

# Promotion of Environmental Management



While seeking harmony with the global environment, the Kawasaki Group is advancing its environmental management for the purpose of forming a future society that is even more abundant and beautiful.

## Furthering “Environmental Management” under the Medium-Term Business Plan “Global K”

In 2003, Kawasaki established the 2010 Environmental Vision: “What Kawasaki Should Be in the Year 2010” as guidelines for seeking the improvement of environmental management. In pursuit of this vision, we undertake environmental activities under our Environmental Management Activities Plan, which is set with specific details every three years.

In our 6th Environmental Management Activities Plan, which began in FY2008, we describe the promotion of environmental management that increases the

confidence of society in the entire Kawasaki Group. Moreover, in order to further promote environmental management based on our medium-term business plan “Global K” with the goal of achieving our vision of “What Kawasaki Should Be in the Year 2010,” we have incorporated policies related to the reduction of greenhouse gas emissions and the minimization of environmental risks into our business plan, and we have built a system that allows follow-up with effective efforts.

FY2010, which is the target year of our 2010 Environmental Vision, is drawing very close. In FY2009, in addition to keeping this system on a stable track, we want to begin preparing a new 2020 Environmental Vision (What Kawasaki Should Be in the Year 2020).

## The 2010 Environmental Vision: “What Kawasaki Should Be in the Year 2010” (excerpts)

Environmental Philosophy	• Contribute to the realization of a sustainable society
Environmental Management	• Create an Environmental Management System (EMS)
Environmentally Conscious Products	• Offer products that protect the environment
Environmentally Conscious Production	<ul style="list-style-type: none"> <li>• Reduce the average amount of CO<sub>2</sub> emissions for FY2008–2012 by 6% relative to the FY1990 level</li> <li>• Reduce the amount of waste production by FY2010 by 10% relative to the FY2000 level</li> <li>• Achieve zero waste emissions at all plants</li> </ul>
Environmental Communication	• Conduct in-house environmental education and contribute to improving community environments

### Environmental Charter

(Established in 1999)

#### Environmental Philosophy

As a company in key industries related to land, sea and air, Kawasaki is deploying its business activities globally in pursuit of reducing environmental impact and creating a sustainable society. This makes us commit ourselves to contribute to the sustainable development of society through our environmentally conscious business activities, technologies and products that preserve the global environment.

#### Conduct Guidelines

1. Recognizing that global environmental protection is a common and serious issue for humankind, Kawasaki will positively volunteer to engage itself in harmonizing with the environment globally. We shall regard this as one of the most important strategies when we deploy our business activities.
2. During its production stages, Kawasaki will endeavor to conserve resources, to save energy, to recycle resources and to reduce industrial waste and will promote the reduction of environmental impact.
3. In the new product planning (i.e. research and development) and designing stages, Kawasaki will render careful attention throughout the procurement, production, distribution, utilization and material disposal stages in order to minimize the environmental impact.
4. In seeking solutions to global environmental issues, Kawasaki will do its best to develop and provide new technologies and new products that contribute to environmental protection, energy saving and resource conservation.
5. Notwithstanding its compliance with environmentally related institutional laws, regulations and agreements and voluntary action plans of each industry concerned, Kawasaki will voluntarily institute its own environmental control standards as an appropriate and necessary action in order to strive to improve environmental control levels.
6. Through environmental training and public awareness activities, Kawasaki will strive to enlighten all its employees on global environmental issues and will support individual views, lifestyles and will encourage their participation in the social activities and services.
7. Kawasaki will implement an environmental management system to promote environmental preservation and conservation, and hold regular conferences to review management systems and maintain continual improvement.

## Toward the Realization of the Social Mission of Our Corporation

Two years have passed since the beginning of the First Commitment Period (2008–2012) of the Kyoto Protocol, and opportunities are increasing at an international level for reducing greenhouse gas emissions to prevent global warming. Moreover, in September this year, the Japanese government set a medium-term reduction goal of “a 2020 target to reduce emissions by 25% compared to 1990,” which is more ambitious than the reduction plan of the Kyoto Protocol.

We recognize that the reduction of greenhouse gas emissions is an important management issue for our Group. Our fundamental stance as a corporation is to create products with outstanding energy efficiency that customers can safely use for a long time with peace of mind. Our fundamental stance itself, which is the practice of realizing contribution to society based on manufacturing, ultimately results in efforts to prevent global warming and conserve resources.

