

Environmental Management

Environmental Management

To realize our intentions to contribute to a sustainable society, we have an "Environmental Charter." Furthermore, we are promoting environmental management activities to fulfill our 2010 Environmental Vision: What Kawasaki Should Be in the Year 2010.

Environmental Charter

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 to 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 impacts.
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 impacts.
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.

Action Plan for Our 2010 Environmental Vision

In 2003, we established "What Kawasaki Should Be in the Year 2010" as the 2010 Environmental Vision of the Kawasaki Heavy Industries Group. This vision defines how the Kawasaki Group should be in the year 2010, and consists of five aspects—environmental philosophy, environmental management, environmentally conscious products, environmentally conscious production, and environmental communication.

products, environmentally conscious production, and environmental communication. In practice, we have been working to realize this vision through a series of three-year Environmental Management Activities Plans, the first of which began in FY1994.

Item	What Kawasaki Should Be in the Year 2010 (2010 Environmental Vision)	4th Environmental Management Activities Plan (FY2003-FY2005)
Environmental Philosophy	<ul style="list-style-type: none"> · Actions by all Kawasaki Group employees are taken with concern for the environment, not only at work, but also in their local communities and homes, in accord with our Environmental Philosophy, which declares our commitments to the realization of a sustainable society. 	<p>Provision of comprehensive education and training programs for promoting environmental consciousness</p> <ul style="list-style-type: none"> · The Environmental Handbook is scheduled to be issued in FY2004. · Promotion through IT of the environmental consciousness of all employees · Continued education activities about environmental issues for employees
Environmental Management	<ul style="list-style-type: none"> · Implementation of an Environmental Management System (EMS) and action are taken based on this EMS by all Kawasaki Group employees. · Incorporation of environmental considerations into the business management of each internal company enhances their environmental management levels. · An environmental management information system is created. 	<p>Environmental management to increase social trust</p> <ul style="list-style-type: none"> · Support for promotion and creation of EMS for consolidated subsidiaries · Establishment of techniques for analyzing environmental management activities · Provision of management-related environmental information to Kawasaki management · Utilization of IT for acquiring and managing environmental data
Environmentally Conscious Products	<ul style="list-style-type: none"> · Design for Environment (DfE) is used for all products to enhance their environmental efficiency. · Products are offered that help protect the environment, thus contributing to the environment, society and businesses. 	<p>Contribution to the sustainable development of society through technologies and products that help protect the environment</p> <ul style="list-style-type: none"> · Application of Design for Environment (DfE) (product assessment, LCA, etc.) for major products · Promotion of green procurement systems in order to expand the scope of goods purchased through green procurement · Enhancement of supply of products that promote environmental protection and reduce environmental impact
Environmentally Conscious Production	<ul style="list-style-type: none"> · Administrative penalties and administrative provisions are avoided, and voluntary control standards based on the needs of society are established to improve our environmental management level. · Every production activity is free of irrationality and waste to enhance the efficient utilization of resources and energies. · Total greenhouse gas emissions amount in FY2010 is reduced by 6% relative to the FY1990 level. · Total waste production in FY2010 is reduced by 10% relative to the FY2000 level. · Maintenance of zero emissions (recycling rate 100%) is realized in all works. · The use of harmful chemical substances is reduced. 	<p>Strict compliance with environmental laws, regulations and agreements</p> <ul style="list-style-type: none"> · No administrative penalty, administrative provision, resident complaint, etc. · Setup of voluntary control standards that addresses social needs <p>Promotion of environmental impact alleviation in production activities</p> <ul style="list-style-type: none"> · Examination of programs for measuring and reducing the amounts of resources and energy input in production processes · Reduction in total emissions of greenhouse gases to FY1990 level (reduction of 9,500 t of CO₂) · Reduction in total waste production by 5% relative to the FY2000 level (reduction of 3,500 t) · Realization of zero emissions in all works by the end of FY2004 · Implementation of hazardous chemical substances reduction program
Environmental Communication	<ul style="list-style-type: none"> · Kawasaki Environmental Reports that comply with the needs of society are published. · Communication with stakeholders is promoted. · The entire corporation and all employees are committed to environmental improvement in local communities. 	<p>Improvement of social trust in Kawasaki for sustainable development</p> <ul style="list-style-type: none"> · Information disclosure of environmental data · Promotion of communications with stakeholders · Positive cooperation in environmental activities of national and local governments

