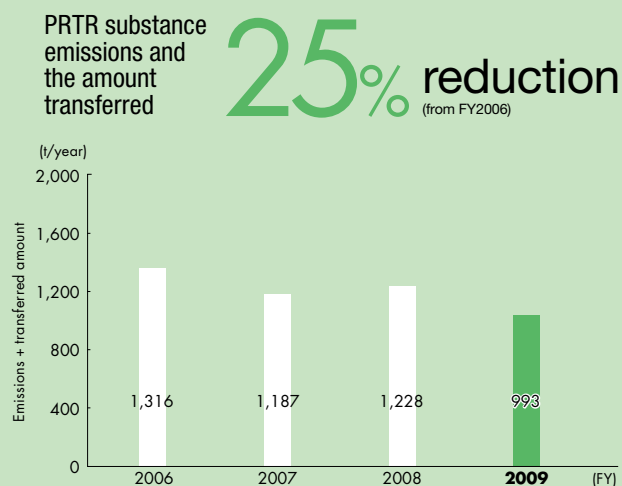
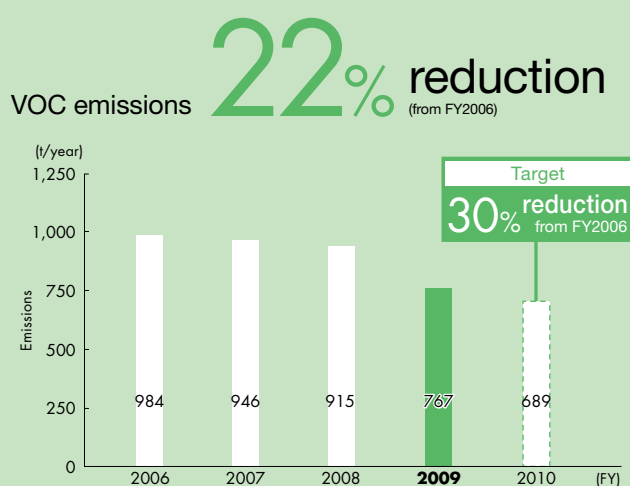
We have completed registration of all equipment with high PCB concentrations with the processing company, Japan Environmental Safety Corporation. We will complete investigations of equipment with low PCB concentration in FY2010 and we are taking systematic measures to be able to process them as soon as possible thereafter. We plan to abolish the use of stabilizers and transformers containing PCB for lighting equipment by FY2010.



Storing transformers containing minute amount of PCB



Exterior view of the warehouse for storage of equipment containing PCB



Emission control of VOC (volatile organic compounds)

Toluene, xylene and ethylbenzene in paint solvents account for close to 90% of the VOC we use. Our goal is to reduce emissions of these chemicals by at least 30% by FY2010 compared with the level in FY2006.

We have made progress with the reductions thanks to the introduction of solvent collection and removal equipment at our large-scale paint facilities, which are subject to legal controls. As a result, we saw reductions of approximately 22% compared to the level in FY2006. Measures to control VOC emissions in FY2010 continue on from FY2009 with the operation of solvent collection and removal equipment, expansion of powder paint, and the adoption of low-solvent paints to control emissions.

TOPICS

Controlling the volume of VOC generated by installing VOC removal equipment

We have installed VOC removal equipment in the drying furnace for the parts painting line at Sumitomo (S.H.I.) Construction Machinery Co., Ltd. where we manufacture hydraulic excavators. By properly drying the painted parts for the hydraulic excavator in the drying furnace, the parts retain the coating film that allows immediate use and the strength they were designed for. When drying the parts in the drying furnace, the paint emits VOC. We remove the VOC with VOC removal equipment (removal rate 99%).

To reduce VOC generation without relying only on VOC removal equipment, we use low-solvent paint for some of the parts. We are also investigating the use of non-solvent paints and powdered paints.



Emissions and transfer of PRTR substances

About 90% of the PRTR substances we use are paint (epoxy resin) and its solvents (toluene, xylene and ethylbenzene). In FY2009, we reduced these substances by 25% of the level in FY2006. We will continue to expand the use of low-solvent paint while ensuring that we maintain the quality of our products. We will also install and expand solvent collection and removal equipment to reduce the emission and transfer of PRTR substances.

Total amount reported in FY2009

(kg/year)

Enforcement order No.	Name of substance	Emissions + transferred amount
30	Bisphenol-A liquid epoxy resin	58,726
40	Ethylbenzene	217,686
43	Ethylene glycol	17,344
63	Xylene	448,393
68	Chrome and trivalent chrome compound	191
132	1,1-Dichloro-1-fluoroethane	201
145	Dichloromethane	802
177	Styrene	1,286
211	Trichloroethylene	11,356
227	Toluene	177,187
230	Lead and its compounds	738
231	Nickel	87
304	Boron and its compounds	764
311	Manganese and its compounds	15,756
346	Molybdenum and its compounds	26

Clearing the International Norm for Efficiency Standards

Energy Conservation

Power Transmission and Controls Group

We have done a thorough review of energy loss in the motor to achieve an average reduction of 10%. Clearing the IE2 international standard for efficiency, the motor contributes to energy conservation.