Last year, we independently set “reducing our average amount of CO<sub>2</sub> emissions per net sales basic unit for FY2008–2012 by 10% compared to FY2007” as a new target for the entire Group, and we are strengthening our efforts to reduce greenhouse gas emissions in our production processes. At the same time, we are also participating in the emissions trading system that is being conducted on an experimental basis by Japan, and we consider this system one of our measures that can be implemented in order to realize new reduction targets.

In February this year, we discovered the fact that the nitrogen oxide in gas emitted from the in-house power generation systems at one of our plants exceeded the standard levels of environmental laws and regulations as well as local agreements. We reported this immediately to the government and took countermeasures to prevent recurrence. In addition, for the purpose of reducing environmental risks at all our Group plants, we have conducted thorough on-site investigations into the status of their compliance with environmental laws and regulations.

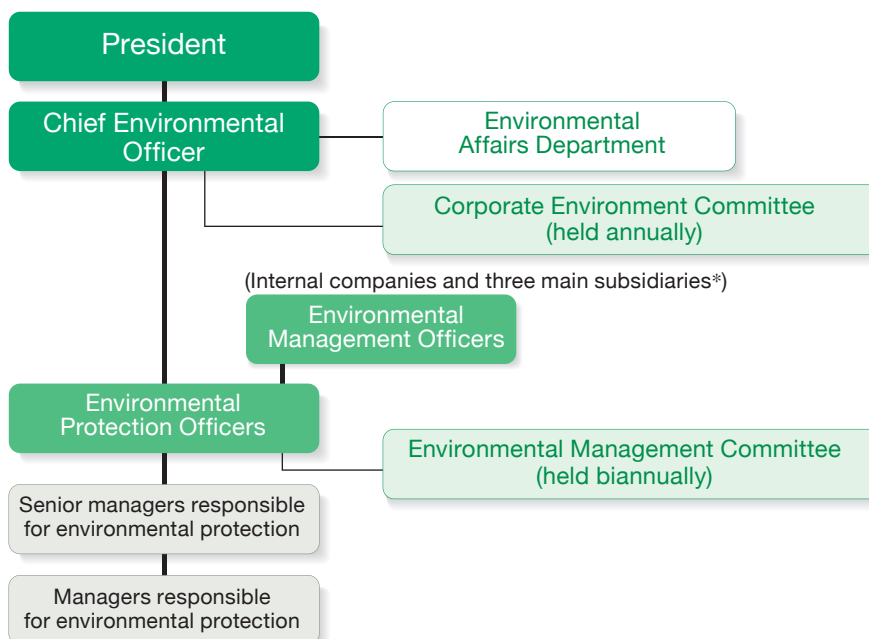
In order to implement the social mission of our Group, which is to be “Kawasaki, working as one for the good of the planet,” we will continue to make efforts with environmental management as an important theme, and contribute to the resolution of global environmental problems through the business of our corporation.



**Seiji Yamashita**

Chief Environmental Officer  
General Manager of CSR Div.  
Executive Officer

## Environmental Management System



\*Three main subsidiaries: Kawasaki Shipbuilding Corporation, Kawasaki Precision Machinery Ltd. and Kawasaki Plant Systems, Ltd.

# Efforts for the Reduction of Greenhouse Gas Emissions



In addition to reducing greenhouse gas emissions by providing products and technologies that contribute to the realization of a low-carbon society\*, the Kawasaki Group is strengthening its independent efforts to reduce the greenhouse gas emissions that result from our production activities.

## Global Warming Countermeasures

### 1. Revision of Target Setting

Our Group is comprised of very different types of business units, including built-to-order manufacturing and mass production businesses. For this, the greenhouse gases emitted by our production activities tend to fluctuate widely due to the changing volume of orders and the varying pace of operations. In consideration of these types of conditions, we believe that in our efforts to reduce greenhouse gas emissions setting targets based on basic units is appropriate in order to improve CO<sub>2</sub>/energy efficiency, and we have revised our reduction target accordingly.

#### CO<sub>2</sub> Reduction Target

Reduce the CO<sub>2</sub> emissions basic unit with net sales as the denominator by an average of 10% for FY2008-2012 compared to FY2007.

