

KAWASAKI REPORT 2008

Environmental and Social Responsibility



Kawasaki Continues to Produce What Is Good for People and Society

Corporate Profile

Company Name: Kawasaki Heavy Industries, Ltd.

Incorporated: October 15, 1896
(Founded in April 1878)

Capital: 104 billion yen

Kobe Head Office: 1-3, Higashikawasaki-cho
1-chome, Chuo-ku, Kobe, Hyogo,
650-8680 Japan

Tokyo Head Office: 4-1, Hamamatsu-cho 2-chome,
Minato-ku, Tokyo, 105-6116 Japan

Representative: Tadaharu Ohashi, President

Kawasaki Group Network: 20 Domestic (10 works)
4 Overseas
(See back cover) 129 Affiliated Companies
(97 Subsidiaries, 32 Affiliates)
(As of March 31, 2008)

Editorial Notes

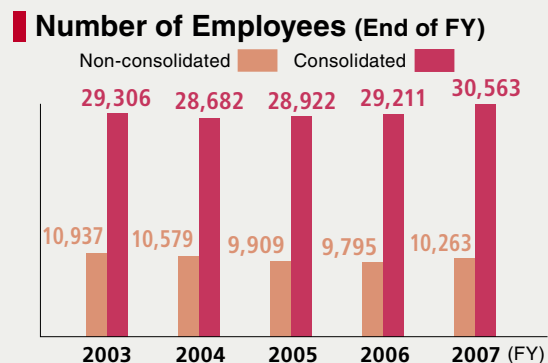
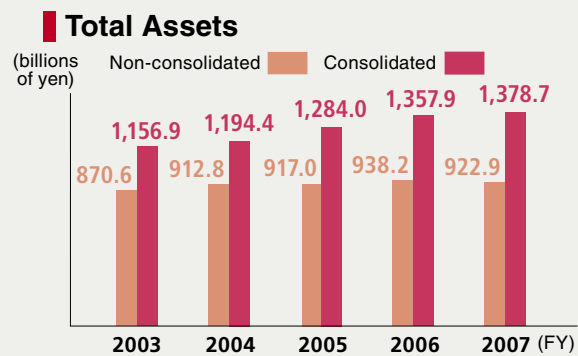
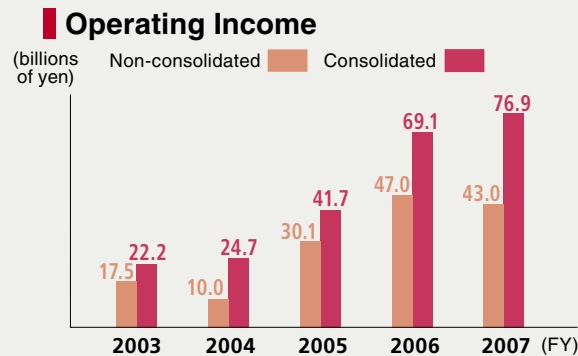
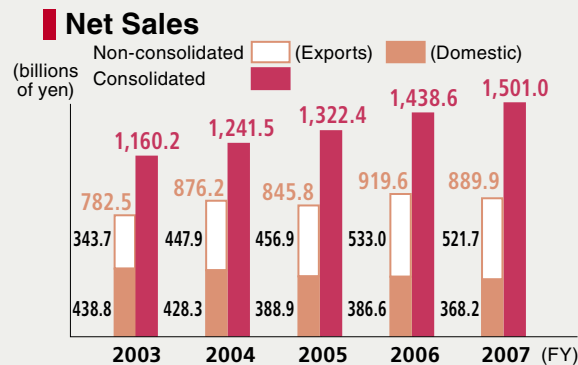
Reporting Scope: This report covers the environmental and social activities of the entire Kawasaki Group; however, the environmental responsibility section is focused on Kawasaki Heavy Industries, Ltd., and the following three main subsidiaries; Kawasaki Shipbuilding Corporation, Kawasaki Precision Machinery Ltd., and Kawasaki Plant Systems, Ltd.

Reporting Period: The period for reporting covers FY2007 (April 1, 2007, to March 31, 2008). Some information from FY2008 is also included.

Next Scheduled Publication: This report will be published annually.

Divisions Responsible for Publication: CSR Department and Environmental Management Department (see the back cover for contact information)

This report is prepared with reference to the Environmental Reporting Guidelines issued by the Ministry of the Environment and the GRI Sustainability Reporting Guidelines.



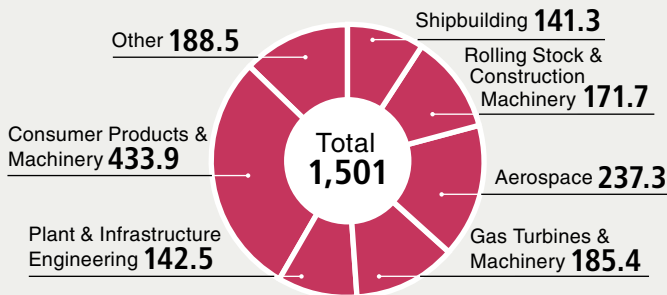
For more details see Kawasaki Heavy Industries "Financial Highlights" at

<http://www.khi.co.jp/annual/english/highlight/index.html>

Overview of Business



Sales by Segment (FY2007, consolidated) (billions of yen)



Main Businesses of Our Internal Companies and Three Main Subsidiaries*

Rolling Stock Company Rolling Stock Div. Construction Machinery Div. Industrial Facilities and Tunneling Equipment Div.	Rolling Stock Infrastructure
Aerospace Company	Aerospace
Gas Turbine & Machinery Company Gas Turbine Div. Machinery Div.	Aerospace (jet engines) Shipbuilding (marine engines) Energy Plants & Facilities Industrial Equipment
Consumer Products & Machinery Company Consumer Products & Machinery Company Robot Div.	Leisure Products Industrial Equipment (industrial robots)
Kawasaki Shipbuilding Corporation	Shipbuilding
Kawasaki Precision Machinery Ltd.	Industrial Equipment (hydraulic equipment)
Kawasaki Plant Systems, Ltd.	Energy Plants & Facilities Environment & Recycling Industrial Equipment

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

Contents

Kawasaki Group Profile

Message from the President	3
Mission Statement and Medium-Term Business Plan	5

Feature Report

Feature Report 1 Reducing CO ₂ Emissions Through Our Products Kawasaki Products That Help Prevent Global Warming	7
Feature Report 2 Development of Rail Systems Using Gigacell® Battery-Driven Low-Floor Light Rail Vehicle SWIMO and Battery Power System (BPS) for Railways	13

Social Responsibility

Corporate Governance and Compliance In Keeping with the Public Trust	17
Serving Our Customers Advancing the Development of our Doctor-Heli	21
Relationships with Our Employees Creating a Flexible Working Environment Creating Safer and Healthier Workplace	23 25
Coexisting with Communities and People Toward Symbiosis with Society and People	27

Environmental Responsibility

Environmental Management Promotion of Environmental Management Achievements and Appraisal of Environmental Management Activities Environmental Management Activities Environmental Accounting Material Balance of Business Activities	29 31 33 35 36
Consideration for the Environment in Our Products Efforts for Consumer Products, including Motorcycles and Personal Watercraft	37
Environmentally Conscious Production Reducing Environmental Impact in Production Activities Energy Saving Activities at Our Plants	39 41

**Tadaharu Ohashi**

President
Kawasaki Heavy Industries, Ltd.

A handwritten signature in black ink that reads "T. Ohashi". The signature is written in a cursive, flowing style.

Global Kawasaki Contributing to the Sustainable Development of the Planet

Launching the Kawasaki Group Mission Statement

The world is confronting great tides of change in numerous aspects of the environment, society and economy.

Particularly regarding our global environment, according to a series of reports by the Intergovernmental Panel on Climate Change (IPCC) that were made public in 2007, global warming has come to be recognized worldwide as a serious problem. Moreover, the first commitment period of the Kyoto Protocol, which requires advanced countries to reduce greenhouse gas emissions, starts in 2008.

In May 2007, the Kawasaki Group formulated the Kawasaki Group Mission Statement that sets Kawasaki, Working as One for the Good of the Planet as our Group Mission. Our diverse business fields range from transportation systems for land, sea and air to various types of industrial plants, power generation systems and industrial machinery. At our Group, which

has supported the fundamental infrastructure of societies around the world, we believe that we must fulfill two duties, in particular, to help conserve the global environment.

One is to confront the problems shared by people everywhere and contribute to the sustainable development of the planet through both our technologies and our products. The other is to respond to environmental concerns in all our corporate activities, including the manufacturing processes for our products.

Our Mission Statement covers both of the two tasks that we believe to be part of our Group's role in society. Since the formulation of the Mission Statement, we have been seeking to make it permeate the consciousness of our employees through various means, including the preparation of training curricula, the distribution of pamphlets and portable cards and the implementation of symposia. We intend to sustain these types of efforts to make the Mission Statement a core component of our corporate culture and a compass for the conduct of all our employees.

Seeking Harmonious Coexistence with the Global Environment

As we seek to conduct business that is environmentally conscious, we are strengthening environmental conservation activities within the Kawasaki Group.

In particular, in addition to establishing a separate budget category for investments in facilities for reduction of CO₂ emissions and other important environmental protection efforts this year, we are thoroughly following up on the implementation of these efforts.

In addition, among our efforts to reduce greenhouse gas emissions at the Kawasaki Group, as a voluntary effort in response to the Kyoto Protocol, we have set a target of a 6% reduction in greenhouse gas emissions in FY2010 compared to FY1990. Achieving this target is not an easy task because the scale of our business has expanded compared to FY1990, but we are sticking to it and pursuing investigations of new measures in our Group to achieve this target.

In order to mitigate environmental impacts using the technologies and products that are the core of our business, we are focusing our efforts on the development of products that contribute to global environmental conservation. We are doing this by applying environmental technologies that we have cultivated, including technologies for the conservation of energy and resources. This is in keeping with the medium-term business plan "Global K" that we are currently advancing, in which our corporate vision is to become "a leading global enterprise that focuses on transportation systems for land, sea and air, and the energy and environmental engineering sectors."

I would like to introduce a few leading examples in three fields from among our efforts. First is our battery-driven low-floor light rail vehicle SWIMO,¹ a new urban transportation system that is receiving much attention. This vehicle can travel more than 10 km without overhead lines using the large-scale nickel-metal hydride battery Gigacell[®] that we have developed. We have also realized a barrier-free, super-low floor that makes it easy for children and the elderly to board. This next-generation vehicle is highly anticipated as good for people and the environment.

Another achievement is a Green Gas Engine² that uses natural gas as a fuel. We have realized this innovative gas engine with excellent environmental performance that includes the highest power generation efficiency in the world at 48.5%, a total energy efficiency of 85.3%, and greatly reduced CO₂ and NO_x emissions.

We have also been advancing the development of technologies that use renewable energy. One example is our commercialization of woody biomass gasification power generation systems.³ Since wood chips are used as the main fuel, resources are used effectively. Moreover, this power generation process is carbon neutral because the CO₂ released into the atmosphere

by these power plants comes from trees that have captured an equal amount of CO₂ during their growth.

We will continue to apply our management resources effectively and work actively to develop new products and technologies that contribute to enriching the future of people and the planet.

Continuous Awareness of Corporate Social Responsibilities

Among the Kawasaki Group Management Principles in our Mission Statement, we have established the provision that "The importance of corporate social responsibility (CSR) permeates all aspects of our business. This stance reflects the Kawasaki Group's corporate ideal of harmonious coexistence with the environment, society as a whole, local communities and individuals." As an enterprise that exists in the 21st century, in addition to environmental problems, we place importance on relationships with every type of stakeholder, including shareholders, customers, employees and local communities, and we seek to conduct management with a broad awareness of our corporate social responsibilities.

To realize this, the most important thing is that every employee thoroughly understands our Mission Statement and strives every day to act according to its spirit. At the same time, however, it is important to increase the transparency of our management and raise its quality even more through the maintenance and enhancement of corporate governance, compliance and internal control systems. As one of the basic targets of the medium-term business plan "Global K," we are endeavoring in our Group to "reinforce CSR organization to enhance corporate quality." In the last fiscal year, in order to investigate the accuracy of financial reports, along with establishing a dedicated organization to supervise the entire Group, we also revised company regulations related to internal control.

Furthermore, we seek to be a corporation that earns the trust of the people of our communities. In addition to cleaning neighborhoods around our business places, cooperating in educational internships for junior high school students and other regular efforts, we contribute to the local community through support of the Vissel Kobe⁴ football team and interactions with people at our corporate museum, Kawasaki Good Times World,⁵ as well as through donations at times of disaster and other financial contributions.

We will continue working to make the quality of our corporation even better by augmenting corporate structures and implementing in-house education to raise the ethical awareness of every employee. We sincerely hope that you will continue to support us in our efforts.

¹ SWIMO: see pp. 13–15 for details

² Green Gas Engine: see p. 10 for details

³ Woody biomass gasification power generation systems: see p. 8 for details

⁴ Vissel Kobe: see p. 28 for details

⁵ Kawasaki Good Times World: see p. 28 for details

Kawasaki Group Mission Statement

The Kawasaki Group established the Kawasaki Group Mission Statement in May 2007 in order to clearly state our social mission, the values that are the core of the Kawasaki brand, our Group Management Principles and our Group Code of Conduct. By putting the Kawasaki Group Mission Statement into practice, we are seeking as a Group to create value for stockholders, customers, local communities and other stakeholders and to increase the value of our corporation.

Group Mission

[Our role in society]

Kawasaki, working as one for the good of the planet

- We are the Kawasaki Group, a global technology leader with diverse integrated strengths.
- We create new value – for a better environment and a brighter future for generations to come.

The Kawasaki Group Core Values

[The values behind strategies and plan]

- Value Creation:** We are globally driven to create new value – both for our customers and for the benefit of society as a whole.
- Originality:** We thrive on originality, innovation and leadership.
- Excellence:** What we produce is of exceptionally high quality and functionality, as we constantly strive to be at the global cutting edge.

Medium-Term Business Plan “Global K”

The Global K is a business plan, covering primarily the years 2006 to 2010, compiles strategies to realize a vision for the entire Group and each business field 10 years from now. It specifies business strategies for growth and prosperity of the Group in the first half of the decade.

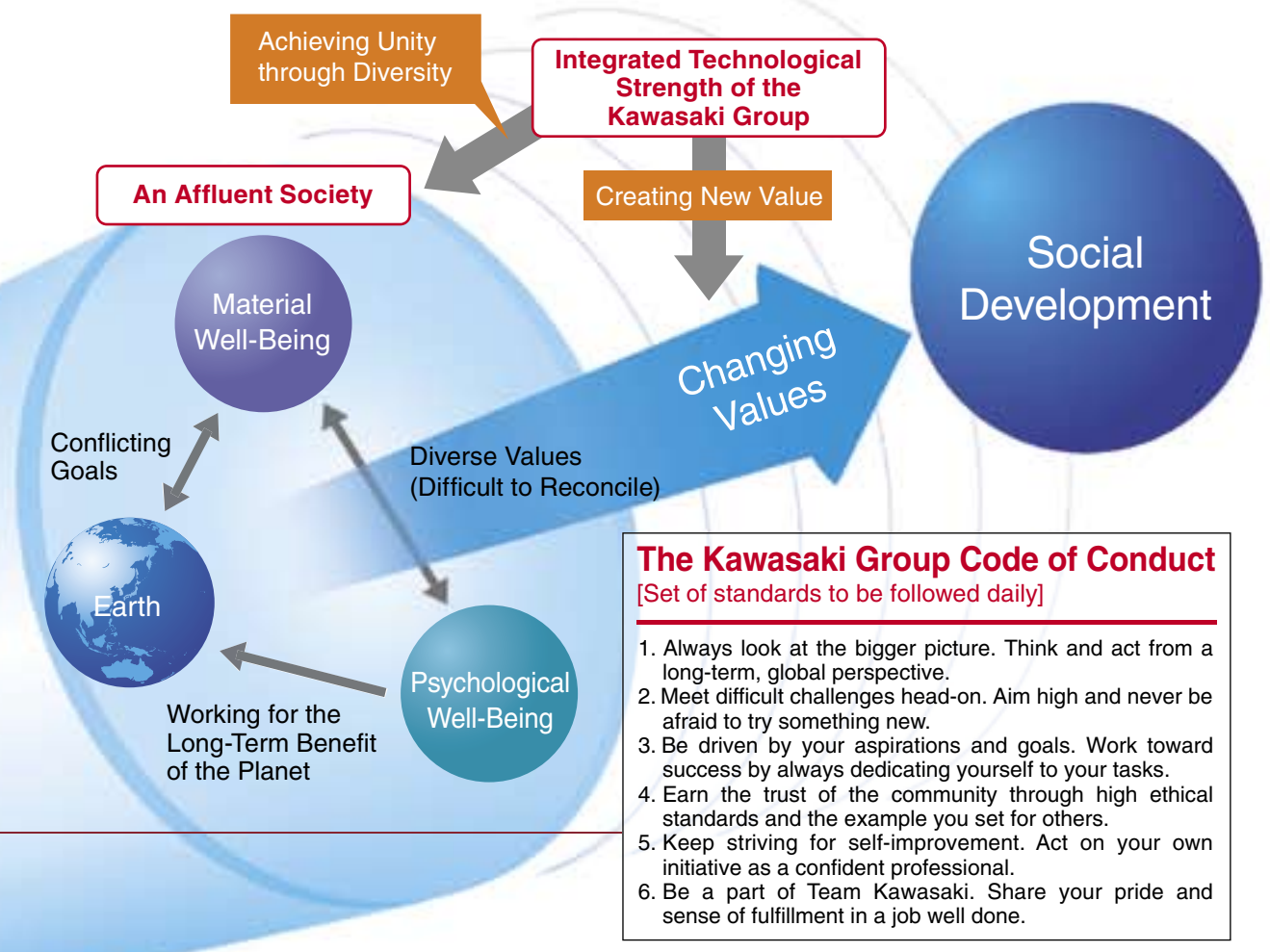
The basic objective is “to become, during the period of medium-term business plan, a highly profitable, globally recognized enterprise based on these principal management policies: ‘Quality Followed by Quantity,’ ‘Selectivity and Concentration,’ and ‘Creation of New Value.’ ” One of the four basic objectives is to “Reinforce CSR organization to enhance corporate quality.”