Development into 3-year
Environmental Management Activities Plan



Message from the Chief Environmental Officer



Shuji Mihara

Chief Environmental Officer
Executive Officer

Aspiring to Be a Sustainable Enterprise with Social Trust

I am not going too far when I say that in the 21st century - the "Environment Century" - environmental and energy-related problems, such as global warming, will have top priority among the issues that we must deal with assertively.

Not only the government of every country but every enterprise and individual is challenged to think, from a variety of perspectives, about what they need to do to attain symbiosis with the global environment.

Enterprises, in particular, must conduct business activities based on energy and resource conservation in order to realize an affluent, well-balanced and sustainable society.

We see this as an opportune time for Kawasaki to develop new technologies and offer products to protect the environment while, at the same time, reducing the environmental impacts during the production process, so that we can improve our corporate image and become a trustworthy and sustainable enterprise.

Regarding the 4th Environmental Management Activities Plan, which commenced in FY2003, three additional divisions achieved zero emissions (no disposal of waste as landfill); so now a total of 8 divisions out of 12 achieved this objective.

In FY2003, we standardized the method for managing greenhouse gas emissions, and assigned to each of our divisions a goal of further decreasing emissions. In addition, as a step toward establishing an Environmental Management System (EMS) for our consolidated affiliates, we established the Kobe Environmental Management System (KEMS) in collaboration with the City of Kobe and other organizations. KEMS stresses

the substantial points so that comparatively smaller organizations can implement it more easily and more effectively than ISO 14001.

The 4th Environmental Management Activities Plan is now steadily making progress. In FY2004, we will continue to expand the following activities with the goal of being a trustworthy and sustainable enterprise:

- Expansion of the application of Environmental Management System (EMS) throughout Kawasaki Heavy Industries Group's consolidated affiliates
- Incorporation of an integrated management system for environmental data that will enable effective environmental impact assessment by management
- Promotion of waste reduction and recycling activities: Realization of "Zero emissions" at all the domestic works and offices
- Establishing a draft plan for reducing usage of hazardous chemical substances
- Strengthening of our environmental risk management system in view of environmental regulation trends

I believe that, in pursuing these activities, the most important thing is "for every employee of the Kawasaki Heavy Industries Group to always act with the environment in mind not only at the company but in their communities and at home."

Only when all our employees have a strong environmental consciousness, society will recognize us as "an enterprise that contributes to the protection of the global environment" and purchase our products because they are made by Kawasaki everybody trusts, elevating our corporate image in society.

We should all reconsider the environmental impact of what we do at the company and at home, starting with things we can do beginning with the most familiar issues.

A company, whose employees voluntarily and proactively address various social problems including environmental issues, will enjoy favorable recognition from society and be capable of sustainable growth.

Much like with safety issues, if any of us fail to be conscious of environmental issues, something disastrous is bound to happen.

Let us all ask ourselves what we can or must do regarding waste reduction, the economical and moderate use of water, electricity and air conditioning, as well as compliance with environmental regulations, whether we are at the company, in our communities or at home.

Organization for Environmental Management

The organization for environmental management for all of Kawasaki is illustrated schematically to the right. Internal company systems are applied to environmental management activities so that environmental protection programs suitable to the products manufactured by each internal company are promoted. An Environmental Management Officer, an Environmental Protection Officer and a manager responsible for environmental protection are assigned to every internal company, every affiliate and the technical institutes.