### 2. Strengthening Our CO<sub>2</sub> Reduction Efforts

#### (1) Companywide CO<sub>2</sub> emissions reduction projects

We have achieved a certain level of results in the reduction of greenhouse gas emissions from our production activities through conversion to energy-saving equipment. In order to realize further reductions, the establishment of analytical methods and the strengthening of our systems to execute companywide reduction efforts were necessary. For this purpose, we began reinspecting the energy consumption of plants companywide from the previous fiscal year, and started a companywide CO<sub>2</sub> emissions reduction project to investigate CO<sub>2</sub> emissions reduction factors.

The Kawasaki Group undertakes production activities in a wide variety of business areas, ranging from shipbuilding businesses that conduct built-to-order manufacturing to businesses that manufacture mass-produced goods. Thus, comparison of the energy saving efforts that are undertaken in our various business activities using the same standards is difficult, so we have introduced detailed basic unit management methods that are suitable for each form of business. As we visualize the causes of basic unit fluctuation and clarify points for possible improvements, we will also continue to investigate measures to reduce CO<sub>2</sub> emissions that can be implemented in the same manner even when business forms differ, and we will realize optimal measures for the Group as a whole.

#### (2) Promoting the introduction of photovoltaic systems

We are positively considering and advancing investments in equipment that contributes to reducing greenhouse gas emissions from a companywide perspective. As a rule, we are installing photovoltaic power generation equipment when constructing new plants.

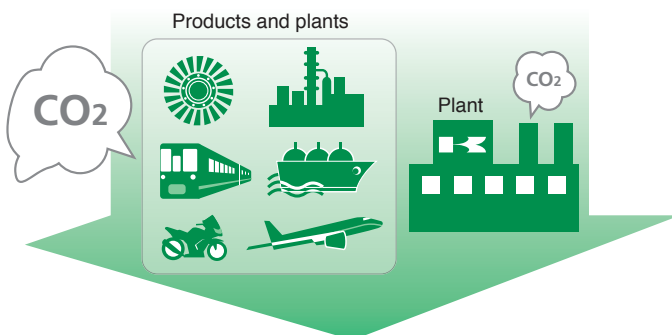


Photovoltaic systems at the Kawasaki Precision Machinery main plant (core parts plant)

#### (3) Rebuilding our energy management system

With the revision of the Law Regarding the Rationalization of Energy Use, we have rebuilt our in-house energy management system, and have arranged a system for the smooth implementation of companywide CO<sub>2</sub> emissions reduction projects. Along with our efforts to follow up the effectiveness of investment in energy saving equipment that is incorporated in our business plan starting in the previous fiscal year, our Group as a whole is making efforts to reduce greenhouse gas emissions.

\* Low-carbon society: this is an ideal society that has greenhouse gas emissions no greater than the amount that can be absorbed by nature.



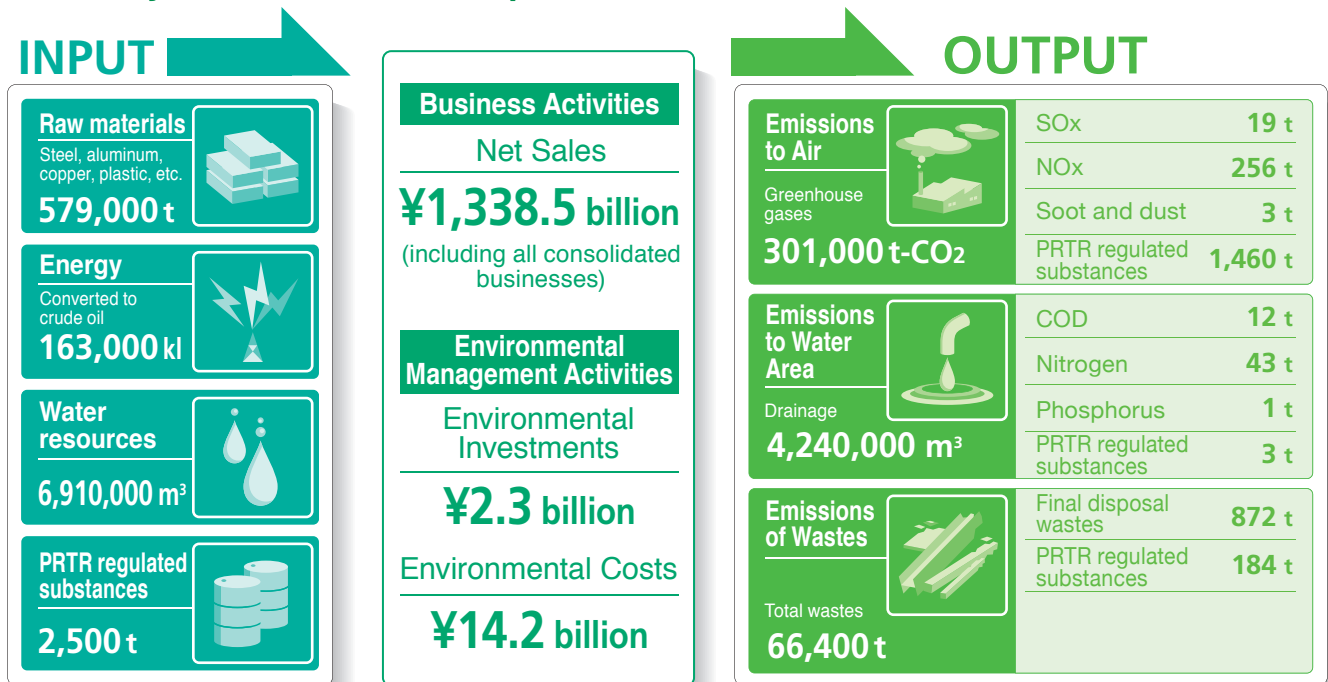
We are decreasing CO<sub>2</sub> emissions throughout the entire lifecycles of products