One of the priorities under Global K is to “Promote CSR,” and it instructs us to strive to increase our corporate quality and seek to:

- Enhance internal control systems and compliance
- Increase management transparency
- Strengthen risk management capabilities
- Endorse environment-friendly business operation

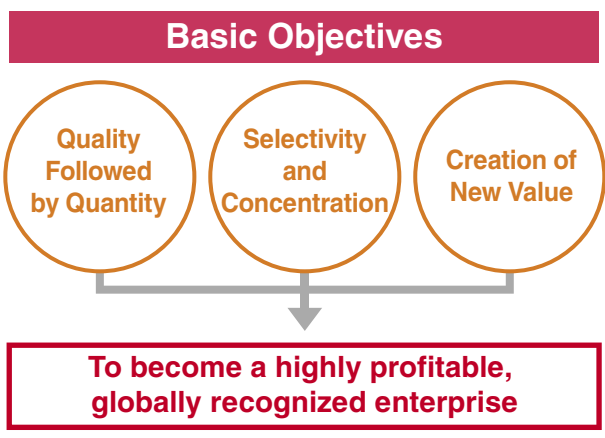
Corporate Vision

Kawasaki Heavy Industries, Ltd. aims to become a leading global company working as one for the good of the planet through its core businesses, which encompass land, sea and air transportation systems as well as energy and environmental engineering sectors.



- ### The Kawasaki Group Code of Conduct
- [Set of standards to be followed daily]
1. Always look at the bigger picture. Think and act from a long-term, global perspective.
 2. Meet difficult challenges head-on. Aim high and never be afraid to try something new.
 3. Be driven by your aspirations and goals. Work toward success by always dedicating yourself to your tasks.
 4. Earn the trust of the community through high ethical standards and the example you set for others.
 5. Keep striving for self-improvement. Act on your own initiative as a confident professional.
 6. Be a part of Team Kawasaki. Share your pride and sense of fulfillment in a job well done.

- ### The Kawasaki Group Management Principles
- [Group management guidelines and rules]
1. Trust: As an integrated technology leader, the Kawasaki Group is committed to providing high-performance products and services of superior safety and quality. By doing so, we will win the trust of our customers and the community.
 2. Harmonious coexistence: The importance of corporate social responsibility (CSR) permeates all aspects of our business. This stance reflects the Kawasaki Group's corporate ideal of harmonious coexistence with the environment, society as a whole, local communities and individuals.
 3. People: The Kawasaki Group's corporate culture is built on integrity, vitality, organizational strength and mutual respect for people through all levels of the Group. We nurture a global team for a global era.
 4. Strategy: The Kawasaki Group pursues continuous enhancement of profitability and corporate value based on three guiding principles – selectively focusing resources on strategic businesses; emphasizing quality over quantity; and employing prudent risk management.



Quantitative Targets

<ul style="list-style-type: none"> Strengthen Profitability Reinforce Financial Position 	➔	<ul style="list-style-type: none"> Improve ROIC (investment efficiency) Increase ratio of income before tax to sales
[Target for FY2010]		
<ul style="list-style-type: none"> ROIC¹ 14% Income before tax margin 5.8% 	<ul style="list-style-type: none"> Net sales: ¥1,560 billion Operating income: ¥100 billion Income before tax: ¥90 billion 	
<ul style="list-style-type: none"> Debt-to-equity ratio²: 100% or less Equity ratio: 30% or more 		
Shareholder returns		
Gradually increase dividends in line with improved profitability ³		

¹ ROIC (return on invested capital) = earnings before interest and taxes (EBIT) ÷ invested capital
² Debt-to-equity ratio = interest-bearing debt ÷ total shareholders' equity
³ We consider the business environment and capital conditions, in particular, but 30% is the basic consolidated dividend payout ratio for the medium- to long-term.

Kawasaki Products That Help Prevent Global Warming

At Kawasaki, we are providing products with superior environmental performance using technologies that we have cultivated over decades. Moreover, we hope to contribute to preserving the global environment in the future by providing technologies and products that control CO₂ emissions as much as possible when they are used. In this feature report, we introduce technologies and products that contribute to the prevention of global warming, focusing on the two themes of energy-related products and transportation-related products. We have quantified their CO₂ emissions reduction effects and summarized the results for energy-related products on page 10. For transportation-related products, we have also provided specific data for each product.



L20A gas turbine



LNG carrier

Energy Products

Energy-Related Products That Contribute to Reducing CO₂ Emissions

To realize CO₂ emissions reduction in energy-related products, we are incorporating various technologies including those for high-efficiency energy use, renewable energy use, and using energy from waste heat and waste matter. Moreover, by developing new technologies to strengthen our product and technology lineup, we are seeking to contribute even more to the global environment and society.

High-Efficiency Energy Use Technologies

- Gas Turbine Cogeneration System
- Combined Cycle Power Generation System

We provide gas turbine cogeneration systems and combined cycle power generation systems.

We have developed our own gas turbines to run small and medium facilities. Since our first gas turbine in 1974, we have succeeded in building more than 8,000 units, and we have received high evaluations from society for them.

These facilities use natural gas that generates small amounts of CO₂. Since the heat that they produce can also be used effectively, they are receiving attention as one valuable system for responding to global warming and energy problems.

Overall thermal efficiency
80% or more



Gas turbine cogeneration system

In addition to generating power from natural gas burned in gas turbines, this system effectively uses the waste heat as steam and warm water.

Power generation efficiency
49% or more



Large-scale combined cycle power generation system

In addition to generating power from natural gas burned in gas turbines, this system also uses the waste heat to generate more power using steam turbines.

Renewable Energy Use Technologies

- Woody Biomass Fixed-Bed Gasification, Combined Heat and Power System
- Woody Biomass Fluidized-Bed Gasification Power Generation System



Test plant in Niyodogawa, Kochi Prefecture

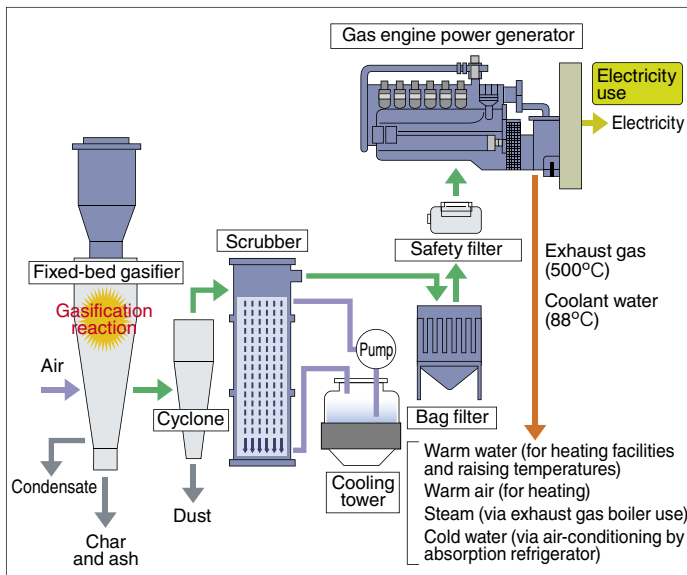
Research on the use of woody biomass as a means of preventing global warming is being conducted in many places. The CO₂ generated during the combustion of woody biomass is offset by the same amount that the trees absorbed during their growth. As a result, the cycle from growth through use as a fuel is carbon neutral, meaning that there is no overall increase in CO₂ in the atmosphere. However, due to problems of facility efficiency and fuel collection costs, it has still not become very popular in Japan. High-efficiency, compact power generation facilities are necessary to make effective use of the woody biomass that is abundant in the mountainous regions of the country.

In consideration of these conditions, we have developed Woody Biomass Fixed-Bed Gasification, Combined Heat

and Power System and Woody Biomass Fluidized-Bed Gasification Power Generation System that can be used for small-scale distributed power generation. Considering factors that include the type and quantity of biomass handled, as well as the application, building systems for the effective use of energy that are suited to each region is possible.

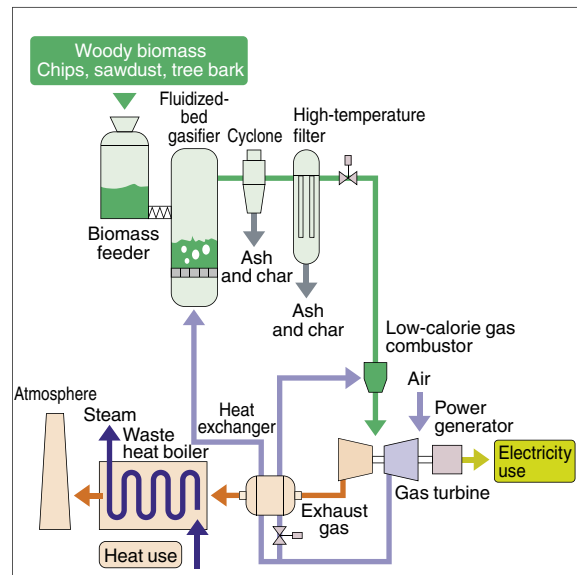
Our Woody Biomass Fluidized-Bed Gasification Power Generation System was selected by NEDO* for Tests for Locally Systemized Biomass Energy. We are conducting demonstration tests for this system in the town of Niyodogawa in Kochi Prefecture from FY2007 through FY2009.

* New Energy and Industrial Technology Development Organization



Woody Biomass Fixed-Bed Gasification, Combined Heat and Power System

Lumber scraps, wood from forest thinning and pruned branches, for example, are gasified in a fixed-bed gasifier to generate power in a gas engine. The heat generated in this process is also available. (Standard output scale: 50–200 kW)



Woody Biomass Fluidized-Bed Gasification Power Generation System

Chipped timber scraps from forested regions, for example, are gasified in a fluidized-bed gasifier to generate power in a gas turbine. The heat generated in this process is also available. (Standard output scale: 150 kW)

• Methane Fermentation System for Biomass Resources

We have provided a methane fermentation system for biomass resources to the Suzu City Sewage Treatment Plant in Ishikawa Prefecture. This is the first biomass utilization project jointly promoted by two related government ministries. This facility mixes and treats sewage sludge, human waste, kitchen waste and other biomass, and uses the methane gas generated in the treatment process to, for example, heat the facility and dry sludge. Moreover, the dry sludge that is produced is utilized for the community as organic fertilizer.



Methane fermentation system for biomass resources

Technologies for Using Energy from Waste Heat and Waste Matter

● Waste Heat Recovery Power Generation (WHRPG) in Cement Plant

We have a record of numerous achievements in the cement plant field. Combining this experience with our waste heat recovery boiler technologies, we have developed and delivered WHRPG in cement plant that effectively uses the heat emitted by cement plants. This system recovers heat from exhaust gas in cement plants by waste heat recovery boilers and generates electric power using steam turbines. Since delivering our first WHRPG in Japan in 1980, we have built about half of all such facilities installed in the country. Moreover, since delivering our first one to China in 1998, working with a joint venture, we have delivered and received orders for 97 systems. By doing this, we are contributing to reducing CO₂ emissions in China as that country experiences remarkable economic growth.



WHRPG in cement plant

The main components of WHRPG are two waste heat recovery boilers and one steam turbine and generator. One boiler is installed at the exit of the preheater that heats raw materials and the other is installed at the exit of the cooler that cools clinker. Since especially the exhaust gas from preheater contains much dust, a forced circulation, horizontal waste heat recovery boiler is used. By removing dust continuously, stable operation for long periods can be possible with reduced adhesion of dust.



● Coke Oven Gas Heat Recovery Power Generation System

The coke that is used in the blast furnace of ironworks, for example, is generated in coke ovens. The exhaust gas emitted by coke ovens has a high temperature of 1000°C or more, giving it a great amount of heat energy. In a coke oven gas heat recovery power generation system, the heat of the gas is captured as heat energy by a waste heat recovery boiler and power is generated by a steam turbine. We delivered the third in the world, and also the largest facility so far, to an ironworks in Brazil. In addition to using the electricity generated in the ironworks, extra energy is sold, which helps respond to sudden growth in the local electricity demand.

Coke oven gas heat recovery power generation system

Our waste heat recovery boilers are available in a variety of types with structures and forms that can handle every type of gas and are suitable for nonferrous smelting, petrochemical and iron-manufacturing plants, for example. They can operate stably and continuously even with coke oven gas, which is very hot at 1000°C or more and contains dust.

● Waste Power Generation System

We were early to begin working on the theme of transitioning from just treating waste to using it effectively. For this purpose, we have developed and provided waste power generation systems that use waste as fuel. Among systems that we use to seek increased efficiency, the Kawasaki Advanced Stoker System realizes complete high-temperature combustion with a low air ratio by using an advanced stoker (fire grate) type waste incinerator, while gasification and melting systems gasify waste and use its energy.



Fluidized-bed gasification and melting waste treatment plant

Waste is gasified (partially combusted) in a fluidized-bed partial combustion furnace. That gas (unburned gas and solids) is fed to a rotating melting furnace and the unburned gas is combusted. Energy is also saved by using the heat generated from the waste itself to melt ash at a high temperature of about 1300°C and to turn it into slag.

● Top Pressure Recovery Turbine (TRT) System

Top pressure recovery turbine (TRT) systems recover electricity by using a turbine to capture the pressure energy of blast furnace gas generated by an ironworks blast furnace. By controlling the blast furnace top pressure using variable stator vanes of turbine, we have made a product that generates power with little energy loss.

With our long record with TRT systems, including delivery of 42 units in Japan and abroad, we are contributing to the reduction of CO₂ emissions around the world, even in Brazil, for example, where economic growth is remarkable.



Top Pressure Recovery Turbine (TRT) System



Green Gas Engine

Newly
Developed
Technologies

Gas Engine Cogeneration System

Kawasaki Green Gas Engine with the Highest Power Generation Efficiency (48.5%) in the World

In response to the expansion of the market for gas engines that use clean natural gas as fuel, we developed a gas engine with an 8-MW power output. We have achieved 48.5% power generation efficiency, the highest in the world, and a NOx emissions value of 160 ppm (O₂ = 0% conversion), which is also the best environmental performance in the world. Based on our long years of experience with diesel engine manufacturing, we began the development of a gas engine in 2003 and realized this new model in 2006.

Thus far, we have built a record with numerous cogeneration systems that have high overall thermal efficiency and have earned high confidence for our products. By strengthening our lineup with this newly developed gas engine, we are now able to provide gas turbines to users that need both heat and electricity, and gas engines to users that mainly need electricity.

Project Member Interview

We are seeking further efficiency improvements while looking at prospects overseas.

A major issue in the development of this product was controlling the abnormal combustion known as knocking. As measures to resolve this, we optimized the forms of the main- and pre-combustion chambers and developed a control system to raise anti-knocking performance. These efforts allowed us to complete this product. In addition to further improving efficiency, we will seek to promote its high environmental performance, which is exemplified by low NOx emissions, and work actively to increase sales in Japan and abroad.

Tetsuo Tokuoka

Senior Staff Officer
Diesel Engine
Department
Machinery Division



CO₂ Emissions Reduction Effect of Energy-Related Products

CO₂ emissions reduction effect by products delivered in FY2007 (selection of main products)

Product	Total number of deliveries (FY2007)	Output totals		CO ₂ emissions reduction effect [t-CO ₂ /Y]	Number of units until FY2006 (approx.)	Notes and calculation criteria
		Electricity [kW]	Heat quantity [MJ*/h]			
Gas turbine cogeneration system	21	124,000	1,050,000	284,000	480	(1)
Methane fermentation system for biomass resources	1	735 GJ in 8 months (biogas)		31	0	(1), (3)
Waste heat recovery power generation in cement plant	8	155,000	—	462,000	22	(1), (3)
Coke oven gas heat recovery power generation system	1	150,000	—	492,000	0	(1), (3)
Waste power generation system	1	12,000	—	22,000	26	(1), (3)
Total	—	441,000	1,050,000	1,260,031	—	—

CO₂ emissions reduction effect that can be expected from the adoption of our products (selection of main products)

Product	Calculation unit	Standard output		CO ₂ emissions reduction effect [t-CO ₂ /Y]	Number of units until FY2006 (approx.)	Notes and calculation criteria
		Electricity [kW]	Heat quantity [MJ*/h]			
Combined cycle power generation system	1	311,000	—	650,000	13	(2)
Biomass Fixed-Bed Gasification, Combined Heat and Power System	1	157	630	790	1	(1), (3)
Biomass Fluidized-Bed Gasification Power Generation System	1	80	7,890	800	0	(1), (3), under demonstration
Top pressure recovery turbine (TRT) system	1	15,000	—	49,200	42	(1), (3)
Gas engine cogeneration system	1	7,800	20,000	11,000	0	(1) under demonstration

Criteria for calculating CO₂ emissions reduction effect

- (1) The amounts of CO₂ emissions reduction from the generated electricity and heat were calculated in comparison with the amounts of CO₂ produced from equivalent amounts of electricity purchased from electric utilities companies (emission factor: 0.410 kg-CO₂/kWh) or generated by boilers (heavy oil A burning, efficiency 90%).
- (2) For large-scale power generation systems, the CO₂ emissions if the electricity was from an average thermal power generation plant (emission factor: 0.690 kg-CO₂/kWh) was used for comparison and calculation.
- (3) For the use of wasted energy, as well as energy from waste and biomass, the derived energy was all calculated as a CO₂ emissions reduction effect.

* MJ (mega joule) = 0.239 Mcal (mega calorie)

Transportation
Products

Transportation-Related Products That Contribute to Reducing CO₂ Emissions

Kawasaki is making great efforts to reduce CO₂ emissions from our transportation-related products, which is one of our core business areas. Utilizing our accumulated experience of success in this field, we will further refine our technologies for rolling stock and ships, which are known as transportation means that have low amounts of CO₂ emissions, and reduce the environmental impact as much as possible.

Energy Saving Technologies for Rolling Stock

● N700-Series Shinkansen

On receiving the order from Japan Railways (JR), we participated in the development, design and manufacture of most models of a new shinkansen train (bullet train). The new N700-Series shinkansen began operating on the Tokaido-Sanyo Shinkansen line in 2007. This shinkansen has realized energy saving of about 19% compared to the previous model 700 Series when traveling at the same speed of 270 km/h. One roundtrip of the new train between Tokyo and Shin Osaka produces about 2.4 tons less CO₂ emissions than the previous model.*

The N700 Series also incorporates our technologies. For example, we worked on the development of the front end of the train for optimal aerodynamic characteristics that are desirable at high speeds. For that purpose, employing technologies that are also used in the development of aircraft, we conducted 5,000 simulation patterns to realize reduced air resistance and suppression of aerodynamic noise. Moreover, our tilting system makes it possible to maintain comfort for the passengers while reducing the frequency of acceleration and deceleration on curves and realizing energy saving.

These technologies were combined with other improvements, including a new type of hood that covers the entire space between cars, smooth vehicle bodies and the use of more electric regenerative brakes, in the N700 Series to greatly improve its energy efficiency.