Speed reducer with high-efficiency motor

Adopting Environmentally Friendly Parts

Environmentally Friendly

Power Transmission and Controls Group

These compact motors equipped with reduction gears and used to drive conveyors, food processing machines, packaging machines and assistive products with a capacity in the range of 2.5W to 15kW are compatible with standard specifications in the RoHS directive, made to be environmentally friendly and safe.



Compact Gear Motors
(Hyponic Gear Motor, Altax®NEO, Prest®NEO, Astero®)

Contributing to Biomass Power Generation

Energy Conservation

Seisa Gear, Ltd.

An important component for biomass power facilities. Rotating at high speeds, the dynamic force of the large-scale turbines is transmitted to the power generator securely and without waste.



Speed reducer for generating wind power

Reduced Power Consumption

Energy Conservation

Plastics Machinery Division

In this machine that produces plastic products by pouring molten plastic into a mold and shaping it, the electric drive system replacing the hydraulic drive realizes substantial reductions in power consumption.



Electrically Powered Plastic Injection Molding Machine

Helps Reduce Waste

Environmentally Friendly

Sumitomo Heavy Industries Modern, Ltd.

This system re-pelletizes the mill ends generated in plastic film production and other processes to recycle them into raw materials, reducing waste by reusing mill ends and defective products.



Pelletizing Recycling System

Contributing to QOL (Quality of Life)

Environmentally Friendly

Quantum Equipment Division

This is one of a range of radiation therapy devices. Compared to regular x-rays, it is capable of pinpointing and picking off cancerous cells for outstanding therapeutic value that is gentle on the body of the patient.



Proton beam cancer therapy equipment

Downsizing Equipment

Energy Conservation

Quantum Equipment Division

The device produces the pharmacological agent (labeled compound) for PET (Positron Emission Tomography) examinations, one type of cancer diagnosis. Being about half the size of conventional units, it helps reduce the power consumption and the generation of waste at hospitals.



Ultra-Compact Cyclotron (HM-7) for PET Diagnosis

Reduced Power Consumption

Environmentally Friendly

Precision Equipment Group

Ultrahigh vacuum pump used in semiconductor production processes and other applications that reduces power consumption by separately optimizing and operating multiple cryopumps and the minimum number of compressors.



SICERA® Cryopump

Applicable to a Wider Range of Products

Environmentally Friendly

Mechatronics Division

This device encapsulates semiconductor IC chips using resin, preventing the resin from entering culls and runners, reducing waste generated at molding.



Semiconductor Encapsulating System

High-Performance Roll That Conserves Resources and Energy

Environmentally Friendly

Sumitomo Heavy Industries HIMATEX Co., Ltd.

A mill roll used in iron-making. The use of different materials for the outer shell layer and inner core ensures wear resistance and economic efficiency at the same time.



Centrifugally Cast High-Speed Roll

Longer Operating Life for Consumables

Environmentally Friendly

Sumitomo Heavy Industries Finetech, Ltd.

Purifies grinding lubricant and cutting fluid to extend the lifecycle of the fluid. In addition to minimizing top-ups and cutting down liquid contained in recovered waste, the frequency of changing filters is reduced due to the high-efficiency magnetic separator.



Magnetic separator

Improving Efficiency of Power Generation

Energy Conservation

Sumiju Precision Forging Co., Ltd.

Our advanced, integrated blade manufacturing technology is applied to these blades, which require more complexity and more exacting precision to improve power generation efficiency.



Blades for gas turbines

Adopting Energy-Conserving Equipment

Energy Conservation

SEN Corporation

Used in the semiconductor manufacturing process and elsewhere, the system implants ion in silicon wafers. Tracking the rapid evolution in semiconductor technology, the system implements lower voltage and lower power consumption.



Ion implantation system

Also Adapted to Waste Fuel

Environmentally Friendly

Energy & Environment Group

In addition to using biomass fuel for power generation and contributing to reduced CO₂ emissions, the facility can also be adapted to waste fuel such as tires.



Circulating fluidized bed boiler

Recovering Valuable Metals from Industrial Waste

Energy Conservation

Energy and Environment Group

These facilities for recycling industrial waste through high-temperature processing (to collect metals and turn them into pellets) contribute to reducing the burden on the environment by recycling industrial waste.



Sumitomo W+E Rotary Kilns

Contributes to Processing SO_x, NO_x and Dioxin in Exhaust Gas

Environmentally Friendly

Energy & Environment Group

The exhaust gas processing facility uses a moving bed of activated charcoal to process SO_x, NO_x, dioxin, dust and mercury. Since it is possible to use one device for desulphurization, denitrification and to remove dioxins, energy consumption can be reduced over conventional facilities.



Dry-type desulphurization-denitrification system

Superior Diffusion Performance Enables Energy Conservation

Energy Conservation

Sumitomo Heavy Industries Environment Co., Ltd.

