

Theme 4 Environmental activities

We will pursue "manufacturing that makes the Earth smile."

Global Environment: We aim to realize a low-carbon society, a sound material-cycle society, and a society coexisting with nature.

Promoting Environmental Management

Establishment of 2020 Environmental Vision

In fiscal 2011, we drafted 2020 Environmental Vision, which seeks to define what the Group should be in 2020 from an environmental perspective under our Group Mission: "Kawasaki, working as one for the good of the planet (Enriching lifestyles and helping safeguard the environment: Global Kawasaki)." Realization of this vision will be supported by environmental management activities plans, which run for three years. We embarked on the 7th Environmental Management Activities Plan in fiscal 2011, at the same time that 2020 Environmental Vision was launched, with targets to achieve during this three-year period and key strategies to implement in each year of the plan. Based on the environmental philosophy described in our Environmental Charter, 2020 Environmental Vision will underpin the establishment of three types of societies—a low-carbon society, a sound material-cycle society, and a society that coexists with nature. A fourth component—the establishment of

environmental management systems—forms the cornerstone of such societies. Through our 2020 Environmental Vision, we aim to contribute to integrating business management and environmental management activities and contribute to a sustainable society.

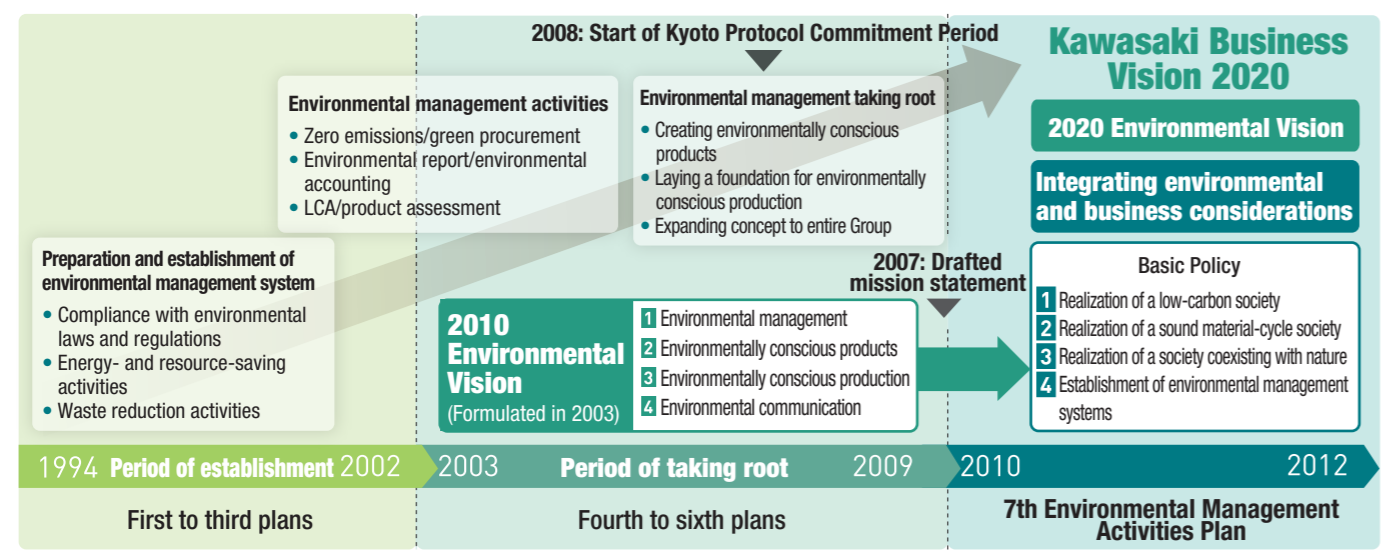


Achieving 2020 Environmental Vision

The 7th Environmental Management Activities Plan, which inaugurated the 2020 Environmental Vision, runs from fiscal 2011 through fiscal 2013. This plan sets out four themes—the realization of a low-carbon society, the realization of a sound

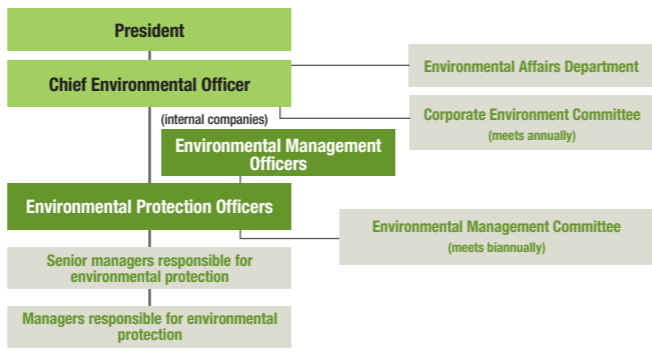
material-cycle society, and the realization of a society coexisting with nature, as well as the establishment of environmental management systems to serve as a foundation for environmental management—that will enable us to realize our vision.