We will continue to further develop our technologies and promote the reduction of CO₂ emissions through our products.



N700-series shinkansen

CO₂ emissions reduction effect

2.4 tons

(Tokyo–Shin Osaka roundtrip)

*We calculated this while referring to the Central Japan Railway Company Environmental Report 2007.

Calculation suppositions

- Amount of CO₂ emissions for a one way trip from Tokyo to Shin Osaka on a 700 Series: 4.8 kg-CO₂/seat
- Number of seats: 1,323 seats/train (same for both the 700 Series and the N700 Series)
- Amounts of electricity consumption and CO₂ emissions are assumed to have a proportional relationship

LNG carrier

CO₂ emissions reduction effect

31 tons per day

LPG carrier

CO₂ emissions reduction effect

9 tons per day

Energy Saving Technologies for Ships

● LNG Carrier ● LPG Carrier

In recent years, the demand for natural gas, which is one type of clean energy, has expanded greatly, and the construction of liquefied natural gas (LNG) carriers has increased. In addition, increasing the capacity of LNG carriers and improving their propulsive performance have become issues for reducing fuel costs, which keep rising.

In response, we have developed a 147,000 m³ LNG carrier that is compatible with existing LNG terminals around the world and provided it to many customers. We increased the LNG carrying capacity by 10,000 m³ while keeping the same fuel consumption as the conventional 137,000 m³ LNG carrier by optimizing the hull form and improving propulsive performance. Thus, we have realized streamlined and more efficient transportation for this energy source. As a result, we have achieved a 7% improvement in energy efficiency and a reduction in CO₂ emissions of about 31 tons per day.

Moreover, we have realized energy saving for 80,000 m³ liquefied petroleum gas (LPG) carriers, which are typical mid-speed ships, by adopting our newly developed bow shape named “SEA-Arrow (Sharp Entrance Angle bow as an Arrow)” and our “Rudder Bulb System with Fins (RBS-F),” an energy saving device which efficiently converts the rotation energy of the propeller slipstream into propulsive force. Compared to a conventional ship (79,000 m³ LPG carrier), we have achieved a 7% improvement in energy efficiency and a CO₂ emissions reduction of about 9 tons per day.



LPG carrier



Kawasaki URA Reheat Turbine Plant

Great Fuel Efficiency Improvement for 177,000 m³ LNG Carriers, Which Are the Standard of the New Generation

As LNG carriers continue to become even larger, improvement of energy efficiency for the steam turbine plants that are the propulsion plants for the LNG carriers is sought.

In order to respond to this demand, we have developed the Kawasaki URA (Ultra Reheat Advanced) Turbine Plant as an LNG carrier propulsion plant based on the Kawasaki UR Turbine Plant and the great experience that we have gained with it. This product is a reheat turbine plant that takes steam from the turbine at a middle stage and heats with boilers to raise the temperature and then leads it back to the turbine. Moreover, we have further improved the efficiency of the entire heat cycle by increasing the steam pressure and temperature of the turbine and adopting improvements to the nozzles and blades of the turbine, for example. Compared to a conventional turbine plant, energy efficiency has been improved by about 15%, reducing CO₂ emissions by about 60 t/day.



Illustration of LNG carrier

177,000 m³ LNG carrier



Reheat turbine plant

The 177,000 m³ LNG carriers equipped with the URA turbine plant, which are the standard ships of the new generation, have reduced fuel consumption by about 20% per unit of cargo compared to current 147,000 m³ LNG carriers. This is due to adoption of the URA turbine plant, increased scale and other improvements to propulsion performance. These 177,000 m³ LNG carriers, which are subject to high expectations, will contribute to global LNG transportation.

CO₂ emissions reduction effect

60 tons per day

Project Member Interview

We are aiming to increase orders of LNG carriers that have Kawasaki URA Reheat Turbine Plants with the highest level of energy efficiency in the world.

Since steam turbine plants can effectively use boil-off gas* as fuel, they have come to be used in the propulsion engines of most LNG carriers. However, in recent years, the use of diesel engines and other propulsion engines has increased, and responding to strong demands from customers by improving the energy efficiency of steam turbine plants has become an urgent issue for us. The Kawasaki URA Reheat Turbine Plants for ships provide a solution to this issue while maintaining the advantages of steam turbine plants, including less maintenance, high reliability and a wide variety of fuel selections. With the highest steam pressure and temperature, as well as a reheat cycle, energy efficiency has been improved by about 15%. This performance has been highly evaluated, and we received the Japan Institute of Marine Engineering of the Year 2007 award for outstanding ship equipment. Its use on two 177,000 m³ LNG carriers has already been determined. In the future, we will aim to have it adopted in as many LNG carriers as possible, and we hope to actively advance solutions for customers as we make further improvements and enhancements.

* Boil-off gas: LNG that vaporizes and comes out of the tank

Yoshihiko Toma

Staff Officer, Machinery Planning Section
Initial Design Department, Engineering Division
Kawasaki Shipbuilding Corporation



Battery-Driven Low-Floor Light Rail Vehicle SWIMO and Battery Power System (BPS) for Railways

Make the Most of the Features of Gigacell®

The Gigacell® is a large-scale, nickel-metal hydride battery that is developed by Kawasaki. We have expanded the application of this high-capacity power storage battery, which is capable of charging and discharging rapidly. Taking advantage of its features, it has contributed to the creation of the next-generation light rail vehicle SWIMO and BPS for Railways enabling excellent energy saving.



SWIMO

The LRV was named SWIMO (Smooth Win MOVER) because the goal was to realize (WIN) a vehicle (MOVER) with smooth (SMOOTH) boarding and exiting, and smooth entry into non-electrified segments.



BPS for Railways

Gigacell

Development of a Large-Scale Nickel-Metal Hydride Battery Gigacell with Diverse Potential Applications

The Gigacell has numerous outstanding features which conventional power storage batteries could not offer.

In addition to its high capacity and high-speed charging and discharging characteristics, this battery also has excellent endurance for repeated charging and discharging, allowing long-term usage. It can be used for numerous applications, including stabilization of the output of wind turbine generation systems and photovoltaic systems, which have great output fluctuation, and the regulation of the supply and demand of electricity on microgrids.*

By making the Gigacell compact and fully closed, we are advancing its practical application in battery-driven low-floor light rail vehicle SWIMO and Battery Power System (BPS) for Railways, which provides power directly to overhead lines.

* Microgrid: a system that networks diverse distributed power generation facilities and stabilizes supply and demand using power storage equipment

Gigacell Specifications

Battery specifications	Gigacell for mobile applications
Model	Fully closed
Structure	Non-welded layers
Number of layers	30-cell layers
Nominal voltage (V)	36
Rated capacity (Ah)	200
Energy capacity (kWh)	10
External dimensions (mm) L x W x H	1188 x 213 x 305
Capacity (l)	77
Weight (kg)	200
Volumetric energy density (Wh/l)	130
Gravimetric energy density (Wh/kg)	50
Cooling method	Forced air-cooling
Main applications	Driving vehicles, Battery Power Systems, emergency power source, etc.

Battery-Driven Low-Floor Light Rail Vehicle SWIMO: Friendly to Both People and the Global Environment

Urban transportation, currently centered in automobiles usage, now faces various issues, including increased exhaust gas and greenhouse gas emissions. SWIMO offers transportation methods friendly to both people and the global environment and can solve these issues.

Gigacell Allows SWIMO to Enable Various Advantages

SWIMO uses its driving motor to generate power when braking. This regenerated electricity is stored in the Gigacell and reused. In addition to greatly improving energy saving characteristics, this battery also helps realize various advantages. (Please see the next page for details of how the electricity is regenerated.)

Using electricity stored in the Gigacell, SWIMO has succeeded in test runs of 30 km and more without the electricity supply from overhead lines. In consideration of traffic congestion and other issues, the current plan is to run distances of up to about 10 km without overhead lines in revenue service operation. By establishing recharging facilities about every 10 km, overhead lines can be eliminated in sections, including new routes from the start as well as upon extension of existing routes and where routes intersect, contributing to reduction in construction costs and preservation of the urban landscape.



Test run without power supply from overhead lines in Sapporo

In addition, the Gigacell can provide power in places where the voltage drop occurs due to distance from substations. This allows the distance between substations to be increased and their overall number to be reduced. SWIMO makes use of these advantages and offers various new possibilities for urban transportation.



Entrances and exits close to the ground

Pursuing Human-Friendliness—the Realization of a Barrier-Free Design with Super-Low Floors

The SWIMO is a barrier-free Light Rail Vehicle (LRV), developed to minimize the height difference between platforms and vehicle cabin floors. Additionally, both lead cars have a carbody structure to provide fully flat cabin floor. In order to enable this design, SWIMO has electrical and other components mounted on its rooftop, and also utilizes an extremely compact truck, which was newly developed for this purpose.



Wide, flat passenger compartment

Project Member Interview

We strive to provide solutions for the needs of different communities.

I was in charge of test operations conducted in Sapporo. Sapporo is a city with snowfall and cold temperature. Numerous types of tests conducted in this region helped contribute to implementation and development of SWIMO. SWIMO, which helps protect the urban environment and its appearance and is also easy for riders to use, is a means of transportation that is expected to contribute much to society. We are seeking to expand the use of SWIMO, and want to provide solutions to meet the needs of societies, including the development of rolling stock with different track widths.

Takahiro Maeda
Assistant Manager
Development Engineering
Section 2
Development Engineering
Department
Engineering Center
Rolling Stock Division

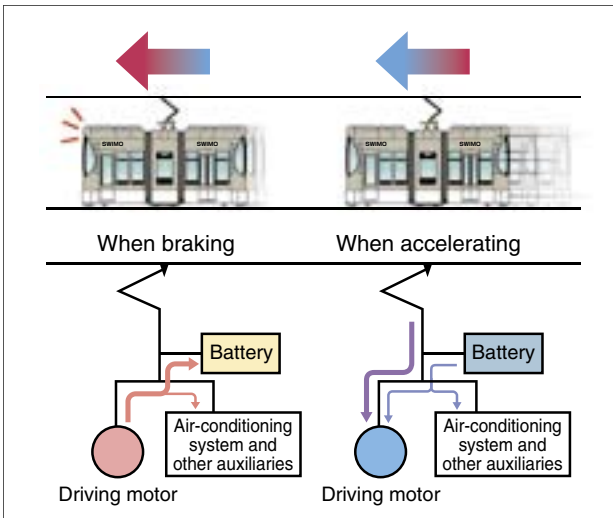


Gigacell® Allows Regenerated Electricity to Be Used Without Waste

When a motor that is the driving force for a train is used to generate power upon braking, the generated electricity is returned to the overhead lines. This system is called “regenerative braking,” and the electricity it generates is called “regenerated electricity.” However, if no other trains that use electricity are nearby, power generation cannot occur (regeneration fails), and the train’s kinetic energy is lost as heat through mechanical braking.

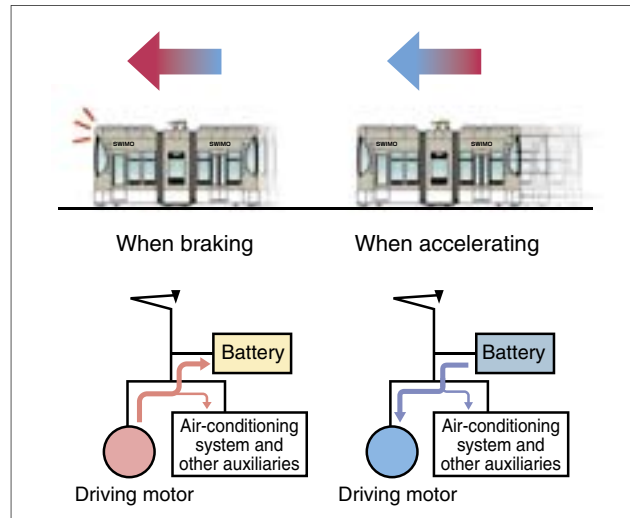
In SWIMO, electricity regenerated upon braking is stored as power in the Gigacell®. In sections with overhead lines, electricity is received through the pantographs and stored along with the regenerated electricity in Gigacell. The stored electricity is used as backup power when the vehicle starts moving and accelerates depending on the voltage of the overhead lines and the amount of charge in the Gigacell. In addition, trains can operate completely on the electricity stored in the Gigacell in sections without overhead lines.

Operation when overhead lines are present



- **When braking (when regenerating):**
Regenerated electricity is used to charge the Gigacell.
- **When accelerating:**
Train power is provided by overhead lines with the Gigacell providing back-up power.

Operation when overhead lines are not present



- **When braking (when regenerating):**
Regenerated electricity is used to charge the Gigacell.
- **When accelerating:**
All train power is provided by the Gigacell.

Seeking to Create Transportation System Friendly to Both People and the Global Environment

SWIMO incorporates various considerations for the environment. For example, the amount of volatile organic compounds (VOCs) in the paint used on the train exterior has been greatly reduced. Moreover, this paint also has high ability to reflect solar heat (insulation from heat), helping reduce the consumption of electricity for air-conditioning. As a next-generation vehicle friendly to both people and the global environment, SWIMO is a means of transportation expected to contribute to the benefit of society in numerous countries and different climates around the globe.



Illustration of SWIMO

Battery Power System (BPS) for Railways

Maximizing the Use of Regenerated Electricity with Battery Power System (BPS) for Railways

In November 2007, we conducted verification tests of Battery Power System (BPS) for Railways that uses the Gigacell in the Osaka Subway System, and investigated its performance, including energy saving and as a countermeasure for regeneration failure and voltage drops. We are currently advancing development with the goal of putting this equipment into use in FY2008.

Battery Power System (BPS) for Railways

Verification of Outstanding Energy Saving and Safety Characteristics

In recent years, the majority of trains in service have a function called “regenerative braking.” With this function, motors which are the driving force for trains generate power upon braking, and the electricity generated (regenerated electricity) is returned to the overhead lines so that other trains can use it effectively. However, if no other trains are nearby, the driving motors cannot function as power generators (regeneration fails) and the kinetic energy of the train is released as heat by mechanical braking.

By connecting high capacity Gigacell capable of charging and discharging at high speed to overhead lines and storing the regenerated electricity to control overhead line voltage, Battery Power System (BPS) for Railways prevents regeneration failure and increases the amount of electricity regenerated from trains, enabling great improvements in energy efficiency.

Six Advantages of Battery Power System (BPS) for Railways

Regeneration Failure Countermeasure

Greatly increases energy efficiency by storing regenerated electricity and preventing regeneration failure.

Energy Saving

Regenerated electricity is stored without waste, and discharged for use when necessary. Energy consumption from substations can also be reduced.

On-Peak Cutting

Reduces on-peak electricity demand during rush hours by receiving electricity from power storage batteries. This helps suppress the power demand on substations.

Safety and Peace-of-Mind

Upon power failure, power is provided by the power storage batteries, making continued operation between stations possible and assuring passenger safety and peace-of-mind.

Voltage Drop Countermeasure

BPS can provide power when the overhead line voltage is low because of the distance from substations, suppressing drops in voltage.

Alternative to Substations

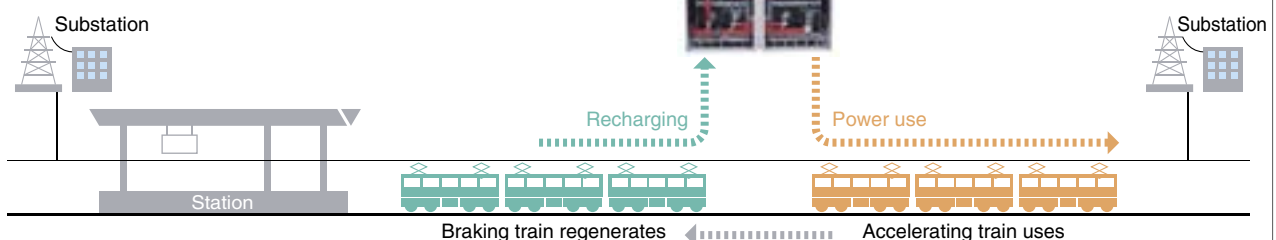
By using BPS instead of substations, costs associated with the construction of new substations can be reduced.

Battery Power System (BPS) for Railways

The size is compact because it can connect directly to overhead lines without the use of control equipment (one unit is about 5.4 m³). In addition, high-speed direct-current circuit breakers also provide a thorough safety measure by preventing short-circuits in emergencies.



Battery Power System (BPS) for Railways



In Keeping with the Public Trust

Action POINT

Kawasaki aims to be a corporation that continues to have the trust of society by developing and reinforcing its corporate structure to promote corporate governance, internal control and compliance.

Reinforcement of Corporate Governance

Policies of Corporate Governance

Led by our directors and auditors, we are building corporate governance systems that are suitable for our Group and seeking to implement them thoroughly. As a unified Group, our fundamental approach to corporate governance is to conduct management that is highly transparent to stockholders, customers, employees, local communities and other stakeholders. Furthermore, while building harmonious relationships with stakeholders, we seek to improve enterprise value by maintaining efficient and sound operation.

Structure of Corporate Governance

In our structure of corporate governance, the directors are in charge of formulating management strategies and supervising the conducting of operations, and auditors, including two outside auditors who have no stake in Kawasaki, conduct auditing, thereby retaining objectivity and neutrality of management monitoring.

We also introduced the internal company system, in which each company autonomously carries out business operations in their own field under the management of each company president assigned by the Board of Directors.

For business operations, executive officers appointed by the Board of Directors are responsible for the conduct of business operations under the executive officer system in order to quickly respond to changes in the operating environment.

Promotion of Group Management

Basic goals and policies for conduct of operations are determined by the Board of Directors. In response, the Group Executive Officer Committee is held by all executive officers to see that the basic goals and policies are carried out thoroughly.

Important business subjects are intensively discussed by the Management Committee, composed of representative directors, and predetermined items are put to review by the Board of Directors. The Management Committee, which also serves as the advisory organ for the President, is responsible for discussing essential management tasks and reviewing management policies and strategies. When necessary, the Committee invites executive officers of subsidiaries to ensure thorough review of the problems.

Incentive salary system is introduced for the directors. On the other hand, the directors are appointed on one-year basis to clarify management responsibility.

Reinforcement and Improvement of the Auditing Function

The auditors, including two outside ones, attend the Board of Directors and the Management Committee meetings, check important documents, have periodic meetings with the representative directors, and investigate the operational and financial status through auditing divisions of the Company and subsidiaries.

The Auditing Department, which is responsible for internal auditing, endeavors to improve the capability of compliance, as the department regularly monitors to make sure the business operations in all the fields of the Group's business activities are conducted in compliance with the applicable laws and regulations as well as internal rules.