This equipment diffuses ultrafine air bubbles into factory effluent and sewage to provide efficient purification of wastewater. There are an energy-conserving effect of a superior diffusion performance and a cost reduction effect due to simple maintenance.

Micrus® Superfine-bubble membrane tube



Compact Facility with High-Speed Separation

Energy Conservation

Sumitomo Heavy Industries Environment Co., Ltd.

Coagulates suspended particles contained in waste water by high-speed separation. Highly efficient and compact facility making effective use of space and contributing to lower running costs.



Coagulation sedimentation system Sumi-Thickener®

Lower Running Cost

Energy Conservation

Nihon Spindle Mfg. Co., Ltd.

An air-conditioning control system that is able to keep the temperature within $\pm 1^\circ\text{C}$ and the humidity within $\pm 5\%$ of the set values. With a superior control system, this system reduces power consumption by 60% compared to conventional systems.



Air-conditioning control system, Kurieko II

20% Reduction in Power Consumption

Energy Conservation

Environmentally Friendly

Nihon Spindle Mfg. Co., Ltd.

Removes dust by filtering soot and smoke from steelworks. Improves the flow of air and reduces power consumption by 20% compared to conventional facilities.



Pulse dust collector

Contributes to High Energy-Conservation Effect and Zero Emissions

Energy Conservation

Environmentally Friendly

Sumiju Plant Engineering Co., Ltd.

We have developed a compact unit for the high-performance falling film plate evaporator. As well as implementing a high energy-saving effect, the unit collects water and valuable resources from waste water and contributes to zero emissions.



Mini-evaporator

40% or More Reduction in the Sludge Output Dires® Sludge Reduction System

Energy Conservation

Sumiju Environmental Engineering Inc.

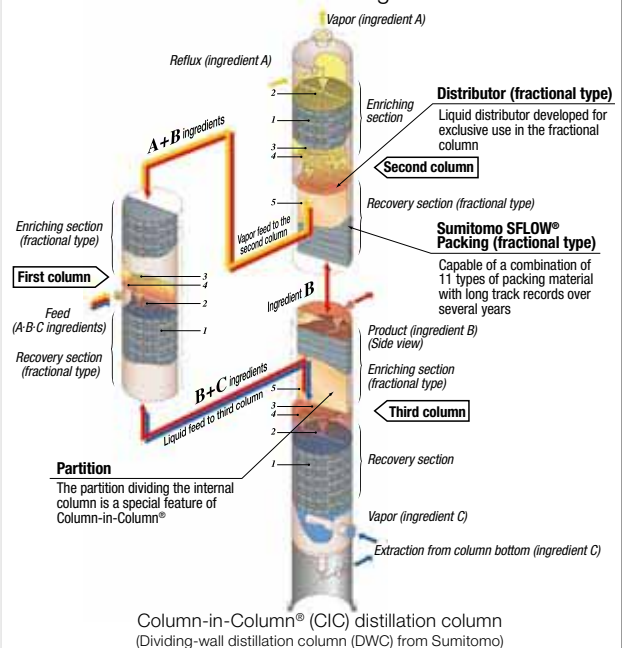
A system that controls excess sludge discharged from effluent treatment facilities through the use of microorganisms. This system significantly reduces initial costs and running costs compared to conventional mechanical systems or systems that use chemicals.

Treating Several Distillation Processes in One

Energy Conservation

Sumiju Plant Engineering Co., Ltd.

A single unit capable of handling several distillation processes in one facility. More than a distillation column, it also allows for the reduction of peripheral equipment to curtail initial investment and running costs.



Extending Adaptable Applications for Streamlining

Energy Conservation

Izumi Food Machinery Co., Ltd.

Heat exchanger for use in food production. Contributing to streamlined production, this product group is adaptable to a range of liquid shapes from low to high flow properties.



NT-type plate heat exchanger

Effective Use of Petroleum Resources

Environmentally Friendly

Sumitomo Heavy Industries Process Equipment Co., Ltd.

This equipment is used in the oil refining process. It pyrolyzes heavy oil to collect valuable light oil such as gasoline. This unit converts heavy oil, now limited in use, into light oil.



Coke Drum

Conserving Energy on Ships

Energy Conservation

Sumitomo Heavy Industries Marine & Engineering Co., Ltd.

Achieves energy conservation performance at international top levels by combining the optimum ship design with energy-saving additions and high-efficiency propellers of our own development.



Oil tanker

60% Reduction of Fuel Consumption with Hybrid Power Supply

Energy Conservation

Environmentally Friendly

Sumitomo Heavy Industries Engineering & Services Co., Ltd.

Mounted on container cranes, energy generated during lowering is stored and used to support hoisting work.



Sybrid System™

Low-Noise, Cuts Maintenance Costs

Energy Conservation

Environmentally Friendly

Sumitomo Heavy Industries Techno-Fort Co., Ltd.

This clutch and brake unit for activating and stopping the rotary shaft reduces noise levels by 10% compared to air-powered and dry units. The airless operation also reduces running costs.