Environmental Management

Key Measures and Evaluations for FY2003

4th Environmental Management Activities Plan—FY2003 Plan and Achievements, and Key Measures for FY2004

FY2003 marked the first year of the 4th Environmental Management Activities Plan, which is a three-year plan. In this year, to fulfill our 2010 Environmental Vision, "What Kawasaki Should Be in the Year 2010," measures were developed and executed along five themes. The achievements in this year are summarized below.

Other than the increase in greenhouse gas emissions due to increase in production (despite environmentally conscious production), the targets that were not achieved are responded to as key measures for FY2004.

*Evaluation criteria:◎...Target was fully achieved. ○...Target was almost fully achieved. △...Target was not achieved despite positive efforts.

Item	FY2003 Plan	Evaluation Result	FY2003 Achievements	FY2004 Key Measures
Environmental Philosophy Provision of comprehensive education and training programs for promoting environmental consciousness	<ul style="list-style-type: none"> ①Preparation of draft of "Environmental Handbook" ②Execution of environmental education utilizing Information Technology ③Continued reporting of environment-related topics, and enhancement of topic details 	<ul style="list-style-type: none"> △ △ ○ 	<ul style="list-style-type: none"> ①Employee environmental consciousness questionnaire (see page 9) ②Examination of environmental education system ③Environmental News, in-house magazine "Kawasaki" (see page 9) 	<ul style="list-style-type: none"> ·Publication of "Environmental Handbook" ·Trial execution of environmental education by e-learning ·Continued reporting
Environmental Management Environmental management to increase social trust	<ul style="list-style-type: none"> ①Development of program for creating EMS for affiliates ②Study of environmental management indexes ③Regular publication of Environmental Management Information ④Feasibility study for online environmental data acquisition 	<ul style="list-style-type: none"> △ △ ○ ○ 	<ul style="list-style-type: none"> ①Participation in start-up of Kobe version of EMS certification system ②Study of management indexes (proposal) ③Publication of environmental management information: twice/year ④Execution of demonstration of management system 	<ul style="list-style-type: none"> ·Support for affiliates in introducing EMS ·Determination of environmental management indexes and trial for evaluation ·Continued publication of Environmental Management Information ·Introduction of management system
Environmentally Conscious Products Contribution to the sustainable development of society through technologies and products that help protect the environment	<ul style="list-style-type: none"> ①Application of Design for Environment (DfE) to major products ②Study for formulation of green procurement rules ③Expansion of scope of environmentally conscious products being supplied 	<ul style="list-style-type: none"> ○ ○ ○ 	<ul style="list-style-type: none"> ①"Product assessment" (see page 11) "Life Cycle Assessment" (see page 11) ②"Creation of Management System for Substances with Environmental Impacts" for communication with customers of consumers products and machinery via the Internet (started in March 2004) (see page 11) ③Supply examples (see pages 12 through 18) 	<ul style="list-style-type: none"> ·Expand scope of application of DfE ·Formulation of green procurement rules for subcontractors
Environmentally Conscious Production Strict compliance with environmental laws, regulations and agreements	<ul style="list-style-type: none"> ①No administrative penalty, administrative provision, resident complaint, etc. ②Study of voluntary control standards 	<ul style="list-style-type: none"> △ ○ 	<ul style="list-style-type: none"> ①One complaint from residents (see page 9) ②Establishment of voluntary water quality control standards 	<ul style="list-style-type: none"> ·No administrative penalty/provision, resident complaint, etc. ·Establishment of voluntary air quality control standards
Environmentally Conscious Production Promotion of environmental impact alleviation in production activities	<ul style="list-style-type: none"> ①Energy and material flow evaluation and planning for major processes ②Total emissions of greenhouse gases from all of Kawasaki: 1% or greater decrease relative to the FY2002 level ③Waste production from all of Kawasaki: 2% or more decrease relative to the FY2000 level ④Achievement of zero emissions at Kobe Works Machinery Division and Akashi Works ⑤Hazardous chemical substances: development of chemical substance decrease plan, including study for alternative substances ·PCB-containing equipment: development of plan for total ban 	<ul style="list-style-type: none"> ○ △ ◎ ◎ ○ 	<ul style="list-style-type: none"> ①Start of management by energy flow (Gas Turbines & Machinery Company) ②Increase of 6.2% relative to FY2002 level (see page 19) ③Decrease of 3.3% relative to FY2000 level (see page 20) ④Fulfillment at Kobe Works, Akashi Works, Seishin Works, Tokyo Head Office and Tokyo Design Office (see page 20) ⑤Each division considered and executed decrease in use of the following substances: <ul style="list-style-type: none"> ·Dichloromethane, fluorine, lead, hexavalent chromium, etc. ·Tar epoxy coating ·Each division developed a plan for total ban of PCBs. 	<ul style="list-style-type: none"> ·Trial execution of energy flow technique ·Total CO₂ emissions from all of Kawasaki: decrease of 2.6% or more relative to FY2003 level (total 265,800 t-CO₂) ·Total waste production from all of Kawasaki: decrease of 3.5% or more relative to FY2000 level (total 66,300 t) ·Zero emissions at all works: fulfillment in FY2004 ·Hazardous chemical substances: promotion of decreased use ·PCB-containing equipment: promotion of total ban
Environmental Communication Improvement of social trust in Kawasaki for sustainable development	<ul style="list-style-type: none"> ①Continued publication of environmental report, inclusion of data by site and major affiliates ②Establishment of system for risk communication with stakeholders ③Promotion of environmental volunteer activities in local communities 	<ul style="list-style-type: none"> ◎ ○ ○ 	<ul style="list-style-type: none"> ①Disclosure of information about environmental data for all of Kawasaki (see pages 23 - 26) ②Execution of risk communication training according to PRTR (see page 9) ③Actual activities (see page 21). 	<ul style="list-style-type: none"> ·Additional information disclosure to improve social trust from society ·Continued enhancement of system for risk communication with stakeholders ·Continued activities for contribution to communities