Flow of Environmental Management



Environmental Management Organization

The director for environmental issues at KHI is appointed Chief Environmental Officer and in this position chairs the Corporate Environment Committee, which deliberates and decides on operations of a variety of important matters related to the environment. To enable each internal company to independently promote the environmental management activities plan as designed, environmental management officers, environmental protection officers, and senior managers responsible for environmental protection are appointed to match the structure of each internal company with such activities. Furthermore, organization systems are in place to facilitate a coordinated effort among all employees to implement environment-oriented initiatives.



7th Environmental Management Activities Plan (Fiscal 2011–Fiscal 2013)	Priority Initiatives for Fiscal 2012
<p>Realization of a low-carbon society Contribute to the prevention of global warming through our products and manufacturing that use energy without waste</p> <p>(1) Global warming prevention measures</p> <p>A) Reduce CO₂ emissions from our own production activities</p> <ul style="list-style-type: none"> Make CO₂ more tangible to promote energy-saving activities Groupwide; create a verification system Undertake Groupwide CO₂ reduction measures (energy-saving capital investment) Promote energy savings from logistics as a specified consignor <p>B) Acquire emissions credits with KHI Group products and technologies</p> <ul style="list-style-type: none"> Create a system to acquire emissions credits with KHI Group products and technologies in Japan and abroad (e.g., CDM) <p>C) Purchase emissions credits from trading market</p> <ul style="list-style-type: none"> Take precautionary measures in the event we do not meet CO₂ reduction targets <p>D) Acquire emissions credits by endowment or donation</p> <p>Group target: By fiscal 2013, reduce our average amount of CO₂ basic unit (= CO₂ emissions per net sales) for fiscal 2009 through fiscal 2013 by 10%, compared with fiscal 2008</p>	<p>1. Global warming prevention measures</p> <p>A) Reduce CO₂ emissions from our own production activities</p> <ul style="list-style-type: none"> Introduce system to make CO₂ emissions tangible (includes response to Revised Energy-Saving Law); operate system at pilot plant and collect and distribute energy-saving know-how in-house; operate corporate data system and promote tangible system at factories Undertake Groupwide CO₂ reduction measures (energy-saving capital investment) Implement energy-saving capital investment (factory and office lighting, energy-saving inverters) and verify the results of such energy-saving measures Strengthen energy-saving activities in each segment and follow through on plans Establish corporate energy-saving promotion structure <p>B) Acquire emissions credits with KHI Group products and technologies</p> <ul style="list-style-type: none"> Consider responses to new measures that fight global warming <p>C) Purchase emissions credits from trading market</p> <ul style="list-style-type: none"> Examine burden of purchasing portion of reduction targets not achieved <p>D) Acquire emissions credits by endowment or donation</p> <ul style="list-style-type: none"> Study forest conservation activities, use of green electric power, etc.
<p>Realization of a sound material-cycle society Engage in manufacturing that uses resources without waste in order to recycle and fully utilize limited resources</p> <p>(1) Activities to reduce total waste emissions</p> <p>i) Promote resource savings and 3R (reduce, reuse, recycle)</p> <p>ii) Zero emissions activities, increasing recycling rate</p> <p>Group target: By fiscal 2013, reduce waste basic unit (= waste emissions per net sales) by 12%, compared with fiscal 2003; maintain zero emissions</p> <p>(2) Decide on proper treatment plan for PCB wastes and follow through with appropriate measures</p>	<p>1. Activities to reduce total waste emissions</p> <p>1) Activities to reduce three substances with greatest waste emissions (metal scrap, waste oil, wood scrap)</p> <p>2) Promote resource saving, 3R</p> <p>3) Maintain and enhance zero emissions status</p> <p>4) Promote implementation of electronic manifests</p> <p>5) Establish and operate waste management system (incorporated into electronic manifests)</p> <p>2. Decide on proper treatment plan for PCB wastes and follow through with appropriate measures</p> <p>1) Follow through on JESCO commissioned processing</p> <p>2) Follow through on processing trends and number of processed units of equipment containing low-density PCBs</p>