Wet clutch and brake for forging presses

Reduce CO₂ by Generating Renewable Energy

Environmentally Friendly

Shin Nippon Machinery Co., Ltd.

Used to generate renewable energy (power generation fueled by renewable energy) with the aim of reducing CO₂.



Steam turbine for private power generation

CO₂ Reduction, Reduced Running Cost

Energy Conservation

Environmentally Friendly

Sumitomo (S.H.I.) Construction Machinery Co., Ltd.

The magnet specification machine is primarily used for scrap work where frequent swiveling action recovers energy, making the model suitable for hybrid development.



Hybrid hydraulic excavator

Contributing to CO₂ Reduction with Electric Forklifts

Energy Conservation

Environmentally Friendly

Sumitomo NACCO Materials Handling Co., Ltd.

Quick operation using an AC motor. The side-extracted battery can be adapted to long running times. Contributes to CO₂ reduction, energy conservation and noise reduction compared to the internal combustion engine.



Counter-balanced electric forklift

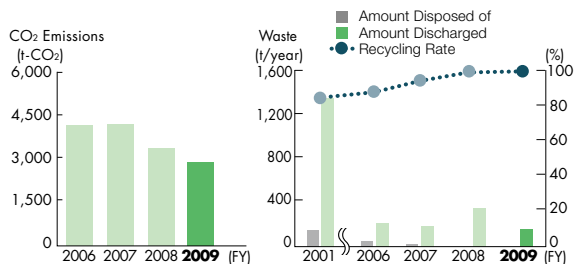
Environmental Impact Data

Environmental impact data for SHI works (including Group companies within the works), Group companies in Japan (away from SHI works) as well as the main overseas Group companies

Environmental impact data for each works

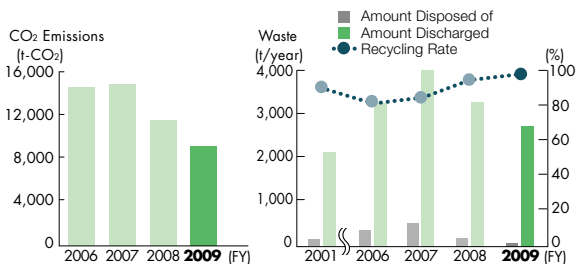
Tanashi Works

■ Established in 1939 ■ ISO14001 (obtained in August 1998)
 ■ Site Area: 43,218m² ■ Building Area: 14,368m²
 ■ Main Products: Cryogenic Equipment, Defense Equipment



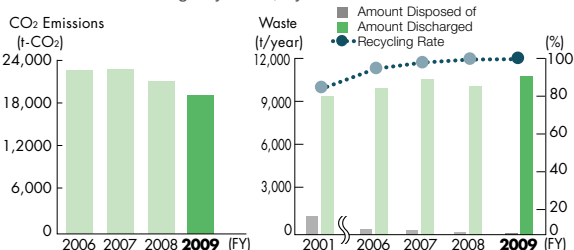
Chiba Works

■ Established in 1965 ■ ISO14001 (obtained in April 1999)
 ■ Site Area: 294,600m² ■ Building Area: 61,630m²
 ■ Main Products: Plastic Injection Molding Machines, Metallic Molds, Construction Machines



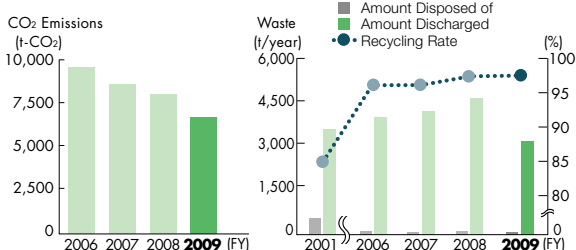
Yokosuka Works

■ Established in 1971 ■ ISO14001 (obtained in March 1999)
 ■ Site Area: 523,000m² ■ Building Area: 170,572m²
 ■ Main Products: Ships, Laser Processing Systems, Semiconductor Manufacturing Equipment, Precision Forgings, Stage Systems, System Controller



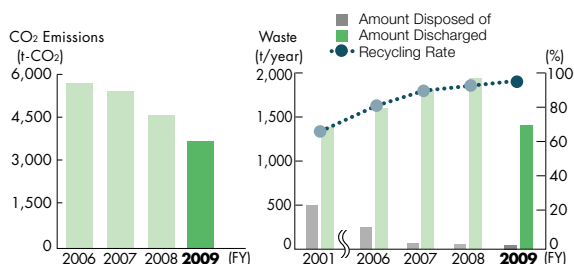
Nagoya Works

■ Established in 1961 ■ ISO14001 (obtained in January 1999)
 ■ Site Area: 293,000m² ■ Building Area: 90,000m²
 ■ Main Products: Power Transmission and Controls, Geared Motors, Inverters, Construction Machines