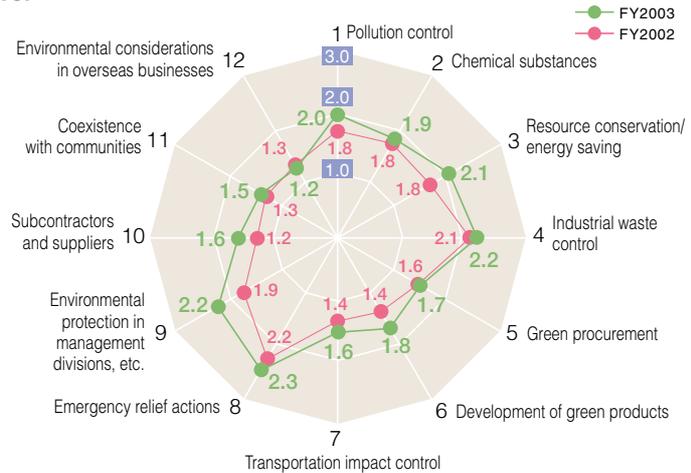
Voluntary Evaluation of Kawasaki's Environmental Level

In order to evaluate the FY2003 environmental protection activities, the results of the self-evaluations of all of the divisions were used to calculate corporate-wide averages. The results are shown in the radar chart to the right. Improvements were made in the following indexes, which were judged as areas where "more efforts are needed" in last year's evaluation.

- Development of green products (6)
- Transportation impact control (7)
- Subcontractors and suppliers (10)
- Coexistence with communities (11)

However, compared with other indexes, the above indexes still need further improvement. In particular, the "Environmental considerations in overseas businesses" index needs much more effort.

Our self-evaluation for environmental protection activities began in FY1999 according to the evaluation guidelines stipulated in the industry. All of our divisions had acquired ISO 14001 certification by FY2002. Since then, our self-evaluation of environmental protection activities has been based on our own "Kawasaki's Environmental Activities Evaluation Guide" that focuses on actual environment-related activities.