<p>Realization of a society coexisting with nature Contribute to reduced environmental impact and conservation of the ecosystem through manufacturing that is in harmony with the global environment</p> <p>(1) Activities to reduce chemical substances</p> <ul style="list-style-type: none"> Set reduction targets and promote activities (both design and production initiatives) <p>Group target: Set controlled chemical substances reduction target for fiscal 2011 through fiscal 2013, compared with average for fiscal 2004 through fiscal 2006</p> <p>(2) Environmental contributions through products and technologies</p> <p>i) Activities to reduce environmental impact over product life cycle</p> <ul style="list-style-type: none"> Prepare foundation for performing product life cycle assessment <p>ii) Make products greener</p> <ul style="list-style-type: none"> Promote environmental consciousness in products <p>(3) Reduce impact on and conserve biodiversity</p> <p>i) Decide on biodiversity action guidelines and promote conservation</p>	<p>1. Activities to reduce chemical substances</p> <p>1) Perform critical point follow-through in departments stepping up reduction measures in 7th Plan</p> <ul style="list-style-type: none"> Acknowledge and organize usage status, clarify issues and set targets Promote implementation and follow through with low-VOC paints as well as heavy-metal-free painting and surface-processing technologies <p>2. Environmental contributions through products and technologies</p> <p>1) Activities to reduce environmental impact over product life cycle</p> <ul style="list-style-type: none"> Assess CO₂ reduction effects on products related to energy and transportation Consider evaluation techniques for life cycle assessment Report environmental contributions from products and technologies <p>2) Make products greener</p> <ul style="list-style-type: none"> Respond thoroughly to laws and regulations (RoHS Directive, REACH Regulations, etc.) Set standards for green products and boost sales of such products <p>3. Activities to protect biodiversity</p> <p>1) Set corporate policy on initiatives and follow through with appropriate measures</p>
<p>Establishment of environmental management systems Build a foundation for environmental management that will realize the 2020 Environmental Vision</p> <p>(1) Build EMS for KHI Group</p> <p>Group target: Finish building EMS at consolidated subsidiaries in Japan and abroad that are key production bases by fiscal 2013.</p> <p>(2) Thoroughly comply with environmental laws and regulations</p> <ul style="list-style-type: none"> Prevent recurrence of environmental accidents, etc. <p>(3) Practice environmental communication</p> <ul style="list-style-type: none"> Promote environmental dialog with all stakeholders 	<p>1. Build EMS for KHI Group</p> <p>1) Devise and promote a plan for building EMS at consolidated subsidiaries in Japan and abroad</p> <ul style="list-style-type: none"> In fiscal 2012, introduce EMS at five domestic subsidiaries and five overseas subsidiaries <p>2) Collect major environmental data for entire Group (energy, waste, chemical substances, etc.)</p> <ul style="list-style-type: none"> Collect information from Group companies on energy/CO₂ emissions and disclose data to public In fiscal 2012, collect environmental data from 46 domestic subsidiaries and 24 overseas subsidiaries <p>2. Thoroughly comply with environmental laws and regulations</p> <p>1) Activities of Environmental Law and Regulation Compliance Status Review Committee</p> <p>2) Follow up on environmental law revisions, etc., and implement throughout the Group</p> <p>3. Practice environmental communication</p> <p>1) Awareness-raising activities for KHI Group employees (environmental education)</p> <p>2) Disclose environmental data within and beyond Group (issue environmental news, CSR Report, etc.)</p> <p>3) Company forest restoration program</p>