# Material Balance of Business Activities and Environmental Accounting



In the manufacture of various products, we are making efforts to reduce the amounts of the raw materials, energy and water that we use, as well as reduce the emissions of substances that are harmful to the environment.

## Summary of Environmental Impact in FY2008



## Environmental Accounting Calculations for FY2008

These data were compiled in accordance to the Environmental Accounting Guideline released by the Ministry of the Environment. Coverage: Kawasaki Heavy Industries, Ltd., and our three main subsidiaries.\* Period: April 1, 2008 to March 31, 2009

Item		Environmental Investments	Environmental Costs	Economic Effects	
Business area costs	Global warming prevention	860	2,215	Reduction of energy costs 231	
	Efficient use of resources	44	178	Reduction of materials costs 50	
	Resource recycling activities	Resource recycling activities	11	882	Income from recycling 1,796
		Waste disposal costs	11	192	Reduction of waste disposal costs 118
	Environmental risk control	698	1,034	—	
	Subtotal	1,625	4,501	2,195	
	Comparisons w/ previous FY	183%*	106%*	81%*	
Upstream/downstream costs		397	3,783	0	
Management activity costs		6	473	—	
R&D costs		151	5,174 <sup>*1</sup>	—	
Social activity costs		41	186	—	
Environmental damage compensation costs		47	73	—	
Total		2,266 <sup>*2</sup>	14,191	2,195	
Comparisons w/ previous FY		137%*	108%*	81%*	

\* Three main subsidiaries: Kawasaki Shipbuilding Corporation, Kawasaki Precision Machinery Ltd. and Kawasaki Plant Systems, Ltd.