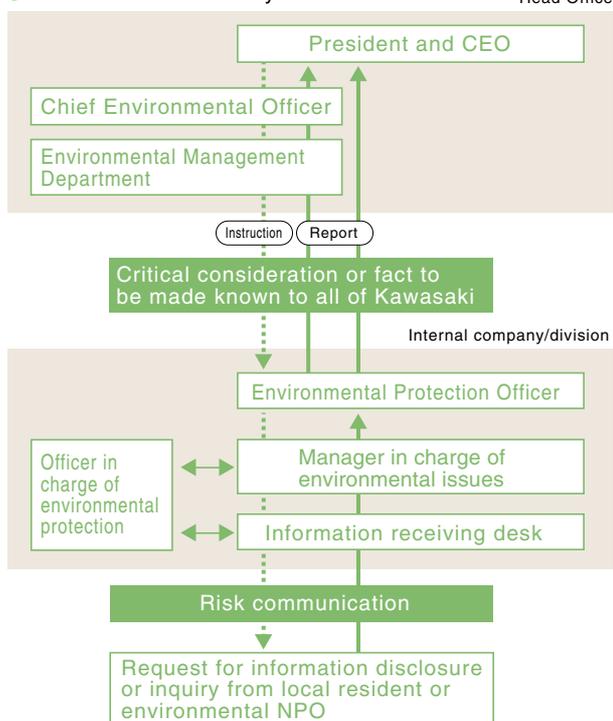
Environmental Management System (EMS)

Risk Management

While environment-related laws and regulations are being enhanced or newly enacted, each internal company is fully involved in risk management so that established EMS functions satisfactorily and environment-related trouble is avoided.

The risk communication system for information disclosure is illustrated schematically below. A request or inquiry from local residents or environmental NPOs is received by the environmental management section of each internal company or division involved, which then determines and provides an appropriate response. A critical consideration or fact that should be known by all of Kawasaki is reported to Head Office and at that time, instructions are sought as necessary.

Risk Communication System



ISO 14001 Certification

All our works in Japan have already acquired ISO 14001 certification, and established EMS.

The year and month of certification and the reviewing & registering organization for each internal company and affiliate are summarized below.

Company	Division	Date acquired	Registration
Rolling Stock, Construction Machinery & Crushing Plant Company	Rolling Stock Division	2002.2	LRQA
	Construction Machinery Division	2000.5	JICQA
	Crushing Plant Business Division	2000.9	NK
Aerospace Company	Aerospace Company	2002.2	BSK
Gas Turbines & Machinery Company	Gas Turbine Division	2000.3	LRQA
	Machinery Division	2000.12	NK
Plant & Infrastructure Engineering Company	Power Plant & Industrial Plant Engineering Division	2001.2	NK
	Environmental Control Plant Division	1999.3	NK
	Steel Structure & Industrial Equipment Division	1999.11	JICQA
Consumer Products & Machinery Company	Consumer Products & Machinery Company	2000.2	DNV
Affiliates	Kawasaki Shipbuilding Corporation		
	Kobe Works	2002.8	NK
	Sakaide Works	2000.8	DNV
	Kawasaki Precision Machinery Ltd.	1998.2	DNV

Registering organization: LRQA: Lloyd's & Register Quality Assurance
 JICQA: JIC Quality Assurance
 NK: Nippon Kaiji Kyokai (ClassNK)
 BSK: Japan Defence Association
 DNV: Det Norske Veritas

Environmental Management

■ Environmental Audit

- Three types of complimentary environmental audits are performed.
- (1) Environmental Management Hearing held by Environmental Management Department with all the internal companies and divisions.
 - (2) Internal Environmental Audits performed by each internal company and division within the scope of their EMS.
 - (3) ISO 14001 EMS audit conducted by an outside reviewing and registering organization.