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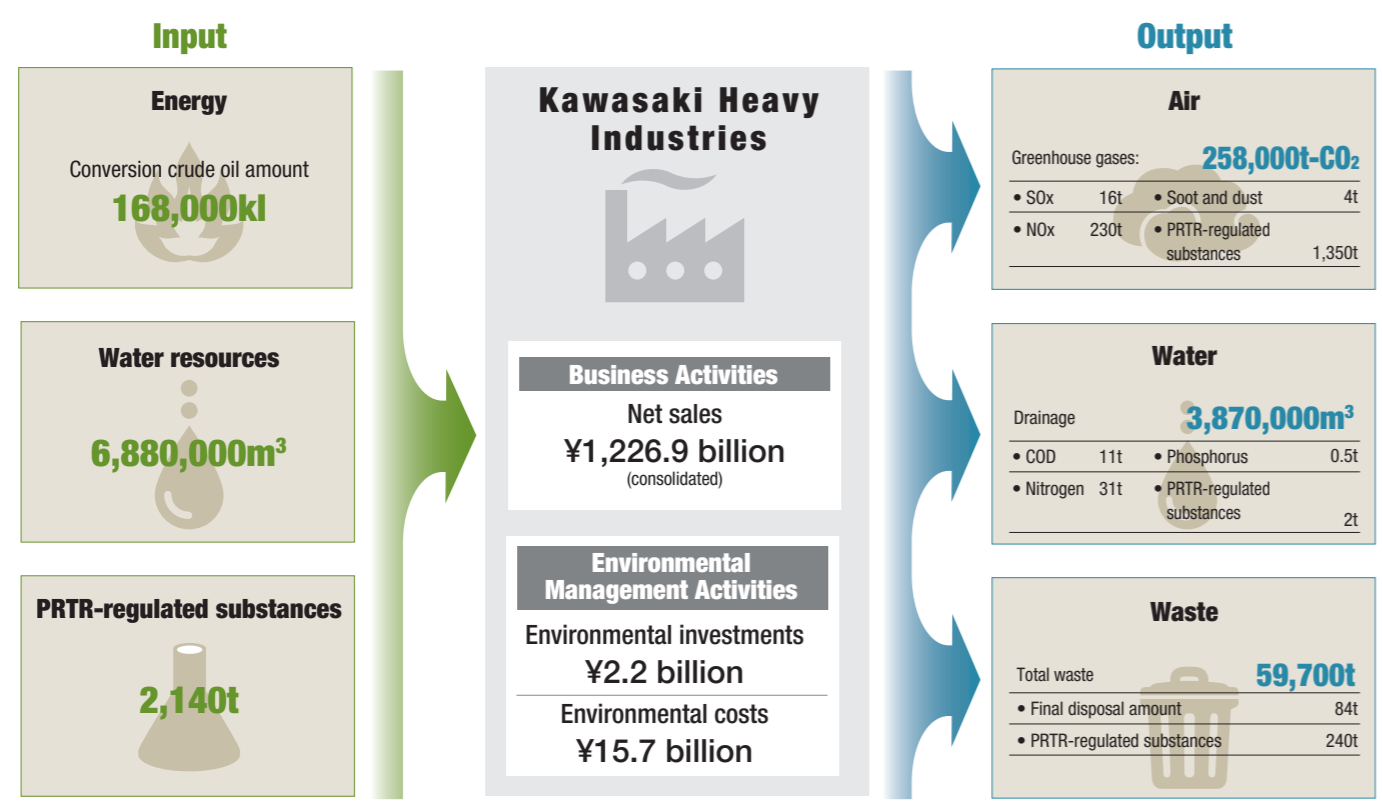
We will pursue "manufacturing that makes the Earth smile."

Material Balance between Business Activities and Environmental Accounting

We have put together a summary of fiscal 2011 environmental accounting and the impact of our business activities on the environment during this period. We undertake activities to

reduce the amounts of raw materials, energy, and water used in the production of the many products we make and strive to curb emission of substances that adversely affect the environment.

Material Balance of Business Activities for Fiscal 2011 (Overall Picture of Environmental Impact)