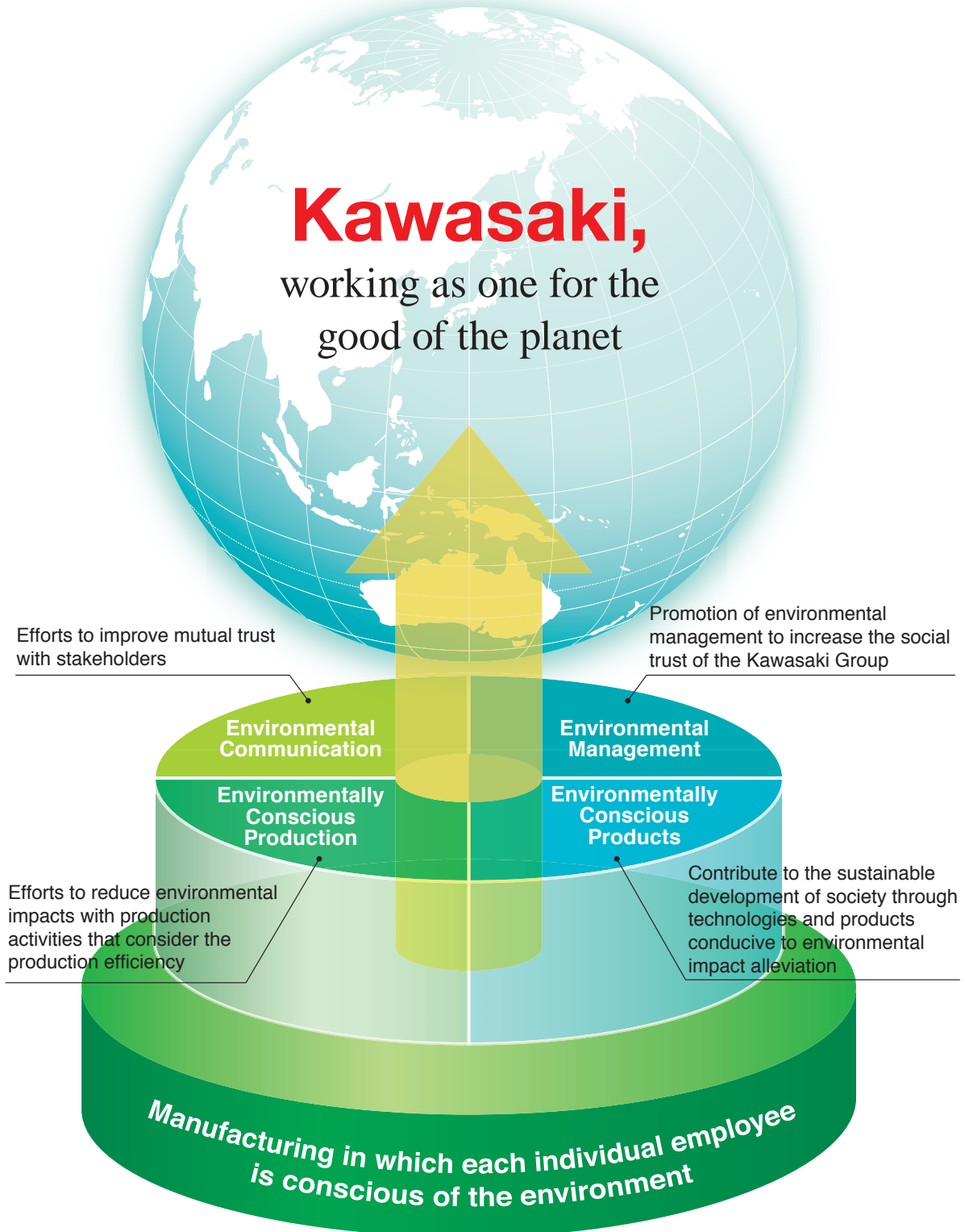
		Millions of Yen	
Item	Total		
Total investments in FY2008	57,588 <sup>*3</sup>		
Total R&D costs in FY2008	36,739 <sup>*4</sup>		

Item	Proportion
Percentage of investments (Environmental investments <sup>*2</sup> / Total investments <sup>*3</sup> )	4%
Percentage of R&D costs (Environmental R&D costs <sup>*1</sup> / Total R&D costs <sup>*4</sup> )	14%

# Achievements and Appraisal of Environmental Management Activities

We have been making efforts based on our 2010 Environmental Vision, which was established in 2003 with the aim of realizing “What Kawasaki Should Be in the Year 2010.” Currently, we are in the process of executing a three-year basic plan for 2008–2010. Timed along with the preparation of a new medium-term business plan for the Kawasaki Group as a whole, we have also begun creating a new 2020 Environmental Vision that, inheriting the spirit of the present 2010 Environmental Vision, defines “What Kawasaki Should Be in the Year 2020.” We will determine policies during FY2009, and we are in the process of work that we will explain in next year’s environmental report.



## Main achievements of FY2008

- (1) We made arrangements for the purpose of reducing CO<sub>2</sub> emissions (participation in a Japanese emissions trading system).
- (2) We almost completed the target of companywide development of environmental management systems, and we raised our management to a level that is able to implement continuous reform.
- (3) We undertook a variety of efforts for the realization of contribution to society through our products and technologies.