● Improve the quality of EMS of the entire Kawasaki Group



■ Compliance with Laws and Regulations, and Pollution Prevention

In FY2003, there was one complaint from local residents about an obnoxious odor released from Shiga Combustion Laboratory (the Plant & Infrastructure Engineering Company). A measure to prevent recurrence of this problem has already been implemented. No problems were subject to administrative warning or more serious government action.

● Violations, Accidents and Complaints in the Past 5 Years

FY	1999	2000	2001	2002	2003
Judicial or administrative penalty	0	0	0	0	0
Administrative provision	4	0	0	0	0
Administrative warning	0	1	1	3	0
Resident complaints	2	0	4	2	1

Judicial or administrative penalty: Punishment by judicial or administrative authorities
 Administrative provision: Instructions imparted in writing (e.g. improvement order, etc.)
 Administrative warning: Verbal warning

■ Environmental Education

Other than the environmental education programs held at each internal company and division, Kawasaki holds internal environmental audit training courses at regular intervals. The internal environmental auditors trained and qualified in FY2003, including those at affiliates, amounted to 137 persons. The number of people legally qualified for environmental protection is summarized in the tables to the right.

● Number of Qualified Pollution Control Managers

Air	72
Water	76
Noise	33
Vibration	24
Others (Dust, Senior Managers)	17
Total	222

● Number of Qualified Energy Managers

Heat	20
Electricity	20
Total	40

● Risk Communication Training

We are committed to responding quickly to information disclosure requests as well as to the establishment of good communications with local residents and other stakeholders.

In FY2003, as part of an effort to build an in-house system for information disclosure as stipulated in the PRTR law, we held a training session for personnel in charge of environmental affairs from our internal companies and divisions to deepen their understanding of information disclosure.



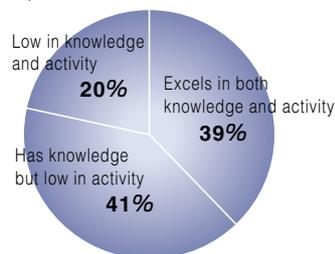
Training session

● Execution of Kawasaki Employee Environmental Questionnaire

We investigated the awareness of and actions for environmental protection of all Kawasaki employees. As a result, we learned that their environmental consciousness is high and that they often undertake environmental protection activities at their job sites. Nevertheless, their understanding of company-wide activities remains low and they do not often participate in environment-related events.

Considering these results, we intend to promote further environmental education activities.

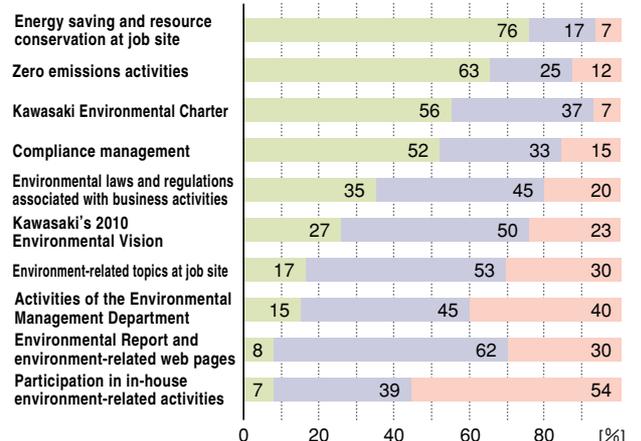
● Environmental consciousness levels of employees in daily life



● Promotion of Environmental Awareness

To promote the environmental awareness of our employees, we publish Environmental News four times a year. The quarterly in-house magazine "Kawasaki" also has an environmental feature called Eco-mind.