Environmental Accounting Calculations for Fiscal 2011

Business area costs				Millions of yen	
Item	Environmental Investments	Environmental Costs	Economic Effects	Item	Total
Global warming prevention Save energy, reduce greenhouse gas emissions, stop ozone layer destruction, etc.	1,103	1,701	Energy-saving cost reduction 480	Total investments in fiscal 2011	71,684
Efficient use of raw materials, water, and other resources	6	252	Resource-saving cost reduction 50	Total R&D costs in fiscal 2011	35,321
Resource-recycling activities	60	800	Income from recycling 686	Percentage of investments (Environmental investments 2,158/Total investments 71,684) 3%	
Waste disposal costs	0	168	Waste disposal cost reduction 2	Percentage of R&D costs (Environmental R&D costs 7,449/Total R&D costs 35,321) 21%	
Environmental risk control	230	1,830	—	• Data was compiled in accordance with the Environmental Accounting Guidelines released by the Ministry of the Environment.	
Subtotal	1,400	4,750	1,218	• Coverage: Kawasaki Heavy Industries, Ltd.	
Year-on-year comparisons	92%	128%	90%	• Period: April 1, 2010 to March 31, 2011	
Upstream/downstream costs	139	2,776	126		
Management activity costs	20	462	—		
R&D costs	502	7,449	—		
Social activity costs	56	195	—		
Environmental remediation costs	41	80	—		
Total	2,158	15,712	1,343		
Year-on-year comparisons	120%	104%	100%		

Building an Environmental Management Platform

EMS Administration

All KHI production bases have acquired ISO 14001 certification. Currently, we are working to expand the scope of Environmental Management System (EMS) implementation at subsidiaries in Japan and abroad and continue activities aimed at establishing environmental management structures, including compliance with environmental laws and regulations. Of the 46 domestic subsidiaries that we targeted for EMS adoption, 41 had completed development of the necessary structure by the end of fiscal 2011. The remaining five subsidiaries are expected to finish their preparations in fiscal 2012. To date, we focused on principal factories, but under the 7th Environmental Management Activities Plan, we will strive to expand the scope of EMS establishment at overseas locations. Of the 24 subsidiaries that have been targeted for an EMS, KCMA Corporation, in the United States, completed implementation in fiscal 2011. Of the 17 companies that still have not configured the appropriate EMS, we will in accordance with local laws and regulations clarify objectives based on business conditions and scale of operations, and set time frames and otherwise implement incremental efforts to expedite EMS implementation.

Compliance with Laws & Regulations

In fiscal 2011, there were no judicial or administrative penalties and no administrative measures at any KHI facilities, but there were two administrative warnings and five citizen complaints. The administrative warnings stem from issues regarding higher-than-allowable pH value in wastewater from the Harima Works and the reported value of water quality at the Akashi Works. Corrective action was immediately taken.

Status Law and Regulation Compliance and Environmental Protection Activities Overseas

Overseas subsidiaries and offices of the Group are expected to abide by environmental laws and regulations just as domestic operations do, and we seek to expand the scope of EMS implementation and eliminate factors that lead to environmental accidents. To enhance environmental management and lower environmental risk throughout the Group, regardless of location, we have broadened the range of environmental impact data we collect from principal subsidiaries overseas. In addition to data on energy usage, collected since fiscal 2011, we now accumulate data on the volume of waste and chemical substances discharged and handled. Also, we will establish a format in fiscal 2012 to confirm environmental management status through local surveys of key overseas subsidiaries by the Environmental Affairs Department and promote efforts to minimize risk.

Environmental Awareness Activities for Employees

Environmental e-Learning/Courses for People without Computers

To sustain a high level of environmental awareness among employees throughout the Group, we offer environmental e-learning for newly hired individuals. This ongoing process is aimed not only at new employees at KHI but also those at subsidiaries. In July and August 2010, approximately 500 people participated in environmental e-learning classes, for a 90% attendance rate. For employees who find it difficult to participate in the e-learning classes because they lack easy access to a personal computer, we offer lecture-style classes. In the three years since these classes were first offered, in fiscal 2009, we have had around 5,700 people attend lectures, for an attendance rate of 73%.

Environmental Awareness

We run publicity campaigns designed to raise the environmental awareness of each and every employee. We undertake these campaigns all the time to promote environmentally conscious conduct not only in the workplace but also in the community and at home.



Cultivating Qualified Managers

To enrich management activities emphasizing energy and the environment, we are striving to cultivate individuals with legal qualifications required under laws and regulations related to energy and the environment.