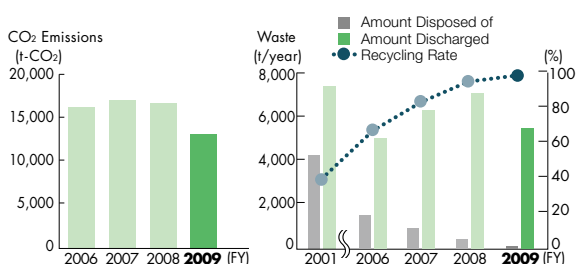
Okayama Works

■ Established in 1948 ■ ISO14001 (obtained in March 2000)
 ■ Site Area: 425,000m² ■ Building Area: 94,000m²
 ■ Main Products: Small Gear Motors, Gearboxes, Stage Systems, Machine Tools



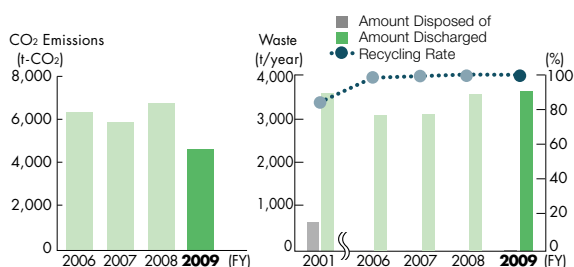
Ehime Works (Niihama Factory)

■ Established in 1888 ■ ISO14001 (obtained in November 1999)
 ■ Site Area: 418,000m² ■ Building Area: 200,000m²
 ■ Main Products: Ion Accelerators, Coating Equipment, Parking System, Forge Rolling Machines, Transporting Machines

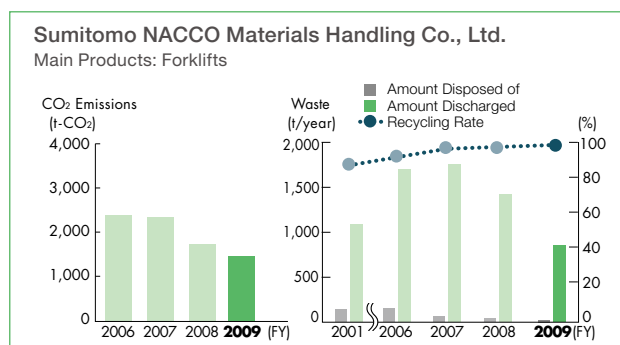
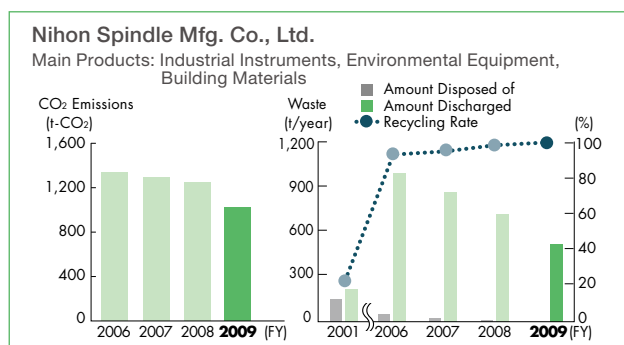
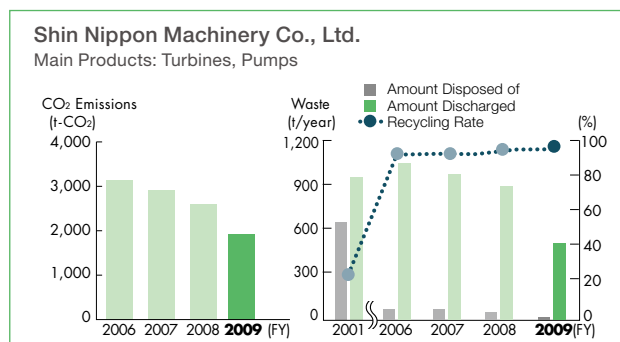
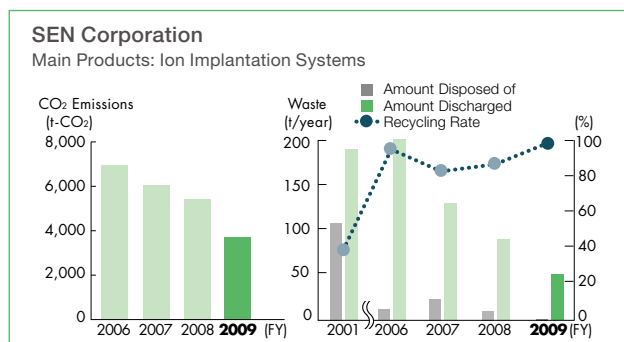


Ehime Works (Saijo Factory)