<b>Environmental Management</b>	<ol style="list-style-type: none"> <li>1) Implemented energy saving diagnoses and set basic unit per net sales</li> <li>2) Reduced latent risks through our environment-related equipment plan</li> </ol>
<b>Environmentally Conscious Products</b>	<ol style="list-style-type: none"> <li>1) Evaluated the reduction of environmental impacts at the stage of product use</li> </ol>
<b>Environmentally Conscious Production</b>	<ol style="list-style-type: none"> <li>1) Created waste emissions basic unit per net sales</li> <li>2) Prepared a plan for the reduction of VOCs and heavy metals (hexavalent chromium and lead)</li> </ol>
<b>Environmental Communication</b>	<ol style="list-style-type: none"> <li>1) Executed E-learning for Kawasaki and three main subsidiaries</li> <li>2) Held a stakeholder meeting about our Report - Environmental and Social Responsibility</li> </ol>

## Priority Initiatives for FY2009

Prepare a new 2020 Environmental Vision (FY2010–2020) and set new environmental targets for FY2012

<b>Environmental Management</b>	<ol style="list-style-type: none"> <li>1) Strengthen independent CO<sub>2</sub> emissions reduction efforts</li> <li>2) Make efforts for thorough compliance with environmental laws and regulations</li> </ol>
<b>Environmentally Conscious Products</b>	<ol style="list-style-type: none"> <li>1) Investigate methods to evaluate environmental impacts during the lifecycles of our main products</li> </ol>
<b>Environmentally Conscious Production</b>	<ol style="list-style-type: none"> <li>1) Reduce waste emissions using basic unit per net sales</li> <li>2) Reduce VOCs by 20%, reduce hexavalent chromium and lead by 45%, and reduce dichloromethane by 35%</li> </ol>
<b>Environmental Communication</b>	<ol style="list-style-type: none"> <li>1) Expand environmental E-learning to our subsidiaries</li> <li>2) Participate in Hyogo Prefecture's "corporate forest restoration project" efforts</li> </ol>

## Three-year plan (FY2008–2010)

<b>Environmental Management</b>	<p><b>Promotion of environmental management to increase the social trust of the Kawasaki Group</b></p> <ol style="list-style-type: none"> <li><b>1. Follow-up incorporated in the business plan of the Kawasaki Group</b> <ol style="list-style-type: none"> <li>1) Make efforts to reduce greenhouse gas emissions</li> <li>2) Reduce latent risks through environment-related equipment plan</li> </ol> </li> <li><b>2. Environmental risk management</b> <ol style="list-style-type: none"> <li>1) Conduct environmental conservation activities and risk management based on EMS</li> <li>2) Undertake risk management through review of risks in production and environmental equipment</li> <li>3) Establish environmental risk management systems</li> <li>4) Thoroughly comply with environmental laws, regulations, agreements, etc.</li> </ol> </li> </ol>
<b>Environmentally Conscious Products</b>	<p><b>Contribute to the sustainable development of society through technologies and products conducive to environmental impact alleviation</b></p> <ol style="list-style-type: none"> <li>1) Evaluate reduction of environmental impacts (CO<sub>2</sub>, SO<sub>x</sub>, NO<sub>x</sub>, etc.) in product lifecycles</li> <li>2) Expand provision of green products – Determine design and procurement guidelines to improve green procurement level in product composition</li> </ol>
<b>Environmentally Conscious Production</b>	<p><b>Efforts to reduce environmental impacts with production activities that consider the production efficiency</b></p> <ol style="list-style-type: none"> <li>1) Make efforts to reduce waste</li> <li>2) Reduce quantity of hazardous chemicals handled toward FY2010 target</li> </ol>
<b>Environmental Communication</b>	<p><b>Efforts to improve mutual trust with stakeholders</b></p> <ol style="list-style-type: none"> <li>1) Conduct internal environmental education and awareness-raising efforts</li> <li>2) Disclose information to stakeholders</li> <li>3) Actively cooperate in community environmental activities</li> </ol>

# Environmental Management Activities



We are striving to build an environmental management system (EMS) for the entire Kawasaki Group. In order to prevent environmental trouble from occurring, we are also making efforts to implement environmental risk management and employee education on the environment.

## Further Development of EMS

All the production bases of Kawasaki Heavy Industries and our three main subsidiaries\* in Japan have acquired ISO14001 certification. Now, we are promoting the development of EMS at our subsidiaries in Japan and abroad.

Among our subsidiaries in Japan, for example, Alna Yusoki-Yohin Co., Ltd. received ISO 14001 certification, and 41 of 49 of these companies had completed the establishment of an environmental management system by FY2008.

Of the 12 overseas companies where we are seeking to develop EMS, one more company, KMM Maryville, completed EMS development in FY2007. For the remaining six companies that do not yet have an EMS, based on local laws and regulations, we will clarify objectives according to business conditions and scale and set timeframes and otherwise implement incremental efforts for EMS development.