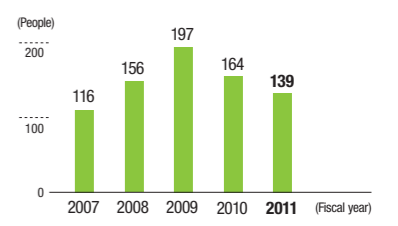
Number of Qualified Pollution Control Managers

Air	70
Water	75
Noise, Vibration	43
Others	21
Total	209

Number of Qualified Energy Managers

Energy Managers	46
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Number of Newly Registered ISO 14001 Internal Environmental Auditors



Toward the Formation of a Sustainable Society

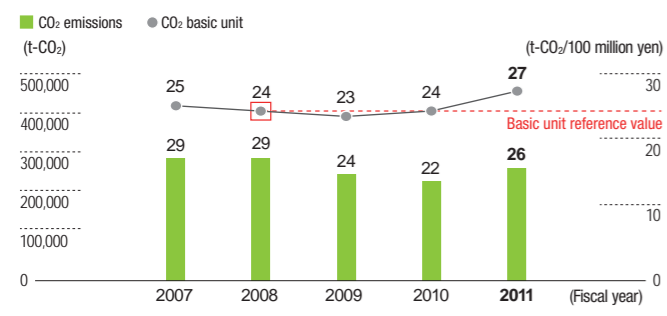
Reducing Greenhouse Gas Emissions

It is our stated goal to contribute to the prevention of global warming through products and manufacturing that use energy without waste, and we undertake activities to reduce greenhouse gas emissions generated in our manufacturing processes.

Our greenhouse gas reduction target is to achieve an average 10% decrease between fiscal 2009 and fiscal 2013 in our CO₂ basic unit, compared with the fiscal 2008 reference value. The results for fiscal 2011, a turning point, showed a basic unit of 27t-CO₂/¥100 million—against the benchmark 24t-CO₂/¥100 million—indicating that it will be difficult to reach our target. It must be noted, however, that CO₂ emissions hovered around 260,000t-CO₂ in fiscal 2011, a significant year-on-year increase paralleling a recovery in capacity utilization at our facilities.

We also emphasize activities geared toward saving energy in manufacturing and will reinforce efforts to invest in energy-saving equipment, such as photovoltaic power generation equipment and high-efficiency lighting systems, at our factories.

Changes in CO₂ Emissions and Basic Unit at KHI



Waste Reduction Activities

It is our stated goal to engage in manufacturing that uses resources without waste in order to recycle and fully utilize limited resources. We undertake various activities to achieve this goal.

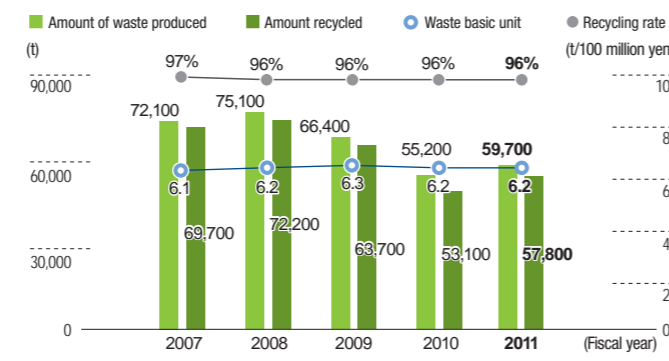
Among efforts to reduce waste, we promote the reuse and recycling of waste oil and constantly push zero-emission activities designed to recycle 100% of the waste emitted from our works without resorting to simple incineration or disposal as landfill.

Common activities at all works

- Activities to reduce three substances with greatest waste emissions (metal scrap, waste oil, wood scrap)
- Promote resource saving, 3Rs
- Maintain and enhance zero emissions status
- Promote implementation of electronic manifests

In addition, our basic unit was 6.2 points, the same as in fiscal 2010. We set fiscal 2003 as a reference year for the basic unit and are striving to achieve our target—a 12% decrease from the fiscal 2003 level by fiscal 2013. We analyze the success of common activities implemented throughout the Group and promote effective measures to achieve our target.

Amount of Waste Produced and Recycling Rate



Reducing Chemical Substances

It is our stated goal to contribute to reduced environment impact and conservation of the ecosystem through manufacturing that is in harmony with global environment. We undertake various activities to achieve this goal.

Among efforts to reduce chemical substances throughout the Group, we have set targets in every business segment for major VOCs, dichloromethane, and hazardous heavy metals, and each segment has embraced the necessary approaches. Suitable measures have been implemented in nearly all areas, but efforts will continue on the study and consideration of additional measures to curb the amount of chemicals subject to reduction.