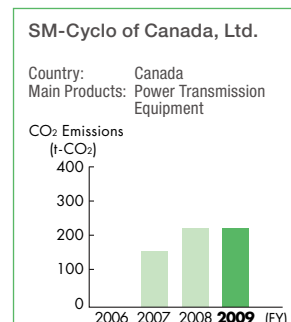
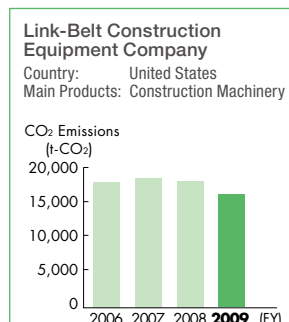
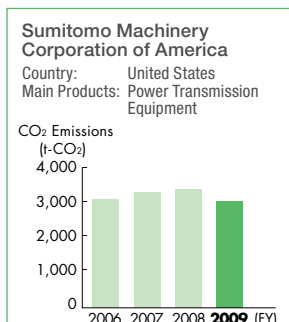
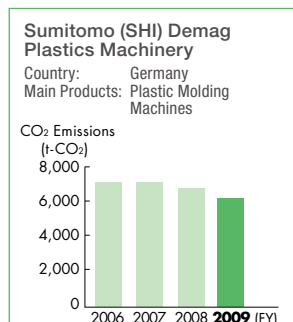
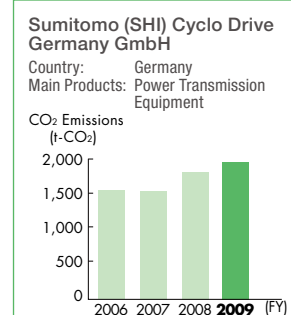
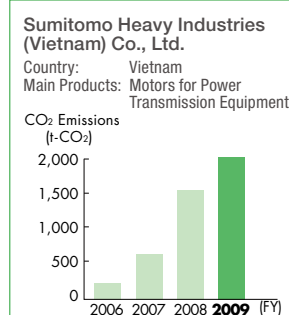
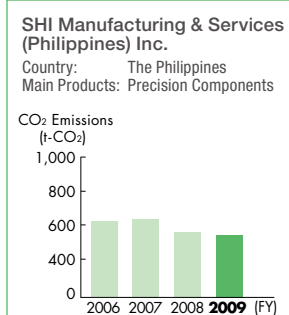
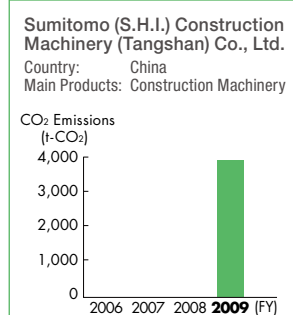
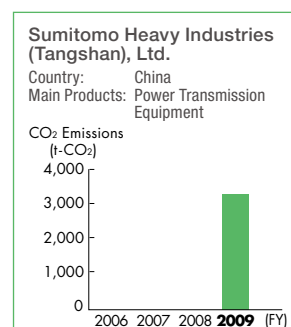
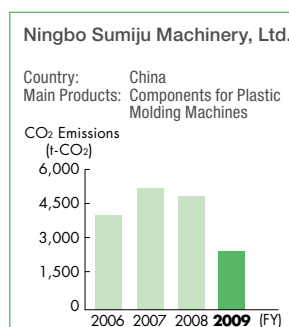
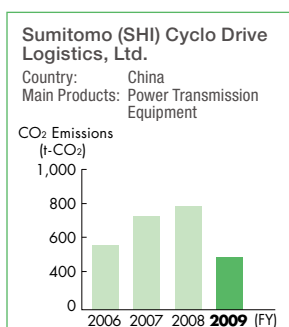
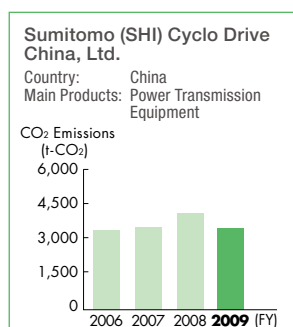
■ Established in 1973 ■ ISO14001 (obtained in February 1999)
 ■ Site Area: 535,000m² ■ Building Area: 58,341 m²
 ■ Main Products: Pressure Vessels, Stirring and Mixing Equipment, Coke Oven Machines



Environmental impact data for Group companies in Japan (away from the works)



Environmental impact data for main overseas Group companies



Social Contribution Activities

Each division and company in the Sumitomo Heavy Industries Group aims to establish itself in the local community. Each employee takes the initiative in planning and implementing activities for contributing to the community.

Social Contribution Activities

Biodiversity Measures

The Sumitomo Heavy Industries Group works hard to plant and grow trees to contribute to biodiversity conservation. Endorsing the Declaration of Biodiversity by the Japan Business Federation (Nippon Keidanren), we are also among the participating partners.

At the Tanashi Works, we are protecting the Musashino forest, which occupies about 30% of the 43,000 m² site area. There are more than 4,500 trees of more than 40 different species and Nishi-Tokyo City has designated 164 of these trees protected trees. From the viewpoint of academic research, the area is a valuable natural treasure trove with a past survey of the habitat confirming introduced species such as rare butterflies with no habitat in the Kanto region, and butterflies that only inhabit the warm areas of Western Japan.