\* Three main subsidiaries: Kawasaki Shipbuilding Corporation, Kawasaki Precision Machinery Ltd. and Kawasaki Plant Systems, Ltd.

## EMS Establishment Lists

### Kawasaki Heavy Industries/Three main subsidiaries

	Internal Company		Date acquired	Registration
	Kawasaki Heavy Industries	Rolling Stock Company		2002
Aerospace Company		2002	BSK	
Gas Turbine & Machinery Company		Gas Turbine Division	2000	LRQA
		Machinery Division	2000	NK
Consumer Products & Machinery Company (including Robot Div.)		2000	DNV	
Industrial Facilities and Tunneling Equipment Div.		1999	JICQA	
Three main subsidiaries	Kawasaki Shipbuilding Corporation	Kobe Works	2002	DNV
		Sakaide Works	2000	DNV
	Kawasaki Precision Machinery Ltd.		1998	DNV
	Kawasaki Plant Systems, Ltd.		2001	NK

■ LRQA: Lloyd's Register Quality Assurance, JICQA: JIC Quality Assurance, NK: Nippon Kaiji Kyokai (ClassNK), BSK: Bouei Choutatsu Kiban Seibi Kyoukai (Defense Procurement Framework Establishment Association of Japan), DNV: Det Norske Veritas

### Subsidiaries in Japan

Oversight organization	Company	Establishment level	Date of establishment
Head office	Kawaju Tokyo Service Corp.	3	2009
	Kawasaki Trading Co., Ltd.	1	2004
	Kawaju Service Co., Ltd.	1	2000
	Kawaju Techno Service Corp.	3	2005
	Kawasaki Life Corporation	2	2006
	Kawasaki Hydromechanics Corp.	1	2007
	K Career Partners Corp.	2	2007
	Benic Solution Corp.	2	2006

Oversight organization	Company	Establishment level	Date of establishment
Head office	Kawasaki Machine Systems, Ltd.	1	2000
	KCM Corporation	1	2000
Rolling Stock	Alna Yusoki-Yohin Co., Ltd.	1	2008
	EarthTechnica M&S Co., Ltd.	1	2000
	Kawasaki Rolling Stock Component Co., Ltd.	1	2002
	Kawasaki Rolling Stock Technology Co., Ltd.	1	2002
	Kansai Engineering Co., Ltd.	3	2002
	Kawajyu Hyogo Service Co., Ltd.	3	2002
	EarthTechnica Co., Ltd.	1	2000
	Nichijo Manufacturing Co., Ltd.	3	2005
Industrial Facilities and Tunneling Equipment	Nisseki Service Consultant Co., Ltd.	2	2005
	Kawajyu Steel Work & Engineering Co., Ltd.	3	2006
Aerospace	Kawaju Facilittech Co., Ltd.	2	2007
	Kawaju Gifu Engineering Co., Ltd.	1	2002
Gas Turbine	Kawaju Gifu Service Co., Ltd.	1	2002
	KGM (Kawaju Gifu Manufacturing) Co., Ltd.	1	2002
Machinery	NIPPI Corporation	1	2006
	Kawaju Akashi Engineering Co., Ltd.	1	2000
Consumer Products & Machinery	Kawasaki Thermal Engineering Co., Ltd.	1	2002
	Kawasaki Prime Mover Engineering Co., Ltd.	1	2002
Kawasaki Shipbuilding Corporation	Kawasaki Naval Engine Service, Ltd.	1	2002
	K-GES Co., Ltd.	1	2006
	Kawasaki Oita Manufacturing Co., Ltd.	3	2008
	Kawasaki Motors Corporation Japan	1	2008
	Union Precision Die Co., Ltd.	1	2006
	Akashi Ship Model Basin Co., Ltd.	3	2008
Kawasaki Plant Systems	Kawasaki Techno Wave Co., Ltd.	1	2000
	Kawaju Kobe Support Co., Ltd.	2	2005
	Kawaju Marine Engineering Co., Ltd.	1	2008
	KHI JPS Co., Ltd.	3	2008
	Kawasaki Shipbuilding Inspection Co., Ltd.	2	2008
	KEE Environmental Construction, Co. Ltd.	1	2003
	KEE Environmental Service, Ltd.	1	2002

For our subsidiaries in Japan, we are promoting the establishment of EMS using three levels that we have set based on real conditions, in consideration of their characteristics including business contents, production activity scales and product features.