● Environmental Awareness at Work



Environmental News



Environmental topics page in in-house magazine "Kawasaki"



Environmental Accounting

In accordance with the "Environmental Accounting Guidebook" issued by the Japanese Ministry of the Environment, we have attempted to provide an easy-to-understand presentation of our environmental accounting calculations for FY2003, focusing on the formulation of indexes for use by internal management. Based on the calculation results, we evaluated the environmental investments and costs for

maintaining environment-related equipment, economic effects, and the amounts of substances decreased. We analyzed and assessed the contributions of various investments and costs to actual decreases in substance amounts in order to develop more cost-efficient and effective environmental protection measures.

- Coverage: Domestic works and offices of Kawasaki Heavy Industries, LTD., Kawasaki Shipbuilding Corporation and Kawasaki Precision Machinery Ltd. (KPM)
- Period: April 1, 2003 to March 31, 2004

Calculation Results for FY2003 Environmental Accounting

Unit: million yen

Category	Sub-category	Item Details	Environmental investments	Environmental costs	Economic effect	Amount of substance decreased () indicates an increase.	
Business area cost	Global warming prevention (energy saving, decrease in greenhouse gas emissions, ozone layer protection, etc.)		42.3	1,159.4	Reduction of energy costs by saving 932.8	Total greenhouse gas emissions 272,883 t-CO ₂ Targeted emissions reduction 2,600 t-CO ₂ Actual emissions reduction (15,922) t-CO ₂	
	Efficient use of resources (raw materials, water, etc.)		2.7	143.7	Reduction of materials costs by resource conservation 130.6	Total material input 466,435 t Reduction in material input 19,939 t Total water consumption 7,156,000 m ³ Reduction in water consumption (163,000) m ³	
	Resource recycling activities	●Resource recycling activities	18.3	428.7	Income from recycling 746.9	Total waste emissions 66,395 t Targeted emissions reduction 1,400 t Reduction in emissions 565 t	
		●Waste disposal cost	26.3	685.7	Reduction of waste disposal costs 22.2	Amount of waste recycled 62,209 t Recycling rate 94 %	
	Risk control (pollution control, compliance management)		399.0	966.2	—	Total SOx emissions 18.1 t Reduction in emissions 4.5 t Total NOx emissions 98.3 t Reduction in emissions 62.2 t Total COD emissions 16.6 t Reduction in emissions 0.2 t	
	Subtotal		488.6 *1	3,383.7	1,832.5	—	
	[Comparison with previous FY]		[59%]	[124%]	[305%]	—	
	Upstream/ downstream costs	Assessment, improvement for environmentally conscious products and green procurement		266.6	2,745.7	0.1	—
		Recovery, recycling, reuse and adequate disposal of products		0.0	0.1	0.0	—
		Reduction of environmental impacts from containers and packing materials		0.0	0.0	44.2	—
Subtotal		266.6	2,745.8	44.3	—		
Management activity cost	Management activities	●Environmental education	0.0	82.1	—	—	
		●Environmental Management Systems	0.0	347.2	—	—	
		●Environmental impact monitoring	0.0	63.5	—	—	
	Subtotal		0.0	492.8	—	—	
R&D activity cost	Research & development (alleviation of environmental impacts of products and during manufacture)		28.4	2,894.2 *2	—	—	
Social activity cost	Social activities	●Improvement of environment, contribution to communities	1.7	44.1	—	—	
		●Information disclosure	0.0	24.8	—	—	
	Subtotal		1.7	68.9	—	—	
Environmental damage cost	Countermeasures against ground water pollution		6.2	39.8	—	—	
Total		791.5 *3	9,625.2	1,876.8	—		
[Comparison with previous FY]		[65%]	[103%]	[297%]	—		

Item	Sum
Total plant and equipment investments for the entire company in the applicable period*4	28,344.8
Total R&D costs for the entire company in the applicable period*5	13,856.9
Percentage of environmental investment (Sum of environmental investments*3/Total plant and equipment investments for entire company*4)	3%
Percentage of R&D costs (Total environmental R&D costs*2/Total R&D costs for entire company*5)	21%
Percentage of environmental investments within business area (Sum of environmental investments in business area*1/Sum of environmental investments*3)	62%