The auditors and the Auditing Department share information on auditing through a monthly meeting to reinforce each auditing function. Financial reports of the Kawasaki Group are audited by certified public accountants.

Promotion of Internal Control and Compliance

Fundamental Approach to Internal Control Systems

The mission of the Kawasaki Group is to contribute to the development of society. This Group Mission, including the roles we must fulfill, is expressed as follows in the Kawasaki Group Mission Statement.

Group Mission

**Kawasaki, Working as
One for the Good of the Planet**

In order to realize our Group Mission through the practice of our Mission Statement, it is indispensable that we improve our value to stakeholders and gain the trust of customers, capital markets and society by responding to their expectations.

Based on this recognition, we seek to not only maintain the internal control systems that we have built thus far, but also to improve them through constant review. By doing so, we are making the efficient and legal enterprise structure of our Group even more solid.

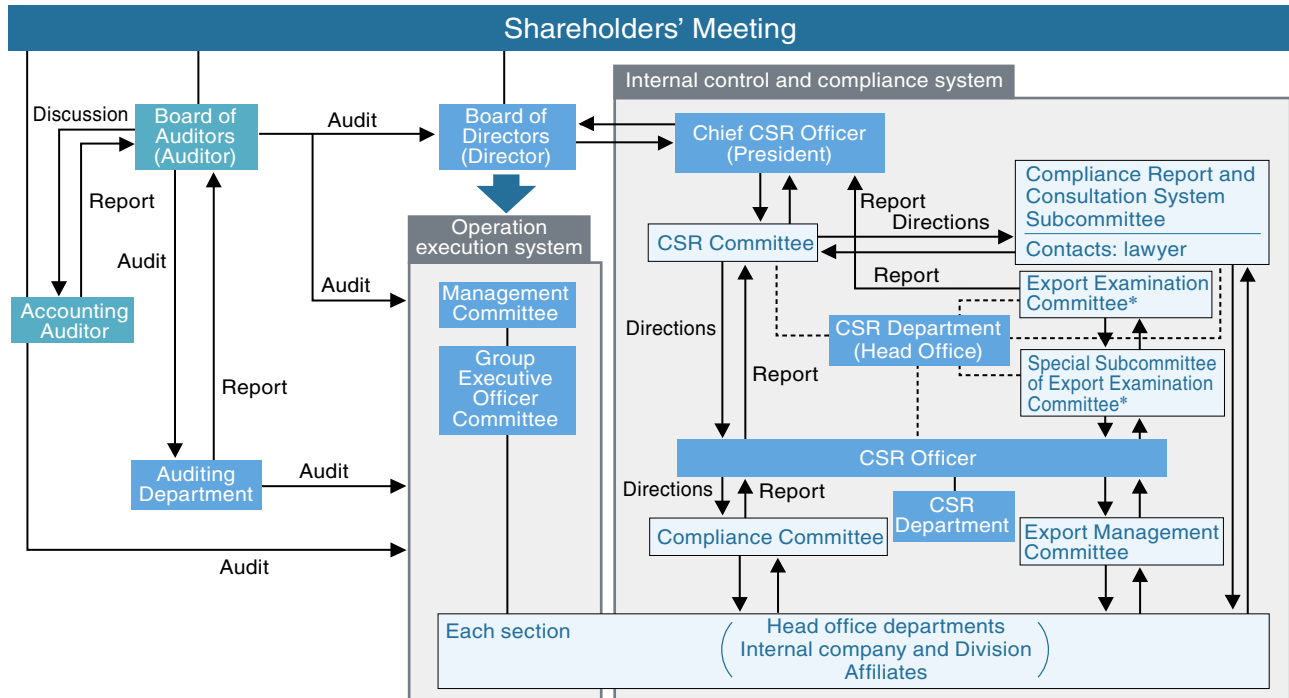
In addition, we established the basic ideas, with which all directors and employees must comply recognizing corporate social responsibility, as the “Kawasaki Heavy Industries Corporate Ethics Rules.” Internal control and compliance is being pursued by every Kawasaki member.

The Fundamental Philosophy of the Kawasaki Heavy Industries Corporate Ethics Rules

1. **Follow the Code of Ethics as a Corporate Member**
We should carry out business activities with truth and proper conduct.
2. **Respect Each Other’s Personality and Human Rights and Practice No Discrimination**
We should respect everyone’s personality and human rights and refrain from segregation and discrimination, sexual harassment, and bullying in order to create and maintain a comfortable work place.
3. **Promote Environmental Conservation**
We should cherish the limited resources of mother nature and actively and voluntarily conduct ourselves with an eye to environmental conservation in order to reduce our impact thereupon, including saving resources and energy, minimizing waste, recycling resources, and preventing environmental pollution.
4. **Comply with Laws, Regulations and Social Rules**
We should realize the importance of legal, social and ethical compliance, and aggressively promote such compliance.
5. **Ensure Appropriate Accounting Procedures and Reliability of Financial Reporting**
We should carry out recording and accounting of corporate activities correctly and precisely according to the best practice specified by laws, regulations and standards.

Efforts to Promote Internal Control and Compliance

Kawasaki Group Internal Control and Compliance System



* The full name of this committee is the Export-related Law Compliance Examination Committee

Establishment of Internal Control Management Rules and Various Related Regulations

Corporation Law and Financial Instruments and Exchange Act require companies to construct internal control system. These laws present the standard of internal control system which companies should implement. The Kawasaki Group has also been diligently advancing preparations in response to the enactment of the Financial Instruments and Exchange Act, which makes the submission of internal control reports obligatory from this fiscal year.

During this preparation process, the lack of clear regulations and instructions as well as other internal control issues in relation to assuring the reliability of financial reports became clear. In order to resolve these issues, we revised existing company regulations and established new ones for individual items that were deficient. In particular, we established Internal Control Management Rules as company regulations in order to comprehensively and systematically regulate internal control itself, set fundamental rules, which are at the core of internal control, and create a company regulation structure that is systematic and free from omissions.

Moreover, we established other sets of additional company regulations. Risk Management Rules were created to systematically organize and operate structures to sort, evaluate and analyze the variety of risks that surround enterprise management, while Crisis Management Rules were made to respond when those risks materialize—in other words, to cope with emergency situations. Division of Duties Management Regulations were arranged to clarify procedures related to the management of the division of current work duties.

Company regulations related to internal control newly established and revised on March 1, 2008

Newly established

- Internal Control Management Rules
- Risk Management Rules
- Crisis Management Rules
- Compliance Report and Consultation System Rules
- Division of Duties Management Regulations

Revised

- Kawasaki Heavy Industries Corporate Ethics Rules
- CSR Committee Rules
- Compliance Committee Regulations
- Authorization Rules
- Board of Directors Rules
- Management Committee Rules
- Information Management Rules
- Data Code Management Rules
- Information System Development Management Regulations
- Standards for Computer-related Resource Safety Measures

Guidebook Distribution

We have been distributing our Compliance Guidebook to all employees, including temporary workers, in order to achieve thorough compliance. We have now published and distributed a new 3rd Edition in order to convey revisions to laws and regulations and other new information and make employees understand them correctly. Moreover, in order to assure thorough compliance with the Antimonopoly Law, which is one of the fundamental rules related to corporate economics, we had already distributed our Antimonopoly Law Compliance Guidebook Vol. 1: Bid-rigging Q&A. In addition, we published our Antimonopoly Law Compliance Guidebook Vol. 2: Private Monopolization and Unfair Business Practices Q&A and distributed it to all office and technical employees.



Compliance Guidebook (3rd edition)



Antimonopoly Law Compliance Guidebook (Vol. 2)

Implementation of Compliance Education

We keep our employees informed about compliance using education for different levels of employees, including new hires, newly promoted key-post employees and executives, as well as E-learning with computers and other methods.

Compliance Report and Consultation System

When employees suspect that there might be a compliance violation in their section, ordinarily, they should first report to and consult with their superiors and the related sections. However, if they suspect that their superiors or that many people in the section might be involved, they might feel that they are isolated, under pressure from those around them or otherwise in a difficult position that makes them wary or afraid to use in-house reporting or consultation. For such situations, we established our Compliance Report and Consultation System.

In this system, an external lawyer consults directly with the people who come to him and listens to their reports. Moreover, with the name of the person who came for consultation kept secret, the situation is reported to the Compliance Report and Consultation System Subcommittee. The Compliance Report and Consultation System Subcommittee, which also has the external lawyer as a member, investigates the situation to determine whether or not there is a violation and decides future measures in response. The external lawyer conveys this directly to the person who came for the consultation.

In order to allow our employees to use this system effectively, we make them aware of how to use it through numerous means, including articles in the Compliance Guidebook that we distribute, in-house intranet notice boards and in-house magazines.



Article introducing the Compliance Report and Consultation System (in the in-house magazine Kawasaki)

Advancing the Development of our Doctor-Heli

Contributing to Safety and Peace-of-Mind

Doctor-Helis are the subject of high expectations as a means of rapidly providing emergency medical service. In addition to rushing doctors to locations where there are injured and ill people so that they can be diagnosed and receive initial treatment, a Doctor-Heli can be used to transfer patients with a doctor attending to a medical facility. In 2001, we delivered the BK117 C-1 as our first Doctor-Heli, and we are now continuing with our newest model, the BK117 C-2. In June 2007, the Doctor-Helicopter Special Law* was established in Japan. We want to focus on expanding the use of our Doctor-Heli in order to contribute to the safety and peace-of-mind of every member of society.

* Law for Special Measures to Secure Emergency Medical Service with Helicopters



Operation of a BK117 C-2 model Doctor-Heli

Making the Helicopter Even More Functional for Users

We are seeking to improve our Doctor-Heli further because we believe that realizing greater usability for every user, including patients, doctors, nurses and even pilots, is a key to providing true customer satisfaction.

Our Doctor-Heli has numerous features, including large clamshell doors at the rear end of the aircraft that make it easy to roll in and roll out the stretcher. In addition, the cabin is spacious and can accommodate up to five people including the patients, a doctor, nurses and others. We are also developing the Emergency Medical Service (EMS) equipment at the core of the Doctor-Heli in consultation with numerous medical professionals. We assure close proximity to the patient by allowing the placement of the stretchers and seats to be adjusted and by making the seats movable and rotatable. In addition, the oxygen-supply device, portable respirator, defibrillator and other equipment are located functionally, and the various medical devices are stowed efficiently in medical panels, cabinets and other contrivances.

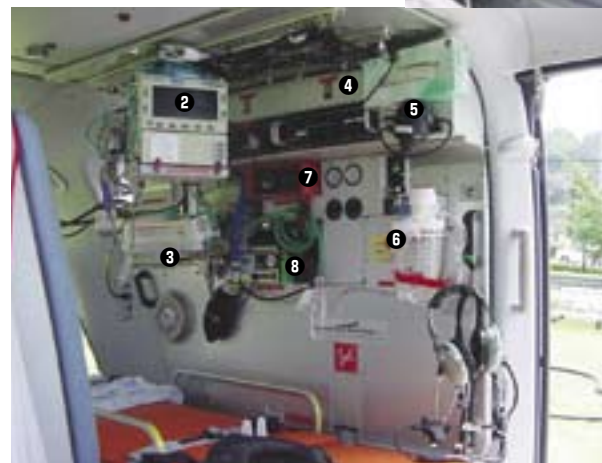
Furthermore, we have made operation of the helicopter easier for the pilot as well with improvements to the cockpit systems. Moreover, the BK117 C-2 Doctor-Heli is produced in Japan, so we have established a domestic system to provide replacement parts within 24 hours in cases of emergency. We can also dispatch engineers who are experts with the model to provide rapid response to user needs.



Large rear clamshell doors and a level, spacious cabin

Main Emergency Medical Service (EMS) equipment

- ① Oxygen bottle case
- ② Vital sign monitoring device
- ③ Syringe pump for intravenous medication
- ④ Medical accessory storage
- ⑤ Spotlight
- ⑥ Oxygen-supply device
- ⑦ Portable respirator
- ⑧ Suction device
- ⑨ Defibrillator
- ⑩ Three-story cabinet





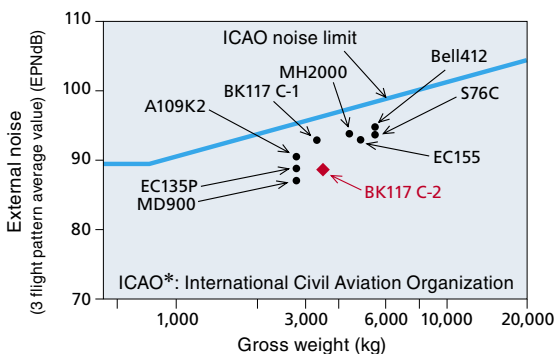
BK117 C-2 Doctor-Heli in flight

Realizing Improved Noise Reduction and Fuel Efficiency, and the Highest Level of Environmental Performance

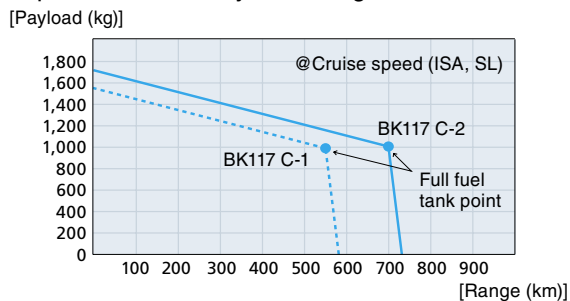
With the BK117 C-2 model, we are improving both flight and environmental performance. Through the adoption of parabolic tips and negative taper main rotor blades, and by incorporating adjustable rotor speed and other functions using the latest technologies, we have realized external noise reductions that greatly surpass international standards.

Moreover, through the optimization of the fuselage aerodynamics, we have improved the allowable load and cruising range. Compared to the previous C-1 model, 10% more freight can be transported with the same amount of fuel consumption, thus contributing to the reduction of CO₂ emissions.

Reduction of External Noise



Improvements of Payload-Range Performance



Thorough Design for Safety and High-Level Quality Control

The BK117 C-2 model is a product that has an important role as a part of society's infrastructure for response to fires, disasters, medical emergencies and other crises. For this reason, thorough design for safety and a high-level of quality control are necessary.

In addition to a fuselage structure that has sufficient strength against impacts, other safety design features include impact-resistant passenger seats that lessen the effect of emergency landings on passengers and an impact-resistant fuel system that uses reinforced rubber fuel tanks. With the advanced quality control skills that we have developed as an aircraft manufacturer, we hope to continue providing products and services that earn the confidence of our customers.

Voice User Voice

We have been making every effort to provide emergency medical services to critically ill patients.

I have been working in emergency medicine for the last 20 years. Over this time, pre-hospital emergency medical services (EMS) in Japan improved with the development of Doctor-Car* systems and helicopter emergency medical service (HEMS) systems called "Doctor-Heli." In April of 2001, our Kawasaki Medical School Hospital started the very first such Doctor-Heli service in Japan. The Doctor-Heli service is one excellent system for bringing doctors to the scene when there are critically ill or severely traumatized victims.

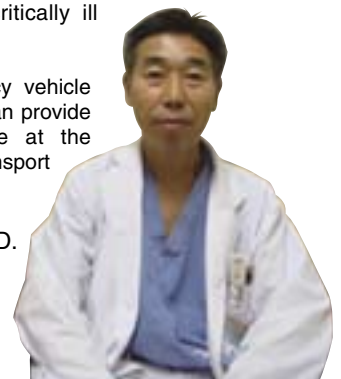
The current BK117 C-2 model has outstanding features such as big doors at the rear of the fuselage and a spacious cabin. These features, which also include many types of medical equipment inside the cabin, make the process of transporting critically ill patients easier and allow us to continue critical medical care in the cabin without difficulty.

I believe that the further development of doctor transportation systems, such as the Doctor-Heli service, in conjunction with the efficient use of other emergency helicopters, such as those belonging to public fire departments, will improve Japanese pre-hospital EMS. Furthermore, I hope that in the near future the EMS system in Japan will be improved more and that there will be closer collaboration among EMS-related organizations so that we can work together to provide satisfactory EMS to the critically ill and trauma victims.

* Doctor-Car: an emergency vehicle that brings doctors who can provide emergency medical care at the scene and during the transport of patients to hospitals.

Ryukoh Ogino, M.D., Ph.D.

Vice Director
Department of Emergency and Critical Care
Kawasaki Medical School Hospital



Creating a Flexible Working Environment



Kawasaki strives to create a workplace in which each and every one of its employees can work positively while they show off their individuality, and we have introduced a variety of systems for this, and strive to enrich their content.

Supporting a Balanced Working Life

We are supporting the realization of balanced working lives as a way to create workplaces where people are able to work positively. Among these efforts, we have introduced our No Overtime Day and Consecutive Vacation Days for Refreshment. For better and for worse, Japanese employees tend to work long hours and take few vacations, so these programs are designed to make them take more time off work to enjoy other parts of their lives.

No Overtime Day

We began implementing a No Overtime Day in April 2006. The details of No Overtime Day vary by workplace, but this is conducted once per week as a rule.

The purposes of establishing a No Overtime Day are to promote the mental and physical recovery of employees by separating work from home life and to create an atmosphere that encourages leaving work soon after the completion of set working hours. Labor and management are working together to implement this system, which was created in agreement between them, by conducting workplace patrols and taking other steps to administrate the system precisely.

In October 2007, we conducted a questionnaire of all employees on company systems as a whole, and included a question about their level of satisfaction with No Overtime Day. The result was that this program received the third highest level of satisfaction among all items on the survey. For this reason, we believe that the implementation of No Overtime Day is meeting employee needs, and we plan to continue it in order to make employees separate work from home life.

Consecutive Vacation Days for Refreshment

We began our Consecutive Vacation Days for Refreshment program in April 2008. In this program, at the beginning of the fiscal year employees are required to set consecutive vacation days for later in the year. When those days come, they must take a vacation from work in this system. Moreover, until FY2007, one day was provided as an anniversary holiday, but we have now expanded this to a two-day vacation.

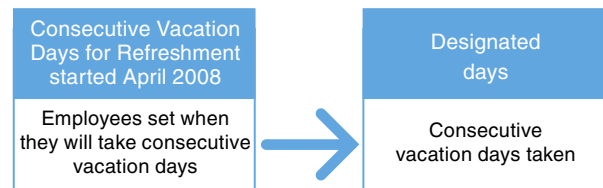
The purpose of the Consecutive Vacation Days for Refreshment system is to promote the use of annual paid vacation days. By taking planned breaks, we hope to help employees become refreshed both mentally and physically and to create a balance between work and private life. Moreover, promoting the use of annual paid vacation days is also a goal of the company from the perspective of supporting the fostering of the next generation, which is discussed next.