Amounts of Chemicals Subject to Reduction Handled and Emitted (t/year)

Substance	Fiscal 2011	Increase or decrease from fiscal 2010	
Major VOCs	Toluene	321	+5.2%
	Xylene	633	-12.0%
	Ethylbenzene	326	+0.6%
	Total	1,280	-5.0%
Dichloromethane	45	-11.8%	
Hazardous heavy metals	Hexavalent chromium	27	+22.7%
	Lead	1.7	-29.2%
	Cadmium	0.027	-77.5%

Notes: *1 Amounts of major VOCs and dichloromethane are the amounts emitted, while that of hazardous heavy metals is the amount handled.

Consideration for the Environment in Our Products



W800

Key Activities for the KHI Group

Implementing Product Assessments

For newly developed and designed products, as well as for particularly important products, we assess products according to such criteria as resource- and energy-savings and recycling potential, with the goal of reducing the environmental impact of our products during their life cycles. Because specific evaluation techniques vary depending on the type of product, each business segment draws up product assessment rules appropriate to the characteristics of respective products.

Responding to the ELV Directive^{*1}, the RoHS Directive^{*2}, and the REACH Regulation^{*3}

Since 2000, laws and regulations related to chemical substances have been strengthened in the European Union by the establishment of such controls as the ELV Directive, the RoHS Directive, and the REACH Regulation. The RoHS Directive covers electric and electronic products, and some of the products made by the Precision Machinery Company and the Robot Division comply with this Directive. The ELV Directive focuses on automobiles, and while motorcycles are not subject to the content of this directive, the Motorcycle & Engine Company has embraced the voluntary actions espoused by the Japan Automobile Manufacturers Association. We also apply this directive to some Precision Machinery Company products. The REACH Regulation went into effect in June 2007 and applies to all chemical substances manufactured in and imported to the European Union. Businesses that manufacture or import chemical substances in quantities of one ton or more must register those substances. The products made by KHI are primarily articles and not all of them need to be registered. However, all substances that are released intentionally, and substances of very high concern, such as those with carcinogenic properties, require registration with or notification to the appropriate authorities. Regulations also exist for the evaluation, authorization, restriction, and communication of information regarding chemical substances, necessitating a system to identify information about the chemical substances in products throughout our entire supply chain. Each business segment identifies information on chemical substances in line with the green procurement practices outlined on page 24. Besides that, the Motorcycle & Engine Company has gone a step further with the creation of the Kawasaki Material Data System that responds to the REACH Regulation, as well as other chemical substance rules and legislation.

*1 ELV Directive: End of Life Vehicles Directive
 *2 RoHS Directive: Directive on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment
 *3 REACH Regulation: Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals

Efforts by the Motorcycle & Engine Company

Cleaner Exhaust Gas

In fiscal 2011, we maintained the focus from previous fiscal years—achieve cleaner exhaust from motorcycles sold in the domestic market—and launched the W800 with superior environmental performance and improved intake and exhaust systems that ensure levels conforming to 2007 domestic emissions regulations. The W800 is the result of a committed pursuit to recreate the riding feel and beauty of a vintage motorcycle.

Boasting precise fuel metering, thanks to an electronically controlled fuel injection system using throttle body with sub-throttle^{*4}, and a muffler with large honeycomb catalysers and optimized inner construction and shape, the W800 not only contributes to cleaner exhaust gas but also clears noise regulations as well.

*4 Throttle body with sub-throttle: A device equipped with both a manually controlled throttle and an electronically controlled throttle for the purpose of optimizing the control of intake air mass.

Promoting the 3Rs

Since October 2004, we have operated an independent motorcycle recycling system in cooperation with three other motorcycle manufacturers and 12 importers in Japan. In fiscal 2011, we achieved a recycling rate of 89.1%. From October 2011, we plan to eliminate the user burden of recycling costs.

For new-model motorcycles, we emphasize environmentally conscious designs highlighting reduced materials and more recycling, right from the development phase. We conduct preliminary evaluations of efforts related to the three Rs—reduce, reuse and recycle—before commencing design, prototyping, and mass-production phases. In particular, we seek to increase recyclability through greater use of materials that are easy to recycle and have achieved a potential recycling rate exceeding 90% on every model, with most models exceeding 95%.

Reducing and Eliminating Environmental Substances of Concern

For new-model motorcycles sold in Japan, we already meet the voluntary targets of reduced environmental substances of concern (lead, mercury, hexavalent chromium and cadmium) set by the Japan Automobile Manufacturers Association, and we have also achieved voluntary targets for older models still being sold.