- Level 1** Acquire ISO 14001 certification or its equivalent
- Level 2** Acquire simplified EMS certification
- Level 3** Self-declaration of EMS establishment

### Subsidiaries Overseas

Oversight organization	Company	Date acquired	Registration
Consumer Products & Machinery	Kawasaki Motors Manufacturing Corp. Lincoln Plant (U.S.A.)	2003	DNV
	Kawasaki Motors Manufacturing Corp. Maryville Plant (U.S.A.)	2008	DNV
Robot	Kawasaki Robotics, Inc. (U.S.A.)	2006	DNV
Kawasaki Shipbuilding Corporation	Nantong Cosco KHI Ship Engineering Co., Ltd. (China)	2003	DNV
KPM	Kawasaki Precision Machinery (UK) Ltd. (U.K.)	2001	LRQA
	Flutek, Ltd. (South Korea)	2005	KMA
	Kawasaki Precision Machinery (Suzhou) Ltd. (China)	2007	BSI

■ DNV: Det Norske Veritas, LRQA: Lloyd's Register Quality Assurance, KMA: KMA R&A Inc., BSI: British Standards Institution

## Compliance with Laws & Regulations

### Violations and Accidents during the Past 5 Years

FY	2004	2005	2006	2007	2008
Judicial/Administrative Penalties	0	1	0	0	0
Administrative Measures	0	1	0	0	1
Administrative Warnings	0	0	6	4	3

- Judicial/Administrative Penalties: Punishment by judicial or administrative authorities
- Administrative Measures: Receiving instructions for improvements, etc. in written form
- Administrative Warnings: Receiving verbal directives concerning business practices

#### Administrative Measures

- Nitrogen oxide emissions from gas turbine power generation systems exceeded laws and regulations as well as environmental conservation agreements (Akashi Works)

#### Administrative Warnings

- N-hexane extract substances exceeded wastewater standards (Hyogo Works: 2 instances)
- Amount of wastewater and phosphorus concentration exceeded reported values (Akashi Works)

## Risk Management

### Responding to the administrative measures for exceeding nitrogen oxide emission standards

Our Akashi Works received a written remonstrance from Hyogo Prefecture for exceeding the nitrogen oxide emission standards of the Air Pollution Control Law and environmental conservation agreements.

We exceeded standards even as we were seeking to further advance our efforts for pollution prevention. In order to assure that it never occurs again, we established an investigation committee that included outside experts and other third-party members. This committee examined the causes and deliberated countermeasures to prevent recurrence. In addition, we established a companywide committee to investigate the status of compliance with environmental laws and regulations. They conducted on-site inspections of every company plant and promoted recurrence prevention countermeasures simultaneously throughout the company.

We will continue to strive to make our compliance with laws and regulations even more certain by implementing these countermeasures to prevent recurrence of such an incident.

## Education

### E-learning

In recognition of the global scale of environmental problems, we are clarifying the purposes of the efforts that we make for the environment during the conduct of our company business, along with contents about undertaking business activities and the manufacture of products that are better for the environment and other organizational efforts. In addition, we are also placing emphasis on contents that make employees understand the importance of conducting themselves with consideration for the environment during their individual work activities.

We had every employee possible, from the chairman, the president and other managers to temporary workers, participate in this computer-based education program. During FY2008, we provided this education to about 12,000 employees of Kawasaki Heavy Industries and our three main subsidiaries, achieving a participation rate of 96%.

### Raising awareness about the environment

We are conducting publicity activities with the goal of raising the environmental awareness of every individual employee. We are conducting these awareness-raising activities continuously to promote conduct that is considerate of the environment not only in the workplace, but also in local communities and households.



"Message from the President" about environmental management



Environmental News (released 4 times a year)



"Eco Mind" in our Group magazine Kawasaki (released 5 times a year)

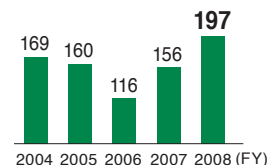
### Cultivation of Qualified Managers

In order to enhance our environmental management efforts, we are also focusing on the cultivation of individuals who have legal qualifications required by laws and regulations related to the environment.

#### Number of Qualified Pollution Control Managers

Air	75
Water	81
Noise, Vibration	53
Others	24
Total	233

#### Number of Newly Registered ISO 14001 Auditors (including subsidiaries)



#### Number of Qualified Energy Manager

61
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