Voice Employee Voice

We had been playing futsal after work for some time, but it was difficult to arrange the schedule because of the different workplace conditions of the members. Thanks to the creation of No Overtime Day, it is now easier for us to set the schedule and all get together regularly.



Kawasaki employees sweating it out at a nearby futsal court after regular working hours



Voice Employee Voice

In the past, we had a system for three-day vacations, but it was fairly hard to arrange my work to take three days off at one time. Now, though, taking two consecutive vacation days and linking them with weekends and public holidays makes it easier to arrange with my work, so I think this program is convenient. I have already used Consecutive Vacation Days for Refreshment to take a five-day trip to Kyushu with my family.

System for Fostering the Next Generation

We are providing various forms of support so that all employees are able to continue their jobs when they raise children. We want our employees to be able to continue working positively while balancing it with child-rearing.

In particular, we have received high evaluations for our leading efforts in our childcare leave system and other child-rearing support systems. In 2006, for example, the Hyogo Prefectural Labor Bureau gave us the Family-friendly Enterprise Commendation Prefectural Labor Bureau Director Award.

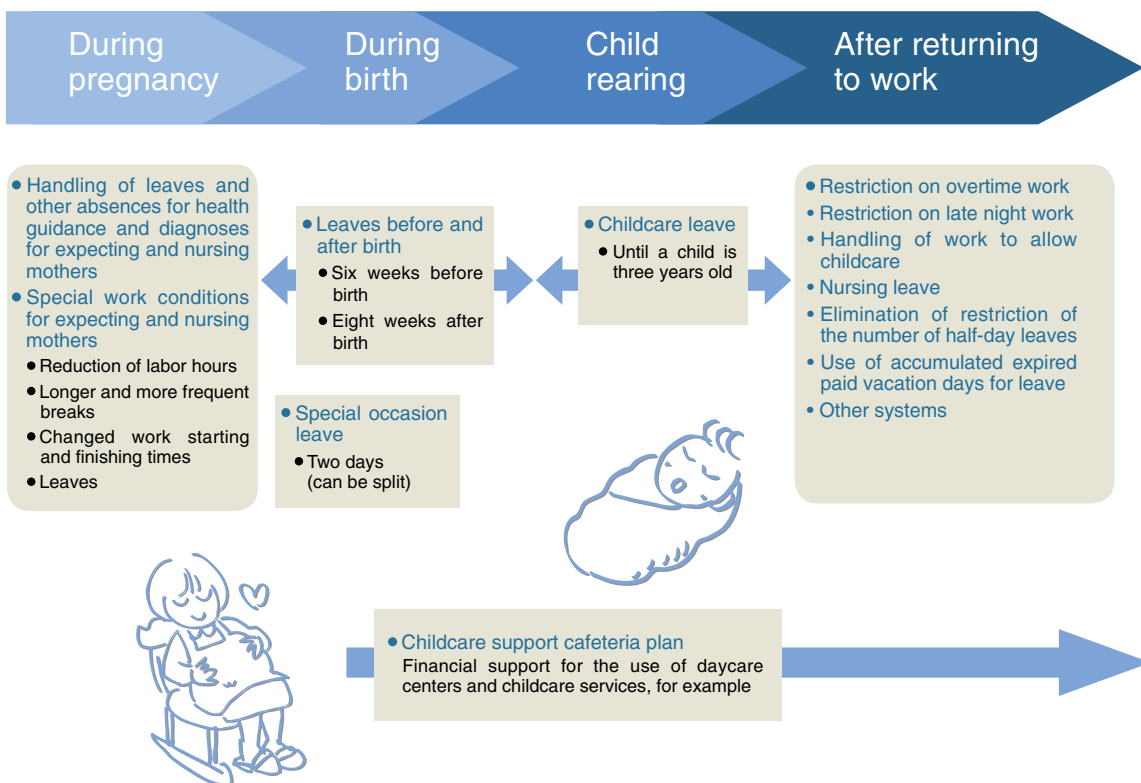
In these ways, we have emphasized the creation of systems, but we are not concerned with systems just as vessels for our policies. We are also trying to examine how to promote their actual use.

With this in mind, in our in-house magazine this fiscal year, we included interviews with employees who have made use of our systems to support the fostering of the next generation. By introducing employees who have actually used these systems to colleagues, we hope to promote understanding of these systems and encourage their use.



Article introducing systems to support the fostering of the next generation (in our in-house magazine Kawasaki)

Main in-house systems



Creating Safer and Healthier Workplace



Kawasaki has proclaimed that protecting the safety and health of its employees comes first, and aims to promote the creation of a healthy workplace and foster various activities in safety management and health management to bring this about.

Safety Management Activities

Promotion and Establishment of Occupational Safety and Health Management System

We are promoting and strengthening risk assessment in the workplace, and we are seeking to steadily improve our safety and health standards by conducting safety and health management activities that continually implement a Plan – Do – Evaluate – Improve cycle. Through such efforts, we are endeavoring to prevent occupational accidents in our workplace and create comfortable workplace environments.

Continued Implementation of the KSKY Movement

Continuing since 2002, the KSKY Movement is one of our important safety policies, with each letter standing for the first letter of a Japanese word meaning “basic rule” for K, “pointing and naming” for S and “predicting danger” for KY. The purpose of the movement is to ensure thorough compliance with basic safety rules and safety checks, enhance sensitivity to danger and toxicity, encourage every employee to willingly participate in safety actions and create a workplace where “mutual cautioning” among employees is a standard practice.

- K: observance of “basic rules”
- S: “pointing and naming”
(conducting checks and making a habit of doing so)
- KY: making a practice of “predicting danger”

Transmission of Safety Technologies and Techniques

As one aspect of our current efforts to strengthen measures to prevent serious or similar disasters, we have made a Safety Expertise Compilation in order to transmit knowledge and expertise related to safety to future generations.

This Safety Expertise Compilation is a collection of examples of improvements and other ideas from every workplace for the realization of essential safety with equipment and machinery. By announcing this Safety Expertise Compilation for all of Kawasaki, we are seeking to further reduce workplace risks and endeavoring to transmit safety technologies and techniques through the utilization of this collection of expertise.

Safety Expertise Compilation sample



Installing safety plugs to prevent accidents with automated equipment

If a worker goes inside a safety fence in a factory while equipment is operating automatically, there is the danger of an accident in which the worker gets dragged into equipment or pinched by a robot. We have installed safety plugs in the inspection doors of safety fences to prevent the occurrence of such accidents. Until these safety plugs are disconnected to stop the machinery and other equipment nobody can enter the fenced facilities.

Occupational Health Management Activities

Specific Health Diagnoses and Health Guidance

Specific health diagnoses and health guidance for employees aged over 40 years and their dependents were begun by our health insurance association in April. We have also been cooperating as a company with the health insurance association in the implementation of these efforts and hope that they will be a beneficial.

1) Determination of the health guidance level by risk factors

- Step 1: evaluate internal fat accumulation risk by waist girth and body mass index
- Step 2: count additional risks from examination results and questionnaires
- Step 3: determine health guidance level group from the results of steps 1 and 2
- Step 4: set the health guidance level taking other conditions into account



Pamphlet ① about physical examinations and health guidance programs

2) Implementation of the health guidance according to the risk of contracting lifestyle diseases

- Information provision:
This allows the recipient to understand their own physical condition based on the results of physical examinations and gives them an opportunity to reconsider lifestyle habits. (Provided annually along with the results of the physical examination)
- Motivation support:
This allows the recipient to consider their own lifestyle habits in order to set behavior targets and aim to continue a new lifestyle after the end of the support program. (Support provided once in principle)
- Active support:
In addition to motivation support, through periodic and continuous support, this also allows the recipient to consider their own lifestyle habits in order to set behavior targets and aim to continue a new lifestyle after the end of the support program. (Continuous support for three or more months)



Pamphlet ② about physical examinations and health guidance programs

Mental Health Measures

Through stress checks at the time of regular health diagnoses, work stress diagnoses and Fatigue Accumulation Self-diagnosis Checks during physical examinations of people who work long hours, for example, we are making efforts to improve stress levels in workplaces. In the future, we also plan to implement line-care education, self-care education and other measures through E-learning.

1) Mental health line-care (E-learning contents)

- Importance of care at the line through examples
- Significance of mental health care in the workplace
- Guidelines for achieving mental health and the role of management supervisors
- Handling consultations with subordinates and the use of mental health consultations
- Mental health crisis management
- Support for employees that return to the workplace
- Improving the workplace environment
- Self-care
- Accurate knowledge about mental health



E-learning study screen for mental health line-care

2) Mental health self-care (E-learning contents)

- Mental health examples
- What is stress?
- Being aware of stress
- Ways of coping with stress
- Mental health consultation system
- Accurate knowledge about illnesses



E-learning study screen for mental health self-care

Toward Symbiosis with Society and People

Action POINT

As a member of society, we hope that we can help promote local communities and nurture their happiness. We are determined to fulfill our social responsibility as a corporate citizen by promoting coexistence with local communities.

Supporting a Collaborative Forest Restoration Project with Kochi Prefecture and the Town of Niyodogawa

We are supporting a forest restoration project that is being promoted by Kochi Prefecture and the town of Niyodogawa. Enterprises will cooperate with the community and local governments in this project to restore the forest for three years starting in 2007 as one part of an environmental conservation project by Kochi Prefecture. The area included in this agreement is 70 ha of forest called the Kawasaki-Niyodogawa Manabi-no-Mori (forest for learning), which is one part of the Niyodogawa managed forest.

In October 2007, with the goal of encouraging interaction with the local people, 13 of our new employees spent four days doing hands-on training in the Kawasaki-Niyodogawa Manabi-no-Mori.

We are also participating in NEDO* Tests for Locally Systemized Biomass Energy, which use Woody Biomass Fluidized-Bed Gasification Power Generation System that we developed, currently underway in Niyodogawa.

*NEDO: New Energy and Industrial Technology Development Organization



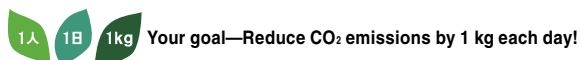
New employees participating in forest restoration



We signed partnership agreements with both Kochi Prefectural Governor Hashimoto (far right) and Niyodogawa Mayor Fujisaki (far left)

Supporting “the I Declare CO₂ Reduction of 1kg 1day 1person” Movement

In the Team Minus 6% global warming prevention effort promoted by the Ministry of the Environment, citizens of Japan are being encouraged to reduce their individual CO₂ emissions by 1 kg per day in order to meet the reduction target of the Kyoto Protocol. We support this movement as a corporation. For example, we held a promotional campaign event at Kawasaki Good Times World from October 1, 2007.



Your goal—Reduce CO₂ emissions by 1 kg each day!

Cooperation in a Petition Effort to Restore the Seto Inland Sea

With the reduction of the natural coast and the land reclamation in the Seto Inland Sea that has occurred until now, the environments of its coastal and shallow sea areas have been changed greatly. Facing these conditions, we are cooperating with the Seto Inland Sea Environmental Conservation Conference of Governors and Mayors, as well as other groups, in an effort to gather signatures on a petition calling for legal measures to promote the restoration of the Seto Inland Sea. For collecting over 15,000 signatures from employees and their family members, we received a certificate of appreciation from Hyogo Prefecture as an enterprise that makes proactive efforts for the environment.



Presentation ceremony for certificate of appreciation

Participating in Hyogo Canal Beautification as a Company Based in Kobe

Kobe is a beautiful city that features Hyogo Canal, Japan's largest canal. As a company based in Kobe and as a member of the Hyogo Canal Association, we participate in volunteer cleaning activities to keep Hyogo Canal beautiful.

The Hyogo Canal Association was established in 1971 to keep the canal beautiful for our children and grandchildren through “purification of the water and beautification of the surrounding landscape.” This association cooperates with the government and contributes to the local community. Numerous enterprises in the neighborhood of the canal now agree with its mission and participate in beautification efforts.



Our employees cleaning with members of the Hyogo Canal Association

Donation of Disaster Prevention Training Equipment to Promote the Security of the Community

Kawasaki Precision Machinery donated disaster prevention training equipment (fire fighting challenger, emergency call training set, etc.) to the Kobe City Nishi Fire Station so that it could be used in citizen disaster prevention training. This is the third time that we have donated equipment to the Kobe City Nishi Fire Station. At the acceptance ceremony held on February 28, 2008, Kobe City Nishi Fire Station Chief Kanagawa gave us a certificate of appreciation from the Mayor of Kobe for our contribution to the local community.



Acceptance ceremony with staff of the Kobe City Nishi Fire Station

Donations to Support Areas Stricken by Disaster

● Support for Recovery from Cyclone Damage in Myanmar

Kawasaki Plant Systems contributed 5 million yen to support the victims of the cyclone that struck the Union of Myanmar in May 2008.

● Support for Recovery from the Earthquake Disaster in China's Szechwan Province

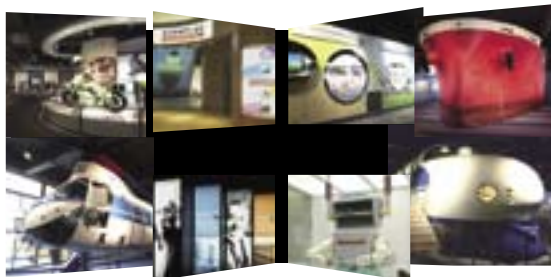
Kawasaki Heavy Industries, Kawasaki Shipbuilding, Kawasaki Precision Machinery and Kawasaki Plant Systems contributed 20 million yen to support the victims of the large-scale earthquake disaster in China's Szechwan Province that occurred in May 2008.



Handing over the contribution list at the Chinese Embassy on May 19

Deepening Communication with the Community at Kawasaki Good Times World

On May 17, 2006, we opened Kawasaki Good Times World, our corporate museum. The goal of this museum is to allow as many people as possible to experience the "wonders of technology" and the "importance of craftsmanship." We also established this facility in order to deepen communication with members of the community. Starting with our history that is over 100 years long and accurately showing changes through the eras, we introduce our representative products for the land, sea and air that have contributed to the development of society with our leading-edge technology. Moreover, the museum also holds various events and other programs as a part of our efforts to communicate with the local community.



Kawasaki products that have contributed to the development of society on display at Kawasaki Good Times World

Over 4,300 People Visiting Our Model Train Running Event

We held our second model train running event of the year in September 2007. This event had numerous attractions including the presence of 2,500 model train cars. Over 4,300 people attended during two days.



Generations of historic bullet train models shown together

Vissel Kobe Public Chat and Autograph Session

We are supporting the Vissel Kobe J1 football club by, for example, being a uniform sponsor. In December 2007, we held a public chat and autograph session at Kawasaki Good Times World with Vissel players Yoshito Okubo and Kang Jo Park. Many fans came to this fun event, which had an at-home atmosphere, and took photos with and interacted with the players.



Public chat and autograph session

Promotion of Environmental Management



“Environmentally conscious corporate management” is one of the priority initiatives of our medium-term business plan “Global K.” This is our determination to commit ourselves to the betterment of the environment in every aspect of our business activities through conducting business with a focus on reducing the environmental impact of both our products and our production activities.

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

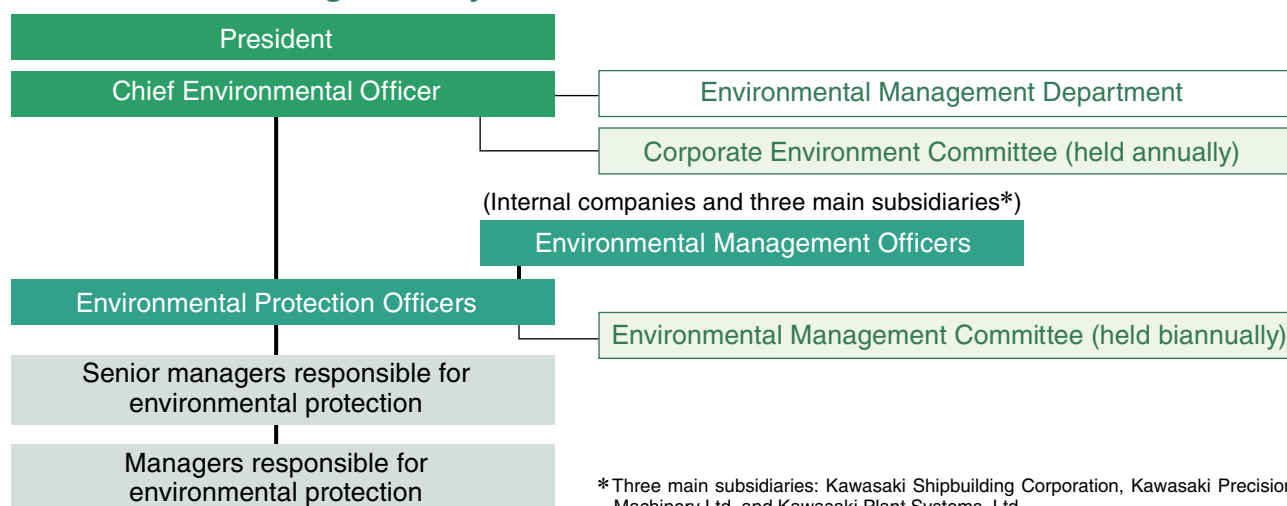
In 2003, Kawasaki established the 2010 Environmental Vision: “What Kawasaki Should Be in the Year 2010” as guidelines for seeking the improvement of environmental management. In pursuit of this vision, we undertake environmental activities under our Environmental Management Activities Plan, which is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

In order to realize our vision of What Kawasaki Should Be in the Year 2010, we began the 6th Environmental Management Activities Plan in FY2008. In this, we have included systems that allow follow-up with effective efforts to further promote environmental management based on the medium-term business plan “Global K.” For example, we have incorporated policies related to reducing the amount of greenhouse gas emissions and reducing environmental risks into the business plan.

The 2010 Environmental Vision: “What Kawasaki Should Be in the Year 2010”

Environmental Philosophy	<ul style="list-style-type: none"> • Actions by all 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.
Environmental Management	<ul style="list-style-type: none"> • Implementation of an Environmental Management System (EMS) and actions are taken based on this EMS by all 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.
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.
Environmentally Conscious Production	<ul style="list-style-type: none"> • Administrative penalties and administrative measures are avoided, and voluntary control standards based on the needs of society are established to improve environmental control levels. • Every production activity is free of irrationality and waste to enhance the efficient utilization of resources and energies. • Total greenhouse gas emissions in FY2010 are 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 hazardous chemical substances is reduced.
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.