The Tanashi Works have named a part of the area the “Forest of Inspiration” and opened it to the general public. We have installed benches and wheelchair accessible walking trails, creating a place where local residents can come to relax. In the fall, leaves on the ground are collected for composting as part of the agricultural courses sponsored by community centers in Nishi-Tokyo City, and nursery school children collect acorns. Chestnuts collected within the grounds are provided to the locally organized Jomon no Mori Autumn Festival as an ingredient for baking cookies.

At the Yokosuka Works, we collaborated with the local Association for Creating a 1000 Year Forest by planting 2,200 seedlings of trees native to the city in the grounds during the Yokosuka Works Family Day. The seedlings are tagged with the name of the family that planted each one so that they can verify the growth of the trees at future family days. We also plant one tree at every launch of a ship built at the Yokosuka Works.

Shin-Nippon Machinery has planted trees and camellia trees in the grounds of its factory at Kure City. Camellia is the tree of Kure city. Since the plantings can be seen outside the premises, we expect that people in the neighborhood and those passing by on the train will enjoy the sight when the trees are in blossom.

Other Works and Group companies are also making efforts to improve the ratio of trees planted. Aiming for an abundance of greenery around our factories, we will plant acorns from the Tanashi Works in all areas as of the fall of 2010.



Tanashi Works



Forest of Inspiration



Planting trees at the Yokosuka Works Family Day



Growing trees



Camellias planted along a road in the grounds of Shin-Nippon Machinery

Local Traffic Safety Measures

As a member of the local traffic safety association, the Sumitomo Heavy Industries Group participates in traffic safety campaigns. We also organize lectures in all areas to raise awareness of traffic safety among company employees. We also request the cooperation of forwarding companies entering and leaving the factory.

The Nagoya Works and Sumitomo NACCO Materials Handling Co., Ltd. proactively cooperate with local traffic safety campaigns by periodically undertaking traffic monitoring duties.

At the Yokosuka Works, the Taura Traffic Safety Association in Yokosuka appealed for traffic safety by presenting visitors to the Works arriving by car with a radish root, the symbol of the "Root Out Traffic Accidents" slogan for the movement to prevent end-of-year traffic accidents.



Handing out radishes
(Yokosuka Works)



Traffic patrol (Nagoya Works,
Sumitomo NACCO Materials
Handling Co., Ltd.)

Crime Prevention Patrol

The Yokosuka Works is one of 62 manufacturing companies in the Oppama district of Yokosuka City who are members of the Oppama Industry Association. The Works proposed a crime prevention patrol as a contribution by the Association to the local community. The proposal was adopted and on the fourth Thursday of every month (based on past data, this is the day with the most frequent occurrences of purse snatching and groping), six persons from six companies in the Association, staff at the Community Safety Section of the Taura Police Department and duty officers from the police box at Taura Station mainly patrol the vicinity of Oppama Station.

Disaster Prevention Drills

As a member of the local community, the Sumitomo Heavy Industries Group is involved in action to prepare for a natural disaster. The Niihama Factory, the Niihama fire department and Sumitomo Chemical Co., Ltd. jointly organize a large-scale fire and disaster prevention drill. Each workplace also conducts monthly fire drills using fire extinguishers, indoor and outdoor fire hydrants in an effort to raise awareness and improve the skills of on-site



fire-fighting
teams.

Disaster prevention drill (Niihama Factory)

Rescue Drills

The Sumitomo Heavy Industries Group conducts rescue drills under the guidance of the fire department. The Yokosuka Works offered a course in advanced life-saving skills at the large meeting room in the main building. Lasting six and a half hours, the course focused on CPR and AED in addition to lectures and training for hypothetical situations (involving infants and small children, for example). We will continue with the classes to be able to contribute to the local community in a disaster or other emergency situation.

In addition, the Nagoya Works, the Okayama Works and Sumitomo NACCO Materials Handling are registered with the fire department as companies loaning out AED equipment.

Cooperation with Blood Donation Drives

The Sumitomo Heavy Industries Group has collaborated with blood donation drives for many years and for the employees, this has become a fixture as the most familiar contribution activity. In FY2009, a total of 1,078 individuals donated blood.

In the future, the Group will continue its blood donation activities in order to save precious lives.



Giving blood (Chiba Works)

Social Contribution Activities

Communication with the Local Community

Introducing Activities to Prevent Global Warming at the Summer Evening Festival



The summer evening festival

Each Works organizes a summer evening festival to mix with people from the local community.

At the Tanashi Works summer evening festival, we introduced activities to prevent

global warming at the Works and, with the cooperation of Tokyo Electric Power Company, electric vehicles, with the aim of raising awareness of energy conservation among visitors to the venue. We showed visitors the power surveillance system installed at the Works, which monitors power usage and “visualizes” power consumption at each workplace. We also set up an information board about the activities and facilities for conserving energy at the Works.

We had both comments and praise from a lot of people who normally do not have the opportunity to witness energy conservation activities at factories.