Environmental Management System



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

Establishing Internal Systems for the Reduction of Greenhouse Gas Emissions

● Strengthening Activities by Coordinating and Integrating Them with Our Business Plan

The First Commitment Period of the Kyoto Protocol started this year, increasing the opportunity to reduce greenhouse gas emissions worldwide and prevent global warming. At the G8 meeting of environmental ministers in May, the Toyako Summit in July and other international conferences held successively in Japan, creating a global framework after the Kyoto Protocol has been an important topic of discussion. Common recognition of the importance and urgency of preventing global warming is spreading worldwide.

In FY2008, Kawasaki began our three-year 6th Environmental Management Activities Plan. In this 6th plan, we place great emphasis on the reduction of greenhouse gas emissions, and we are also focusing on strengthening its promotion to increase the results of our activities through follow-up with our business plan. For example, we actively study the use of cogeneration and photovoltaic systems, energy saving lamps and other equipment with reduced environmental impacts when building new factories and renewing equipment.

At the same time, we are promoting the reduction of greenhouse gas emissions through our production activities, such as, conducting energy saving diagnoses of our plants, eliminating energy waste and improving energy efficiency in production processes. At our offices, we are turning off lights during lunch breaks and after ordinary working hours and putting other energy saving efforts into practice.

We also continue to encourage employees to reduce the use of cooling and heating energy by wearing clothes that are appropriate to the season (so-called, Warmbiz, Coolbiz). Moreover, we are continuously educating employees to increase their awareness of the importance of their individual behavior for the prevention of global warming not only at work but also at home.

To manufacture Kawasaki products in our environmentally conscious plants, without energy waste or toxic emissions, is to surely contribute to the prevention of global warming also to achieve high levels of customer satisfaction, which is the essence of our business. We will continue to endeavor for the advancement of environmental management in both our production activities and in our products and technologies themselves, because the reduction of CO₂ emissions is one of the most important issues for our management.

Yasuo Murata
Chief Environmental Officer
Senior Manager of General Administration Department
(executive officer)



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 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 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.

Achievements and Appraisal of Environmental Management Activities

Toward Our Environmental Vision: "What Kawasaki Should Be in the Year 2010"

Action POINT

In 2003, Kawasaki established the 2010 Environmental Vision: "What Kawasaki Should Be in the Year 2010" as guidelines for pursuing the improvement of environmental management. As 2010 approaches, we have set the 6th Environmental Management Activities Plan (for FY 2008 to 2010), and we are working to strengthen and advance activities to achieve targets.

5th Environmental Management Activities Plan (FY 2006 to 2007)	Achievements of the 5th Environmental Management Activities Plan (FY 2006 to 2007)	Evaluation
Environmental Philosophy Raising the level of environmental awareness of employees in the Kawasaki Group		
a. Promoting the construction of an environmental education system through the use of IT b. Continuation of activities to provide information to educate employees in environmental issues	a. Created environmental E-learning system and put it to use throughout Kawasaki b. "Message from the President," "Environmental News" and other internal publications were issued to promote environmental education.	A A
Environmental Management Promotion of environmental management to increase the social trust of the Kawasaki Group		
a. Promoting the development of EMS among our subsidiaries around the globe b. Promoting risk review activities to reassess environmental risks – "Understanding of environmental risk" and EMS review based on that viewpoint c. Establish an environmental risk management system – Implementation of appropriate and quick response on the part of the entire Group based on legal compliance d. Development of an environmental management information system for the entire Kawasaki Group	a. Continued enlarging extent of EMS development; completed for 46 of 59 companies in Japan and 6 of 13 companies abroad b. Determined latent risks at every plant and incorporated measures in business plan c. Reconfirmed suitable treatment of waste, for example, and arranged systems for compliance with laws and regulations d. Investigated objectives related to expanding the extent of environmental management data collection and improving timeliness	B B B C
Environmentally Conscious Products Contribute to the sustainable development of society through technologies and products conducive to environmental impact alleviation		
a. Reduction of environmental impact throughout the product lifecycle b. Increase in providing green products	a. Evaluated environmental performance (CO ₂ emissions reduction effect, etc.) for main products b. Started green procurement in our Rolling Stock Company (implemented in 4 divisions) b. Put battery-driven low-floor light rail vehicle SWIMO, high-efficiency gas engine power generation systems and other new products into use	A A A
Environmentally Conscious Production Compliance with laws, regulations, and agreements related to the environment / Promotion of environmental impact alleviation in production activities		
a. No administrative penalty, measure, etc. b. A reassessment of voluntary control standards complying with revisions and records of related laws, regulations, and agreements c. Further examination of problems for measuring and reducing the amounts of resources and energy input in production processes d. Reduction in total greenhouse gas emissions toward the FY2010 goal e. Reduction in total waste emissions toward the FY2010 goal f. Continued effort to achieve zero emissions and expansion of this activity throughout the entire Group g. Implementation of hazardous chemical substances reduction program – Reduction of the total emitted amount of VOCs toward the FY2010 goal – Reduction of the handled amount of hazardous chemical substances toward the 2010 goal – Drafting of a plan for the disposal of waste containing PCBs	a. Implemented through guidance to prevent recurrence in response to administrative measures and warnings that occurred b. Promoted thorough compliance with laws and regulations, including the setting of compliance standard values c. Investigated status of energy use at every plant, and included energy saving measures in business plan d. Greenhouse gas emissions increased by 0.3% compared to FY2006 due to increased business scale (2.9% decrease per basic unit per net sales) e. Total waste emissions increased by 4.2% compared to FY2006 due to increased business scale (0.8% increase per basic unit per net sales) f. 96% recycling rate g. 5.9% reduction in major VOC (toluene, xylene, ethyl benzene) emissions compared to FY2006 g. 1.1% decrease in the amount of harmful heavy metals handled compared to FY2006	C B B C C C B C C
Environmental Communication Improvement of social credibility toward sustainable growth under the viewpoint of corporate social responsibility (CSR)		
a. Improvement of information disclosure b. Promotion of communication with stakeholders c. Positive cooperation in environmental activities with national and local governments	a. Made contents of The Kawasaki Report - Environmental and Social Responsibility more thorough and promoted information disclosure	A

(Evaluation Criteria) A: Achieved; B: 70% or higher achievement rate; C: Less than 70% achievement rate

6th Environmental Management Activities Plan (FY 2008 to 2010)	Priority Initiatives in FY2008
Environmental Management Promotion of environmental management to increase the social trust of the Kawasaki Group	
1. Follow-up incorporated in business plan 1) Efforts to reduce greenhouse gas emissions a. Total quantity reduction target: 6% reduction compared to FY1990 total b. Establish evaluation by basic unit per net sales 2) Reduce latent risks through environment-related equipment plan a. Determine latent risk measures and budgeting plan b. Determine plan for renewal of specific environmental equipment that is aging c. Determine measures and budgeting plan for the reduction of hazardous chemicals emissions d. Determine PCB disposal plan 2. Environmental risk management 1) Conduct environmental conservation activities and risk management based on EMS a. Complete development of EMS at subsidiaries in Japan and abroad b. Investigate improving the precision of environmental data and expanding the extent of collection 2) Risk management through review of risks in production and environmental equipment – Rank the degree of danger in target equipment through latent risk evaluations (Reflect in environment-related equipment plan) 3) Establish environmental risk management systems – Thorough compliance with laws and regulations, suitable and rapid response for reporting and consultation 4) Thorough compliance with environmental laws, regulations and agreements, etc.	1) Efforts for CO ₂ emissions reduction a. Implement thorough independent reduction effort in every division through energy saving diagnosis b. Set targets based on basic unit per net sales 2) Rank equipment with high degrees of danger using risk review evaluations a. Subject: wastewater treatment equipment b. Equipment that has already undergone risk review and equipment that is pending at divisions c. Establish equipment investment plan for the reduction of the quantity of hazardous chemicals handled 1) Develop EMS in the Kawasaki Heavy Industries Group a. Achievement rate: Japan (87%), abroad (53%) b. Promote use of environmental data collection management system in environmental management 2) Identify latent risks in production and environmental equipment based on environmental risk reviews a. Atmospheric pollution prevention-related equipment b. Coating-related equipment 3) Build smooth management systems after the occurrence of environmental problems 4) Review the environmental management rules as well as the EMS regulations of every division
Environmentally Conscious Products Contribute to the sustainable development of society through technologies and products conducive to environmental impact alleviation	
1) Evaluate reduction of environmental impacts (CO ₂ , SO _x , NO _x , etc.) in product lifecycles 2) Expand provision of green products – Determine design and procurement guidelines to improve green procurement level in product composition	1) Investigate evaluation methods for the reduction of environmental impacts in the lifecycles of main products and report them in our Report - Environmental and Social Responsibility. 2) Announce green products and simultaneously improve green procurement level in similar products
Environmentally Conscious Production Efforts to reduce environmental impacts with production activities that consider the production efficiency	
1) Efforts to reduce waste a. Reduce total amount of emissions by 10% compared to FY2002 using basic unit per net sales b. Establish basic unit per net sales evaluations c. Maintain zero emissions 2) Reduce quantity of hazardous chemicals handled toward FY2010 target a. VOC (toluene, xylene, ethyl benzene) b. Dichloromethane c. Heavy metals (hexavalent chromium, lead, cadmium)	a. Investigate developing a scheme to reduce the total amount of waste emissions b. Set targets based on basic unit per net sales 2) Execute and follow up reduction plans in every division a. VOC (toluene, xylene, ethyl benzene) c. Heavy metals (hexavalent chromium, lead)
Environmental Communication Efforts to improve mutual trust with stakeholders	
1) Internal environmental education and awareness-raising efforts – Improve the environmental consciousness for Kawasaki Group employees as a whole through E-learning 2) Disclose information to stakeholders – Make corporate stance showing the contribution to the global environment available in a report 3) Actively cooperate in community environmental activities	1) Complete implementation of education for Kawasaki and three main subsidiaries* 2) Disclose information through publication of our Report - Environmental and Social Responsibility to improve social trust 3) Promote community activities

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

Environmental Management Activities



Kawasaki makes the implementation of thorough environmental management system (EMS) the foundation of our environmental management activities. In addition, we are working to develop EMS and continuously improve it in our businesses. Moreover, we are actively conducting environmental risk management to prevent environmental trouble as well as undertaking education and awareness-raising activities to increase employee consciousness.

Further Development of EMS

All the production bases of Kawasaki Heavy Industries and our three main subsidiaries¹ in Japan have acquired ISO14001 certification. Now, we are promoting the development of EMS at our subsidiaries in Japan and abroad.

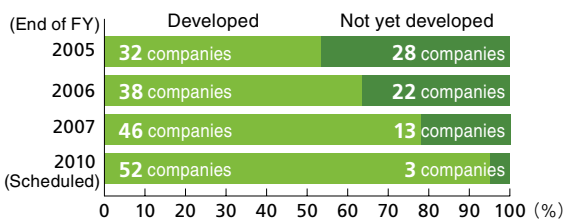
ISO 14001 Certification Acquisition

	Internal Company		Date acquired	Registration
Kawasaki Heavy Industries	Rolling Stock Company	Rolling Stock Division	2002	LRQA
		Construction Machinery Division	2000	JICQA
		Industrial Facilities and Tunneling Equipment Division	1999	JICQA
	Aerospace Company		2002	BSK
	Gas Turbine & Machinery Company	Gas Turbine Division	2000	LRQA
		Machinery Division	2000	NK
Consumer Products & Machinery Company		2000	DNV	
Three main subsidiaries	Kawasaki Shipbuilding Corporation	Kobe Works	2002	NK
		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

By the end of FY2007, 46 of our 59 subsidiaries in Japan had completed the development of EMS.

Status of EMS Development at Japanese Subsidiaries²



Of the 13 overseas companies where we are seeking to develop EMS, one more company, Kawasaki Precision Machinery (Suzhou) Ltd., completed EMS development in FY2007. For the remaining seven 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.

¹ Three main subsidiaries: Kawasaki Shipbuilding Corporation, Kawasaki Precision Machinery Ltd. and Kawasaki Plant Systems, Ltd.

² Excluding three main subsidiaries

Environmental Risk Management

Environmental Risk Review

We undertook environmental risk reviews for wastewater treatment facilities and drainage channels, for example. At each plant, we evaluated risks and investigated measures from every perspective including manufacturing, occupational safety and environmental conservation. We also shared this information throughout our companies and summarized points for improvement. In addition to incorporating measures into our business plan based on evaluation results, we also expanded the scope of risk reviews to promote the reduction of environmental risks.

Strict Compliance with Environment-Related Standards

We defined a "compliance standard value" as the strictest value among the values set by legal standards, regulations, and agreements. In addition to conducting thorough compliance based on our compliance standard values, we also set even more strict "internal management standard values," and have developed management systems to take preventative measures before exceeding compliance standard values.

Compliance with Laws & Regulations

Violations and Accidents during the Past 5 Years

FY	2003	2004	2005	2006	2007
Judicial/Administrative Penalties	0	0	1	0	0
Administrative Measures	0	0	1	1	0
Administrative Warnings	0	0	0	5	4

- 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

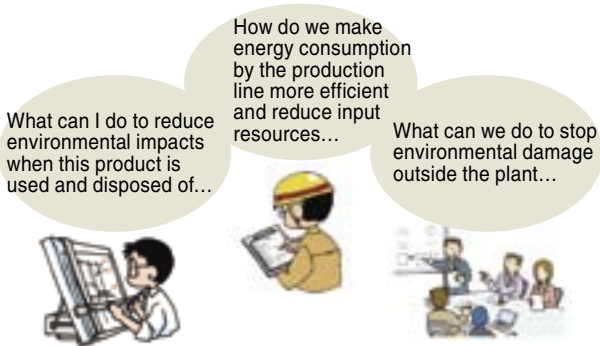
Administrative Warnings:

- Exceeded regulated value for the total quantity of COD emitted into the public water (two incidences at the Banshu Works)
- During waterway cleaning accumulated sludge was washed into the sea (Akashi Works)
- Oil that leaked from a pipe flowed through a rainwater drainage gutter into a canal (Hyogo Works)

Conducting Environmental Education for All Employees by E-Learning

In January 2008, we began to provide environmental E-learning that can be distributed to every employee directly through the corporate intranet. In addition to explaining our organized activities, we are also emphasizing contents that encourage all our employees to understand the importance of putting behavior that is considerate of the environment into practice in their work.

Environmentally Conscious Behavior by Each Employee in Their Work and for the Company



Making the most of the advantages of E-learning, we are implementing it for all employees, from the chairman, the president and other managers to temporary workers. Course participants respond to questionnaires, and their responses are used to improve later steps.

As of June 2008, about 7,700 employees, 65% of the total, had been offered E-learning and 94% of those had taken a course. During FY2008, we plan to have every employee at Kawasaki Heavy Industries and our three main subsidiaries complete a course.

With environmental E-learning as a starting point, we continue seeking to increase the consciousness of every employee and striving to fulfill the Kawasaki Group Mission Statement goal of contributing to the environment through business activities and the creation of products that are friendly to the environment.



Encouraging Further Awareness

During Environment Month every June, a "Message from the President" about the environment is sent to all employees. In FY2008, it was about the importance of preventing global warming and called for further cooperation in greenhouse gas reduction efforts. Moreover, to give all employees direct opportunities to think about the environment, we ask them to make Environment Month Slogans. We also undertake continuous efforts through encouraging further awareness, including the Environmental News, which introduces environmental activities and improvement examples from every plant, and "Eco Mind," a part of our in-house magazine Kawasaki, which educates about environmental consideration in the local community and at home.



"Message from the President" about environmental management

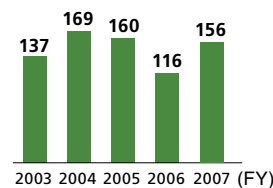
Environmental News (released 4 times a year)

Serialized column "Eco Mind" in the in-house magazine Kawasaki

Cultivation of Qualified Managers

Since 1997, we have continuously held ISO 14001 internal environmental auditing training for all of Kawasaki. In FY2007, 156 auditors were certified, including staff at our subsidiaries, bringing the total since 1997 to 1,800 or more. Moreover, we are also making efforts to cultivate the qualified managers that are required by environment-related laws and regulations.

Number of Newly Registered ISO 14001 Auditors (including subsidiaries)



Number of Qualified Pollution Control Managers

Air	81
Water	85
Noise, Vibration	56
Others	17
Total	239

Number of Qualified Energy Manager

60

Environmental Accounting



Environmental accounting for FY2007 is shown below. The graphs show yearly changes in environmental investments, environmental costs, and economic effects. We grasp the cost-effectiveness of environmental management so as to provide feedback to plan and review of measures for the next year.