To raise interest in preventing global warming among children, we also set up an area where they could make fans, a traditional eco product. Many children set about the task in all seriousness and went home cooling their faces with the completed fans.



Display for visualizing power consumption



Making fans

Workplace Experience

The Sumitomo Heavy Industries Group accepts factory visits and workplace experience as a way of supporting young people in the local community. For students, experiencing the manufacturing workplace, something they cannot do at home or at school, is a particularly valuable experience. It is also an opportunity for high school and university students to familiarize themselves with the Company. In FY2009, we accepted 89 schools and 688 persons for workplace experience and visits. We will continue to accept visits while paying careful attention to safety.

Supplies to Welfare Facilities

The Tanashi Works supplies used cardboard to Work Center Yume no Ki, a social welfare facility in Kodaira City.

The Chiba Works donates soapboxes made at training courses for users of the plastic injection molding machines produced at the Works to the Chichi no Ki-kai volunteer organization run by the PTA at a care facility for children.

The Yokosuka Works provides electric cable ends from manufacturing and empty cans from its offices and dormitories to Kagamida-en, a support facility for intellectually disabled people in Yokosuka City.

At the facility, the cable covering is removed and the wire at the core extracted, the aluminum cans are flattened in a press and both materials are sold as valuable resources with proceeds going toward operating the facility.

We also endorse the “Love the Earth, Love the Children: Let’s Collect PET Bottle Caps and Deliver Vaccines for the World’s Children” campaign of the Ecocap Movement, and we collect caps to donate.

In FY2009, we were able to deliver 23,400 caps (70 kg, vaccines for 30 children) to the Tomo ni Ayumu facility for the disabled, which is backed by the Ecocap Movement. As well as buying vaccines, we are also able to cooperate and support the facility for the disabled that does the intermediate processing of the caps. We will continue these activities in the future.



Collected caps



Unloading aluminum cans from a truck at Kagamida-en

Providing Open Spaces

Since there are no open spaces in the vicinity of the old Uraga Shipyards in Yokosuka City, the Yokosuka Works has leveled a 3,000 m² area at the south side of the factory docks for use as a public space for local festivals and disaster prevention drills, and as a communication venue.

Since the prefectural road that passes by the space curves and visibility is poor, we also replaced the concrete wall with a wire fence. As a result, visibility has improved and we are helping to prevent traffic accidents.



The space after leveling

Participating in Cleanup Activities in the Local Community

The Sumitomo Heavy Industries Group regularly conducts cleanup activities in the surrounding area and we work hard to keep the environment beautiful. We also participate in cleanup activities organized by local authorities and volunteer groups.

In FY2009, the Saijo Factory and SEN Corporation also participated in the “Refresh Setouchi” cleanup activities of Takasu Beach in Saijo City in Ehime Prefecture, in addition to cleanup activities in the vicinity of the Works. Takasu Beach is the only remaining natural sand beach in Saijo City so it is desirable to protect the environment there. The cleanup is conducted once a year with 3.5 tons of trash collected this year.

The Nagoya Works and Sumitomo NACCO Materials Handling also participate in the Adapt Program* supervised by Obu City in Aichi Prefecture and undertake cleanup activities in the environs.



Cleanup activity (Sumitomo NACCO Materials Handling Co., Ltd.)



Cleanup activity at Takasu Beach (Saijo Factory and SEN Corporation)

* **Adapt Program:** Volunteers may designate a public facility in Obu City, for example a park or a footpath, and register with the city. To be able to enjoy using the designated facility, volunteers pick up trash, water trees and weed.

Efforts at Overseas Group Companies

Tree-Planting at Overseas Factories

We also make efforts to plant and grow trees to contribute to biodiversity and to improve awareness of the environment among employees at overseas factories.

In Tangshan in China's Hebei Province, Sumitomo Heavy Industries (Tangshan), Ltd. and Sumitomo (S.H.I.) Construction Machinery (Tangshan) Co., Ltd. have planted cherry trees with many hopes of expanding together with us in the area.

In the Philippines, SHI Manufacturing & Services (Philippines) Inc. has planted trees jointly with other Japanese corporations in the same industrial park. With friendship as the goal, all the participants completed the activities with enjoyment and laughter.

Cherry tree plantings
(Sumitomo Heavy Industries (Tangshan), Ltd. and Sumitomo (S.H.I.) Construction Machinery (Tangshan) Co., Ltd.)



Tree planting activity
(SHI Manufacturing & Services (Philippines) Inc.)

Receiving Visits to Factories Overseas

Sumitomo Heavy Industries (Tangshan), Ltd. in Tangshan, Hebei Province, China, has been accepting visits from many ordinary people as well as the provincial government, the municipal and county governments and schools. In addition to information boards introducing the products, we have also installed information boards with simple explanations of the history of the Sumitomo Group and the overall business of the Sumitomo Heavy Industries Group.

Through the factory visits, we facilitate communication and act as a new member of the local community.



Factory tour (Sumitomo Heavy Industries (Tangshan), Ltd.)



Sumitomo Heavy Industries, Ltd.

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