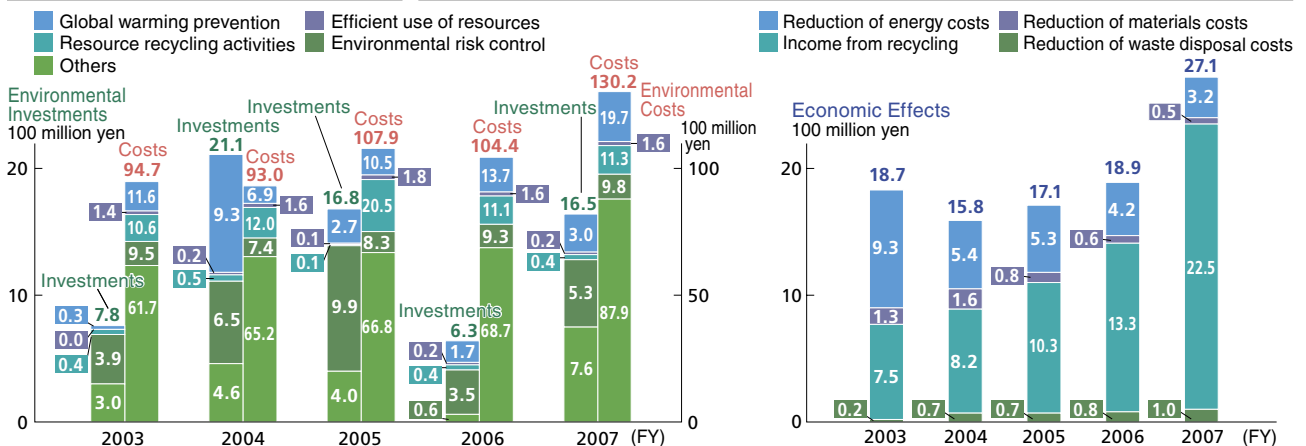
Environmental Accounting Calculations for FY2007

These figures 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.¹ Period: April 1, 2007 to March 31, 2008

Millions of Yen

Item		Environmental Investments	Environmental Costs	Economic Effects	Environmental Preservation Effects: Reduction as compared with previous FY (★ is an increase)	
Business area costs	Global warming prevention	300	1,968	Reduction of energy costs 317	Energy consumption Reduction	6,745 TJ ² ★95 TJ
					Greenhouse gas emissions Reduction	312,567 t-CO ₂ ★465 t-CO ₂
	Efficient use of resources	18	156	Reduction of materials costs 46	Materials input Reduction	604,224 t 38,464 t
					Water consumption Reduction	7,336,000 m ³ 334,000 m ³
	Resource recycling activities	24	922	Income from recycling 2,251 Reduction of waste disposal costs 99	Waste emissions Reduction	75,148 t ★3,020 t
					Amount of waste recycled Recycling ratio	72,228 t 96 %
	Environmental risk control	529	979	—	SOx emissions Reduction	14 t 5 t
					NOx emissions Reduction	181 t 48 t
COD emissions Reduction					13 t 2 t	
Subtotal		889	4,229	2,713	—	
Comparisons w/ previous FY		157%	118%	138%	—	
Upstream/downstream costs		172	3,939	0	—	
Management activity costs		0	461	—	—	
R&D costs		475	4,188 ^{*1}	—	—	
Social activity costs		12	142	—	—	
Environmental damage compensation costs		101	58	—	—	
Total		1,649 ^{*2}	13,017	2,713	—	
Comparisons w/ previous FY		263%	126%	138%	—	

Item	Total	Item	Proportion
Total investments in FY2007	27,592 ^{*3}	Percentage of investments (Environmental investments ^{*2} /Total investments ^{*3})	6%
Total R&D costs in FY2007	35,002 ^{*4}	Percentage of R&D costs (Environmental R&D costs ^{*1} /Total R&D costs ^{*4})	12%

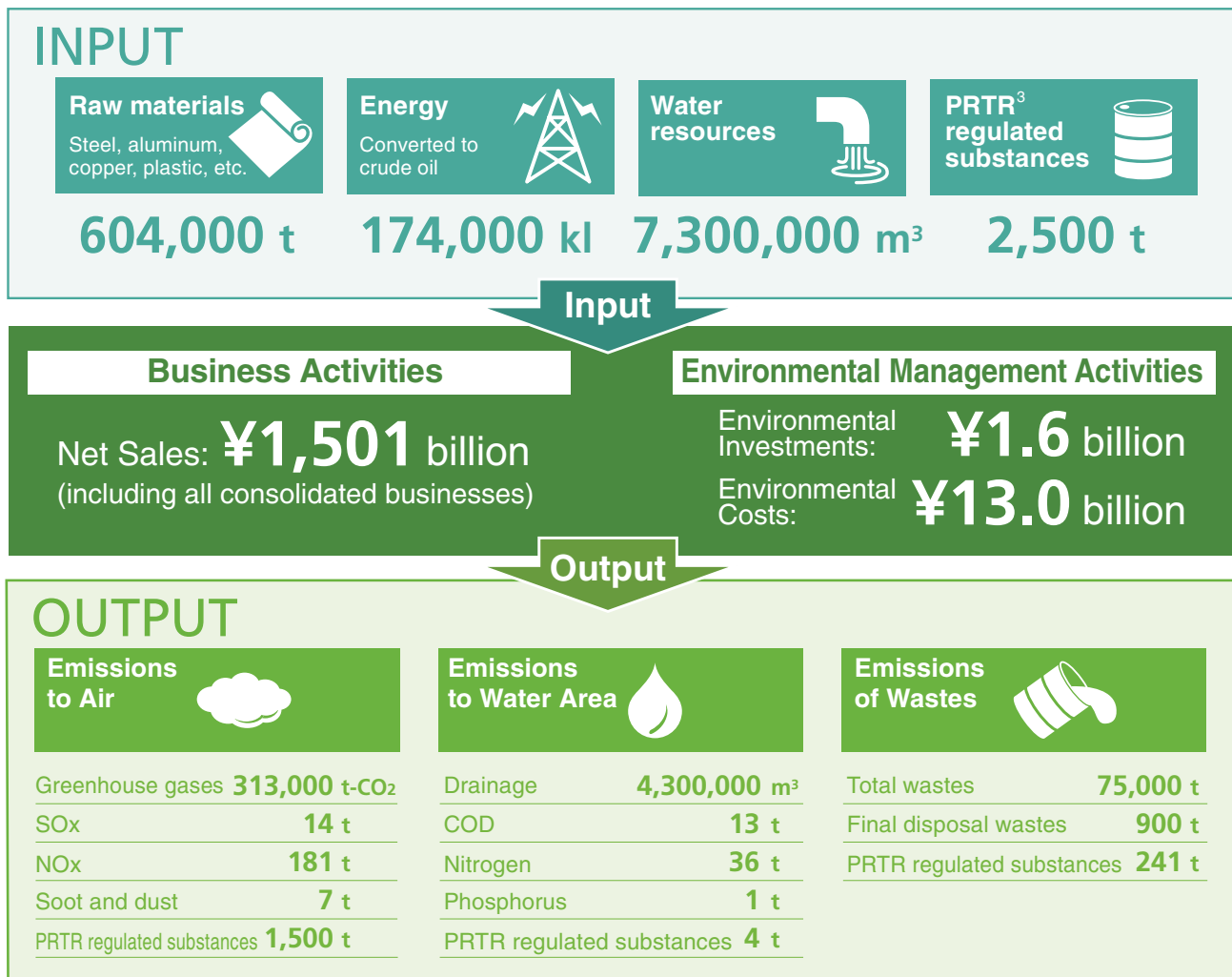


¹ Three main subsidiaries: Kawasaki Shipbuilding Corporation, Kawasaki Precision Machinery Ltd. and Kawasaki Plant Systems, Ltd.
² TJ: terajoules (10¹² J)

Material Balance of Business Activities

Action POINT We produce various products used on land, at sea and in the air. Raw materials, energy and water are input to those business activities, from which a variety of substances are emitted to the air or waters. We are trying to reduce environmental impact by those business activities by monitoring input and output.

Summary of Environmental Impact in FY2007



TOPICS **Ranked 14th for Return on Carbon (ROC) among the 100 Manufacturing Businesses with the Highest Consolidated Net Sales**

In the material balance of our business activities, we seek to create the maximum profit with the least amount of CO₂ emissions. A management index called return on carbon (ROC) focuses on this goal. Considering the possibility that the amount of CO₂ emissions could be calculated as a cost in the future, we believe that ROC is not merely an environmental index, but rather that it will eventually become an important management index related to earnings. When the Boston Consulting Group calculated the FY2006 ROC for the 100 manufacturing businesses with the highest consolidated net sales and ranked them, our ROC was 208, earning us the 14th highest ranking and high praise.

Return on carbon (ROC) calculation

$$ROC = \frac{\text{Operating income in Japan (millions of yen)}}{\text{Amount of CO}_2 \text{ emissions (thousands of tons)}}$$

From Nikkei Business (July 7, 2008 edition)

³ PRTR: Pollutant Release and Transfer Register

Efforts for Consumer Products, including Motorcycles and Personal Watercraft



In fields such as motorcycles and personal watercraft, we set clear targets for environmental conservation, namely cleaning exhaust gas, 3R, elimination, reduction, and management of environmental substances of concern, and we continue our efforts to fulfill those targets.

Cleaning Exhaust Gas

In FY2007, continuing from the previous year, we installed computerized fuel injection systems in three of our light motorcycle models—the Ninja 250R, the KLX250 and the D-TRACKER X—and took other measures to achieve much cleaner exhaust. After fully complying with the Japanese motorcycle emission regulations, which became stricter in FY2006, these models were shown at the 2007 Fall Tokyo Motor Show and began to be sold in FY2008.

In these 3 models, we have adopted atomization injectors in order to achieve maximum performance, and we have realized extremely smooth engine characteristics, particularly in the rotational range of ordinary use. In addition, not only is exhaust purified, this feature also contributes to improved start-up performance and high fuel efficiency.



KLX250



D-TRACKER X

Moreover, in the Ninja 250R, we have also utilized dual throttle valves to realize power with good response in the entire rotational range while achieving high environmental performance that meets Japan's new emission regulations. Moreover, honeycomb catalyzers have been installed in two locations* near the exhaust port and in the silencer of the Ninja 250R. Not only does this meet Japan's strict new emission regulations, it also meets the European regulatory values for motorcycle emissions (EURO-III), which were greatly strengthened in 2006. We have also begun sales in Europe.

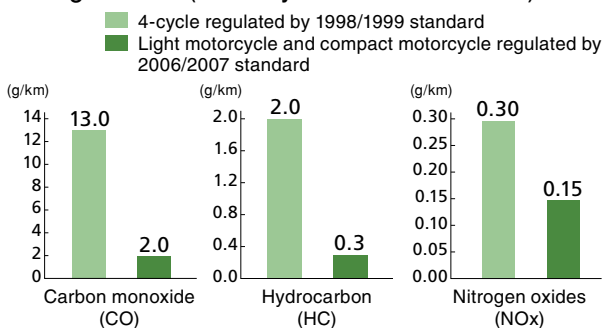
* Efficiency is maximized by placing the first honeycomb catalyzer as close as possible to the exhaust port. The second honeycomb catalyzer is used inside the silencer to minimize power loss while meeting strict emission regulations.



Ninja 250R

We will continue to increase the lineup of models that use fuel injection systems and increase the application of the new technologies to continue to make exhaust cleaner.

Comparison of Japanese Motorcycle Emission Regulations (Motorcycle Mode Standard)



Start of the 2006/2007 Regulation for Japanese Motorcycle Emissions

Motorcycle Category	New Products	Existing Products
126 - 250 cc category	Oct. 2006	Sept. 2007
251 cc and up category	Oct. 2007	Sept. 2008

Promotion of 3R

We have been steadily operating an autonomous motorcycle recycling system in cooperation with three other motorcycle manufacturers and 12 importers in Japan. This effort has had no structural trouble related to receiving motorcycles for disposal.

Using this system, which began in October 2004, we have achieved a recycling rate of 87.2% in its 4th fiscal year (April 1, 2007–March 31, 2008).

Moreover, we are participating in an FRP boat recycling system that began operation in 2005 as a voluntary effort of the Japan Boating Industry Association. Since 2007, this system, which accepts the disposal of personal watercraft, has been expanded from 29 prefectures in FY2006 to now include every prefecture.

In addition to these recycling efforts, by adopting easily-recycled materials and the use of material identifying labels on resin parts, for example, we have

manufactured the new motorcycle models that we began to sell in FY2007 to be at least 90% recyclable by weight.

Furthermore, by designing personal watercraft, general-purpose gasoline engines and other products based on the same design approach to motorcycles, we are manufacturing them to increase their rates of recyclability.

Moreover, to reduce weight, we have included the same high capacity dual radiators that we use in Motocross KX



KLX250 radiator

models in the KLX250 and D-TRACKER X above. These radiators have slim and tight cores and fins that realize weight reduction while providing excellent cooling performance.

Elimination, Reduction and Management of Environmental Substances of Concern

With regard to motorcycles, we tackle the challenge of the elimination and reduction of environmental substances of concern to fulfill the goals voluntarily set by the Japan Automobile Manufacturers Association, Inc. (JAMA). We apply the approach to environmental conservation we take toward motorcycles to personal watercraft and general-purpose gasoline engines, in order to eliminate and reduce environmental substances of concern.

For lead, we completed the elimination program at the end of December 2005 except for solder used in electronic

boards, electric parts and bearings in motorcycles. We also completed the replacement of coatings that contain lead with lead-free ones before the end of March 2006 in general-purpose gasoline engines and are working on further lead reduction.

Except for a very minute amount used in parts that are indispensable for motorcycle traffic safety, we eliminated the use of mercury before the end of September 2004. Moreover, a small amount of cadmium had been used in some electric and electronic parts, but we also eliminated its use in motorcycles, personal watercraft and general-purpose gasoline engines by the end of December 2006.

Hexavalent chromium had also been used in metal parts, bolts and nuts, for example, as a rust-preventive treatment for many parts. Beginning in FY2005, however, we began conversion of some parts to hexavalent chromium-free parts for the mass-produced parts of motorcycles sold in Japan. Since then, we steadily expanded this sequential shift and completed conversion to hexavalent chromium-free parts by January 2008, which was the target set by JAMA in its voluntary efforts to reduce environmental substances of concern.

Moreover, substituting replacements for the hexavalent chromium contained in the chemical conversion coating agents used in rust-preventive treatment and the coating base preparation treatment of aluminum parts for personal watercraft and other products was completed by end of 2006.

We are also working in coordination with part manufacturers to steadily convert to hexavalent chromium-free bolts, nuts and similar parts for personal watercraft, general-purpose gasoline engines and for-export motorcycles, for example.

Schedule for Reduction and Elimination of Environmental Substances of Concern in Motorcycles

■ Kawasaki's achievements ▼ Goals of Japan Automobile Manufacturers Association

Substance	2004	2005	2006	2007	2008
Lead		Completed reduction plan at end of December	Completed reduction at end of December	(not more than 60 g/210 kg vehicle weight; battery excluded)	
				(except for solder on electronic boards and electric parts, bearings, etc.)	
Mercury	Banned as of October 2004	Completed elimination at end of September			(except for the use of a very minute amount in parts that are essential for motorcycle traffic safety)
Hexavalent chromium				Banned as of January 2008	Completed elimination at end of December
Cadmium			Banned as of January 2007	Completed elimination at end of December	

Reducing Environmental Impact in Production Activities

Action POINT Due to changes in the forms of and increases in the scale of our business, the results of our efforts for energy saving, global warming prevention, waste reduction and chemical substances reduction have become difficult to evaluate. From this year, we will analyze the effects of our activities using a basic unit per net sales as a typical index in order to promote effective measures based on these results.

Energy Saving Activities

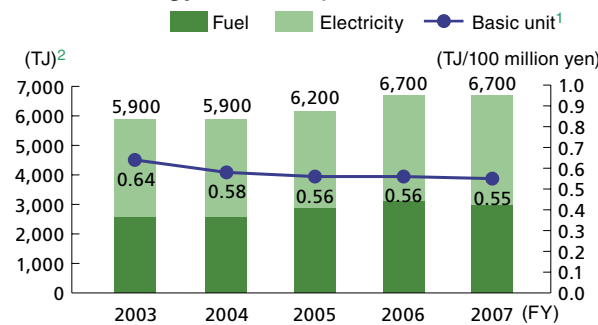
In order to reduce the amounts of greenhouse gas emissions, we are implementing energy saving measures that contribute to reducing electricity and fuel consumption according to the characteristics of each plant. Moreover, we are also undertaking shared measures at every plant.

Examples of Energy Saving Activities

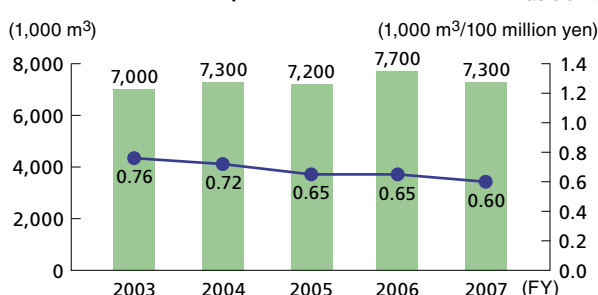
- Efficient operation and renewal of compressed air equipment and other utility facilities
- Replacement with new facilities that have lower CO₂ emissions (through conversion of fuel type, for example)
- Reduction of standby power in electricity receiving facilities and production facilities

We were able to keep the total energy consumption at about the same level as the last fiscal year. Moreover, we were able to reduce the water consumption compared to the last fiscal year by, for example, implementing thorough measures to conserve water and prevent water leaks from pipes and by recirculating and reusing water in industrial processes.

Total Energy Consumption



Water Consumption

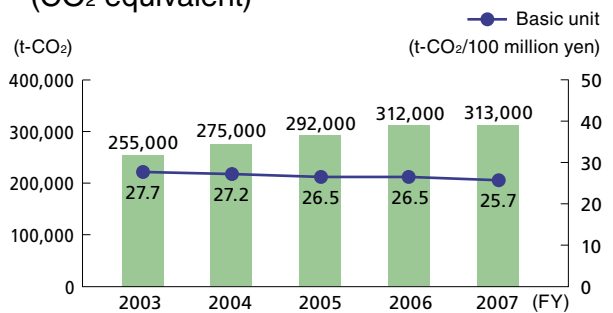


¹ Basic unit: Divided the total energy consumption, water consumption, greenhouse gas emissions, and amount of produced waste by net sales, respectively.
² TJ: terajoules (10¹² J)

Activities to Prevent Global Warming

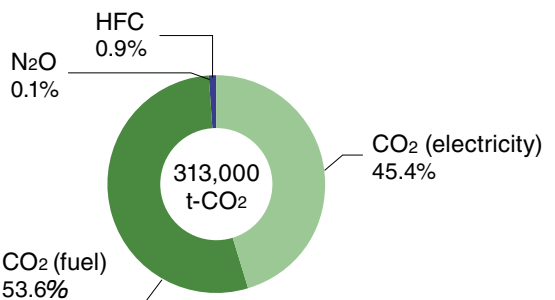
We were able to keep the total greenhouse gas emissions at about the same level as in the last fiscal year. Moreover, as for a basic unit per net sales, which is an evaluation measure that considers our increased business scale, we achieved a 2.9% improvement.

Amounts of Greenhouse Gas Emissions (CO₂ equivalent)



• Electricity conversion factors used herein were specified by power utility companies. (Electricity conversion factor for FY2006 were used to compute those of FY2007.)

Breakdown of Greenhouse Gas Emissions (FY2007)



In addition to continuing to reduce the total greenhouse gas emissions, we will analyze the effect of our activities using a basic unit per net sales for evaluating improvements and continue to investigate effective measures.

We are also focusing on promoting energy saving efforts through follow-up with our business plan.

Waste Reduction Activities

As an effort to reduce waste, we are continuously promoting “zero emissions” efforts in which we seek to achieve a recycling rate of 100%. In addition to efforts suited to the characteristics of each plant, we are also undertaking the “zero emissions” efforts as shared measures at every plant.

Examples of 3R Activities

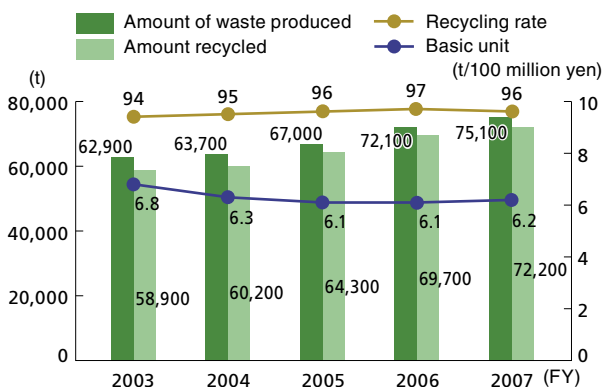
- Suppressed generation of metal scraps, waste oil, wood scraps and other waste
- Expansion of reuse by, for example, using reusable containers instead of pallets and wooden boxes
- Purchase of recycled goods, increase of their use rate and related efforts

As a result of these activities, our recycling rate reached 96% in FY2007.

Due to increases in the scale of our business, however, the total amount of waste that we produced increased about 3,000 tons (4.2%) from the previous fiscal year. For example, at some of our plants, we constructed new buildings and renewed facilities as part of business reorganization, resulting in a significant increase in our total amount of waste output.

We will analyze the effect of our activities using a basic unit per net sales as an important index for evaluating improvements, and we will continue to investigate effective measures to reduce waste.

Amount of Produced and Recycled Waste



Efforts for Reducing Chemical Substances

As part of our shared efforts for reducing chemical substances, we are working to realize reduction targets set at every site for harmful substances, including cadmium, lead, hexavalent chromium, dichloromethane and other VOCs.

We are steadily moving toward our reduction targets for cadmium, which is only used at certain sites and is also handled in small quantities, and for dichloromethane, for which recovery equipment has been installed and other reduction measures have been advanced. Starting with our Consumer Products & Machinery Company, which has achieved the complete elimination of lead from mass-produced goods, we are advancing the reduction of lead, which has increased slightly in use recently, by not using new jigs that contain it and switching to alternative paints that contain low levels of it.

Amounts of Chemicals Subject to Reduction Handled and Emitted

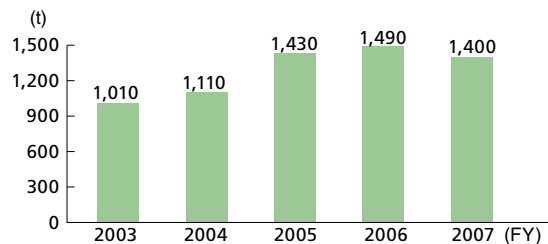
Substance		FY2007
Major VOC	Toluene (t/year)	304
	Xylene (t/year)	812
	Ethylbenzene (t/year)	286
Dichloromethane (t/year)		61
Heavy metals	Lead (t/year)	6.3
	Hexavalent chromium (t/year)	19
	Cadmium (t/year)	0.13

• Amount of major VOC and dichloromethane is the amount emitted, while that of heavy metals the amount handled

Major VOC

We are conducting thorough coating thickness control for paints, which are the main cause of VOC emissions, and switching to solvents with low volatility and adopting water-based paints, for example. As a result of these measures, we achieved a 5.9% reduction in the amount emitted compared to the previous fiscal year.

Change in the Amount of Major VOC Emissions



Hexavalent Chromium

At sites that handle mass-produced goods, we are steadily reducing the quantity of this substance handled by switching to substitutes in surface treatment processes. Moreover, our plan is to reduce the quantity handled in the future by switching the use of surface treatment fluid to a treatment that does not use chromium.

Energy Saving Activities at Our Plants



In response to the increasingly urgent need to reduce CO₂ emissions, we believe that making production processes considerate of the environment is an urgent business matter. In this section, we will introduce representative efforts of the Machinery Division, which is seeking to curtail CO₂ emissions by 1,500 t/year through energy saving activities and of Kawasaki Precision Machinery Ltd., which is actively promoting its own advanced measures.

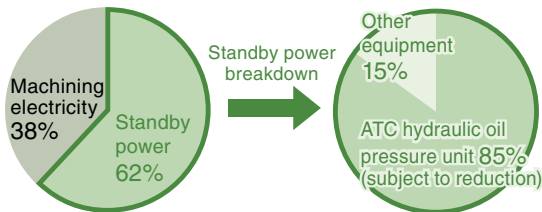
Efforts at the Kobe Works of the Machinery Division

Curtailment of Standby Power Consumed by Machine Tools

FY2007 achievement
Reduction of
120 t-CO₂/year

As a result of investigating the machinery plant, which consumes about 50% of the electricity used by the Kobe Works, we found that about 62% of the electricity consumed by the machining centers,* which are representative of the facilities, was standby power. Furthermore, 85% of that standby power was used for operation of the hydraulic oil pressure unit of the automatic tool changer (ATC). Even though the ATCs are not in use when the machining centers are conducting machining, their hydraulic oil pressure units are designed to continue to operate at full power. For our plant, which changes tools infrequently, running this equipment constantly day and night was the cause of an extremely large amount of wasteful electricity consumption.

Electricity Consumption by a Typical Machining Center and Breakdown of the Power Used in Standby



As a countermeasure, we switched to inverter-controlled motors for ATC hydraulic oil pressure units and now only raise motor output to its rated level when changing tools. At all other times when the equipment is in standby, they now operate with minimum output. As a result, we have been able to curtail electricity use by 3,653 kWh/month, which is equivalent to 15 t-CO₂/year.

So far, we have applied inverter-controlled motors to the ATC hydraulic oil pressure units of 8 machining centers, realizing an energy saving effect of 120 t-CO₂/year. By FY2010, we are seeking to reduce the total amount of CO₂ emissions from our machinery plant by 6%, which is equivalent to 200 t-CO₂/year.



Machining center

* Machining center: automatic tool changer machine tools

Energy Saving Effect of Using Inverter Control for ATC Hydraulic Oil Pressure Units (per unit)

Quantity of electricity consumption	Before use	7,314 kWh/month
	After use	3,661 kWh/month
Electricity conserved		3,653 kWh/month
CO ₂ emissions reduction		15 t-CO ₂ /year

Reduction of Fuel Consumption by Heat Treatment Furnace

FY2007 achievement
Reduction of
270 t-CO₂/year

Energy Saving Through Improved Heat Treatment Furnace Efficiency

At our plant, as heat treatment furnaces for large-scale structures, we have a 150-ton truck furnace and a 120-ton truck furnace that burn city gas. These heat treatment furnaces consume about 430,000 m³N of city gas as fuel annually, so we sought to curtail this consumption.

In large-scale furnaces, if there are gaps between the product input portal or input truck and the furnace walls, negative pressure occurs inside the furnace, and excess air enters causing increased exhaust gas and greater heat loss (exhaust gas loss). At the same time, a suitable air-fuel ratio cannot be achieved and combustion efficiency is reduced. From this perspective, we measured the internal pressure of the furnace during operation and found that in the 120-ton truck furnace the pressure is always negative, showing that there are gaps and that air is flowing in. In response to this, we adjusted the gaps between the input portal or input truck and the furnace walls to increase airtightness and realize a fuel consumption reduction of at least 20%.

Moreover, an air-fuel ratio of about 1.2 is considered to be optimal for efficient combustion of city gas, but investigating our 150-ton truck furnace, we found that when the temperature was rising the air-fuel ratio was 1.75 (exhaust gas oxygen concentration of about 10%, equivalent to an exhaust gas loss of 45%). By adjusting the combustion to realize an air-fuel ratio of 1.3 (exhaust gas oxygen concentration of about 5%, equivalent to exhaust gas loss of 35%), we were able to reduce fuel consumption by about 10%.

Through these types of improvements, we achieved a total fuel consumption reduction of at least 30% (which is equivalent to 270 t-CO₂/year emissions) or more.



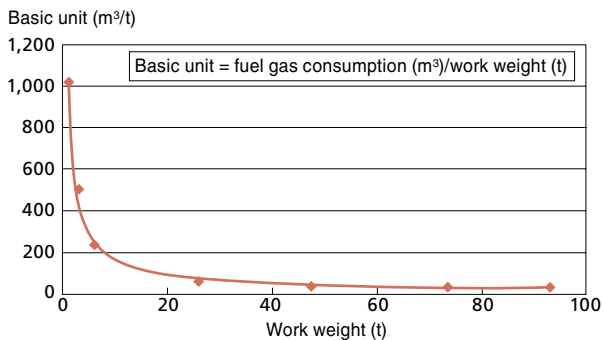
150-ton heat treatment furnace that burns city gas

● Energy Saving Through Treatment of Suitable Work Weight

In large-scale furnaces, the fuel gas consumption increases dramatically when work weight of six tons or less is treated. Treatment of small weight can be avoided by handling multiple products together, but differences in heat treatment conditions, production process downsides and numerous other limitations make actual application of this practice difficult.

In consideration of this, we decided to convert a 25-ton heavy oil-burning furnace that had been taken out of service into a 10-ton city-gas-burning furnace for the heat treatment of smaller parts. By using this equipment, which we plan to complete in FY2008, for the treatment of small weight of less than 10 tons, we expect to reduce city gas consumption by about 25% compared to using the large-scale furnaces.

■ Relation Between Fuel Gas Consumption and Work Weight of 150-Ton Heat Treatment Furnace



Heat Insulating Paint on Plant Buildings

At our plant, the building roofs and walls are mostly covered with zinc-plated steel sheets and the ceilings are also high, so they are not suited to being completely air-conditioned. For this reason, we are reliant on spot coolers and heaters to deal with hot and cold conditions.

In recent years, we have incorporated air-cooling systems that use gas absorption chiller/heater in some areas with low ceilings in order to improve the work environment, but solar heat radiating from roofs and walls prevented it from having sufficient effect. In response to this, we added heat insulating paint to the roofs and exterior walls of the plant buildings, realizing an average temperature reduction effect of 15.2°C on the exterior walls and 2.2°C (maximum of 3.2°C) on the internal walls. Hypothetically, if we were to incorporate air-conditioning systems into a plant building as a whole, to maintain an indoor temperature of 28°C with an outside temperature of 33.5°C and eight medium-sized machining centers that emit 50 kW of heat inside, the load of the required air-conditioning would be 196.9 kW. With the heat insulating paint, the load would be reduced to 160.8 kW (18% reduction) according to our trial calculations. This effect is equivalent to eliminating the waste heat of six of our machining centers.



Plant Building with Heat Insulating Paint

At our plant, we plan to investigate the effects of this as a model case and expand the application of this coating method when recoating plant buildings in the future.

Efforts at Kawasaki Precision Machinery Ltd.

Installation of a Large-Scale Photovoltaic System

FY2007 achievement
Reduction of
110 t-CO₂/year

At our new core parts plant built in April 2007, we are incorporating features that are considerate of the environment, including energy saving air-conditioning and lighting. In March 2008, we installed and began operation of a 300-kW photovoltaic system (manufactured by Kawasaki Plant Systems, Ltd.) that has an annual power generation capacity of 300 MWh/year, which equals a reduction of 110 t-CO₂/year. Furthermore, during this fiscal year we also plan to install a large-scale nickel-metal hydride battery Gigacell® to control power generation output fluctuations and increase energy use efficiency.



Photovoltaic system at core parts plant

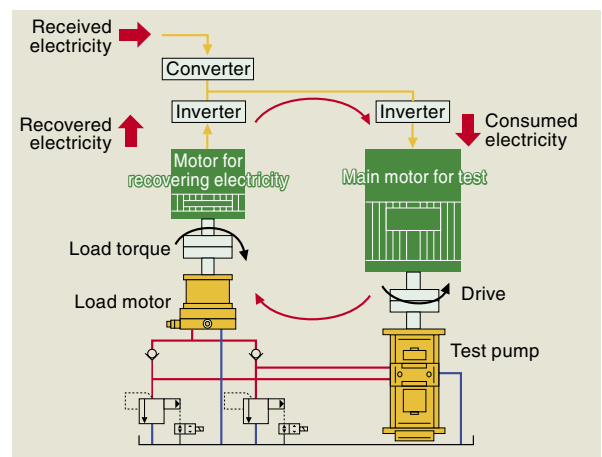
Incorporation of a Power Regeneration Stand and Energy Recovery

FY2007 achievement
Reduction of
54 t-CO₂/year

We have incorporated a power regeneration stand that transforms, recovers and reuses energy that had previously been wasted during hydraulic pump endurance tests and hydraulic motor pre-delivery tests. We will work to install more of these and further reduce CO₂ emissions.

Function/Performance	Pump endurance stand	Hydraulic motor pre-delivery tests stand
Main electric motor electricity consumption	253 kW/2,000 min ⁻¹	303 kW/unit (number of motor units)
Recovered electricity	109 kW (43% recovery rate)	
Recovered electricity amount (result)	About 110 MWh (FY2007)	About 40 MWh (FY2007)
CO ₂ reduction	About 40 tons	About 14 tons

Power Regeneration Stand for Pump Endurance Tests

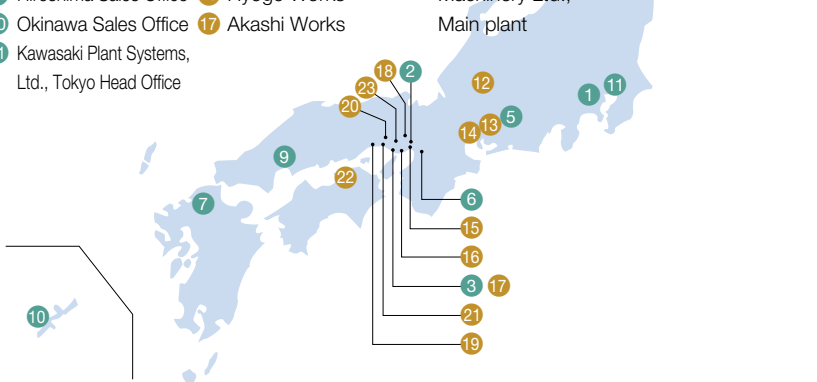


Kawasaki Group Network; Offices, Works, and Subsidiaries

DOMESTIC OFFICES AND WORKS (Kawasaki Heavy Industries and three main subsidiaries)

- Head Offices, Branch Offices, Technical Institute
- Works

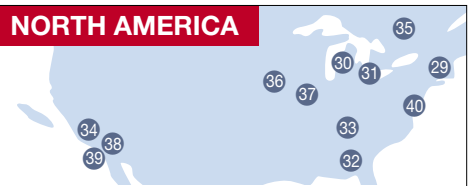
- | | | |
|---|-------------------------|-----------------------|
| 1 Tokyo Head Office | 12 Gifu Works | 18 Seishin Works |
| 2 Kobe Head Office | 13 Nagoya Works 1 | 19 Kakogawa Works |
| 3 Technical Institute | 14 Nagoya Works 2 | 20 Banshu Works |
| 4 Sapporo Office | 15 Kobe Works | 21 Harima Works |
| 5 Nagoya Office | Kawasaki Shipbuilding | 22 Kawasaki |
| 6 Osaka Office | Corp., Kobe Shipyard | Shipbuilding Corp., |
| 7 Fukuoka Office | Kawasaki Plant Systems, | Sakaide Shipyard |
| 8 Sendai Sales Office | Ltd., Kobe Head Office | 23 Kawasaki Precision |
| 9 Hiroshima Sales Office | 16 Hyogo Works | Machinery Ltd., |
| 10 Okinawa Sales Office | 17 Akashi Works | Main plant |
| 11 Kawasaki Plant Systems,
Ltd., Tokyo Head Office | | |



GLOBAL NETWORK

- OVERSEAS OFFICES (Kawasaki Heavy Industries)
- SUBSIDIARIES

NORTH AMERICA



- 29 Kawasaki Rail Car, Inc.
- 30 Kawasaki Precision Machinery (U.S.A.), Inc.
- 31 Kawasaki Robotics (U.S.A.), Inc.
- 32 Kawasaki Construction Machinery Corp. of America
- 33 KCM Receivables Funding LLC
- 34 Kawasaki Motors Corp., U.S.A.
- 35 Canadian Kawasaki Motors Inc.
- 36 Kawasaki Motors Manufacturing Corp., U.S.A. (KMM), Lincoln Plant
- 37 KMM Maryville Plant
- 38 KM Receivables Corporation
- 39 Kawasaki Motors Finance Corporation
- 40 Kawasaki Heavy Industries (U.S.A.), Inc.

SOUTH AMERICA



- 41 Kawasaki Motores do Brasil Ltda.
- 42 Kawasaki do Brasil Indústria e Comércio Ltda.

EUROPE



- 1 Moscow Office
- 2 Kawasaki Gas Turbine Europe G.m.b.H
- 3 Kawasaki Precision Machinery (U.K.) Ltd.
- 4 Kawasaki Robotics (U.K.) Ltd.
- 5 Kawasaki Robotics G.m.b.H
- 6 Kawasaki Motors Europe N.V.
- 7 Kawasaki Motors Racing B.V.
- 8 KHI Europe Finance B.V.
- 9 Kawasaki Heavy Industries (U.K.) Ltd.
- 10 Kawasaki Heavy Industries (Europe) B.V.

ASIA



- 11 Beijing Office
- 12 Taipei Office
- 13 Delhi Office
- 14 Wuhan Kawasaki Marine Machinery Co., Ltd.
- 15 Kawasaki Gas Turbine Asia Sdn Bhd
- 16 Kawasaki Precision Machinery (Suzhou) Ltd.
- 17 Flutek, Ltd.
- 18 Kawasaki Heavy Industries Machinery Trading (Shanghai) Co., Ltd.
- 19 KHI Design & Technical Service Inc.
- 20 Kawasaki Machine Systems Korea, Ltd.
- 21 Kawasaki Robotics (Tianjin) Co., Ltd.
- 22 P.T. Kawasaki Motor Indonesia
- 23 Kawasaki Motors (Phils.) Corporation
- 24 Kawasaki Motors Enterprise (Thailand) Co., Ltd.
- 25 Kawasaki Heavy Industries (Singapore) Pte. Ltd.
- 26 Kawasaki Heavy Industries (H.K.) Ltd.
- 27 KHI (Dalian) Computer Technology Co., Ltd.
- 28 Kawasaki Heavy Industries Consulting & Service (Shanghai) Co., Ltd.

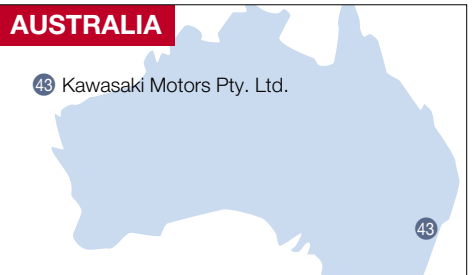
KAWASAKI HEAVY INDUSTRIES, LTD.

Environmental Management Dept.

<http://www.khi.co.jp/earth/english/index.html>

Kobe Crystal Tower, 1-3, Higashikawasaki-cho 1-chome, Chuo-ku, Kobe, 650-8680 Japan
Fax: +81-78-360-8700

AUSTRALIA



- 43 Kawasaki Motors Pty. Ltd.

