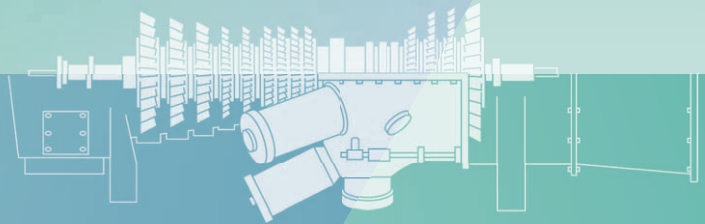
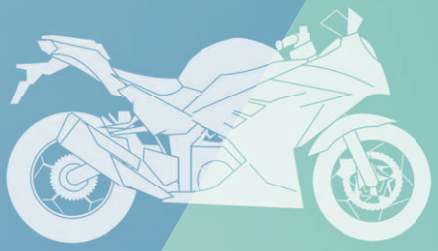
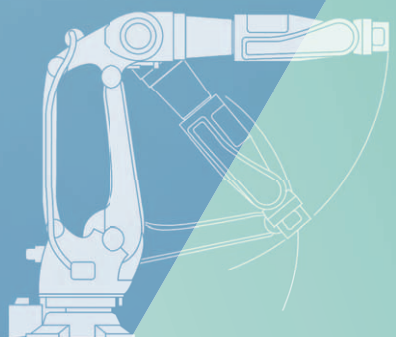
Kawasaki
Powering your potential

Kawasaki Environmental Report 2016







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Editorial Notes

Period

The report covers fiscal 2016 (from April 1, 2015 to March 31, 2016). However, some activities from outside this period are also included. For overseas subsidiaries, the dates of the fiscal year and the period covered by statistics may differ depending on their country of location.

Scope

Kawasaki Heavy Industries, Ltd.
However, where the Kawasaki Group is described, the scope of reference includes subsidiaries (listed on page 19) that are subject to environmental management criteria.

Frequency of issue: The report is intended as an annual publication to be issued once every year.

Edited and issued by: General Administration Division Environmental Affairs Department

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Guidelines

In preparing the report, the editorial office referred to the Environmental Reporting Guidelines (2012 Edition) issued by the Ministry of the Environment and the Sustainability Reporting Guidelines (G4 ver.) issued by the Global Reporting Initiative (GRI).

Disclaimer

This report not only describes actual past and present conditions at the Kawasaki Group but also includes forward-looking statements based on plans, forecasts, business plans and management policy as of the publication date. These represent suppositions and judgments based on information available at the time. Due to changes in circumstances, the results and features of future business operations may differ from the content of such statements.

Promoting Environmental Management

Chief Environmental Officer's Message
To Realize a Sustainable Society

Ikuhiro Narimatsu
Chief Environmental Officer
(Managing Executive Officer)

Sound solutions to social issues, such as preventing global warming, reducing environmental impact and protecting biodiversity, are needed in order to realize a sustainable society. Toward this end, in 2010, Kawasaki revised its Environmental Charter and established its Environmental Vision 2020, which defines the Group's identity in 2020 from an environmental perspective. And as a group, we prioritize strategies in four key areas—(1) realization of a low-carbon society, (2) realization of a recycling-oriented society, (3) realization of a society coexisting with nature, and (4) establishment of an environmental management system (EMS)—and vigorously pursue initiatives to achieve our vision.

Kawasaki Environmental Report 2016 highlights the results of our environmental management activities undertaken in fiscal 2016, the final year of our three-year Eighth Environmental Management Activities Plan.

First off, we rolled out energy-saving measures through wider introduction of our energy visualization system at manufacturing sites, and endeavored to eliminate waste and irregularities in energy use while raising facility efficiency. Through these efforts, we basically achieved reductions in greenhouse gas emissions and energy costs.

Meanwhile, our lineup of Kawasaki-brand Green Products, which demonstrate exceptional environmental performance, expanded to 32 products, as the system that assesses and registers Kawasaki-brand products acquired greater recognition inside and outside our corporate walls after its introduction in 2014. As approximately 80% of the greenhouse gases released during the lifecycle of Kawasaki-brand products come from their after-sale use, our goal is to reinforce activities that generate pervasive interest in minimal-emission Kawasaki-brand Green Products and thereby contribute to vast improvements in the environment.

I hope that the information contained in this report will provide readers with a deeper understanding of the environment-oriented management practices undertaken within the Kawasaki Group.

Environmental Charter (established 1999, revised 2010)

Environmental Philosophy

The Kawasaki Group pursues business activities globally in key industries related to land, sea, and air, guided by the desire to contribute to the development of society through *monozukuri* manufacturing. In this effort, as a group, we emphasize the "realization of a low-carbon society," "realization of a recycling-oriented society," and "realization of a society coexisting with nature" to help solve global environmental issues, and we strive to help build a sustainable society through environmentally harmonious business activities and environmentally conscious Kawasaki-brand products and services.

Conduct Guidelines

1. Global environmental problems are serious issues shared by people around the world and, making it a management priority to ensure that business activities are conducted in harmony with the environment, we will strive willingly and vigorously toward this goal.
2. We will endeavor to conserve resources, save energy, recycle, and reduce industrial waste in production stages, and we will promote efforts to limit the impact of our operations on the environment.
3. We will carefully consider environmental impact during product planning, R&D and design stages to limit as much as possible any environmental impact caused during procurement, production, distribution, utilization and disposal stages of the products we make and market.
4. We will strive to minimize the impact our business activities have on ecosystems and engage proactively in efforts to protect these ecosystems.
5. In seeking solutions to global environmental issues, we will develop and provide new technologies and new products that effectively contribute to environmental protection and reduced consumption of energy and natural resources.
6. Going beyond environment-related laws, regulations and conventions and self-established action plans in related industries, we will implement our own environmental control standards, as appropriate, and strive to improve environmental management levels.
7. Through environmental training and public relations activities, we will strive to elicit greater awareness of global environmental issues among all employees and will encourage employees to perform a self-improvement review and participate in social contribution activities.
8. We will implement an environmental management system for environmental protection activities, hold regular conferences on environmental protection activities, undertake reviews, and strive to achieve continual improvement in our environmental protection activities.

Environmental Management Platform

Kawasaki appoints a chief environmental officer (director responsible for environmental management), who coordinates corporate environmental management activities and assumes full responsibility and authority for environment-oriented issues, and maintains a corporate environmental management structure. (Fig. 1: Environmental Management Organization)

To ensure continuous improvement in environmental management activities, the Corporate Environment Committee, which is chaired by the chief environmental officer, discusses specific approaches and implementation methods, and has the final say on which activities are pursued.

Similarly, in accordance with the Energy Saving Law, an energy management structure has been established under the direction of an energy management officer. (Fig. 2: Energy Management Organization)

The Corporate Energy Management Committee holds regular meetings and vigorously promotes energy-saving activities in line with business scale.

Kawasaki has been working to build and maintain an effective environmental management structure since 1994. Looking to the future, we will consistently refine our approaches to realize improvements. (Fig. 3: Environmental Management Flow)

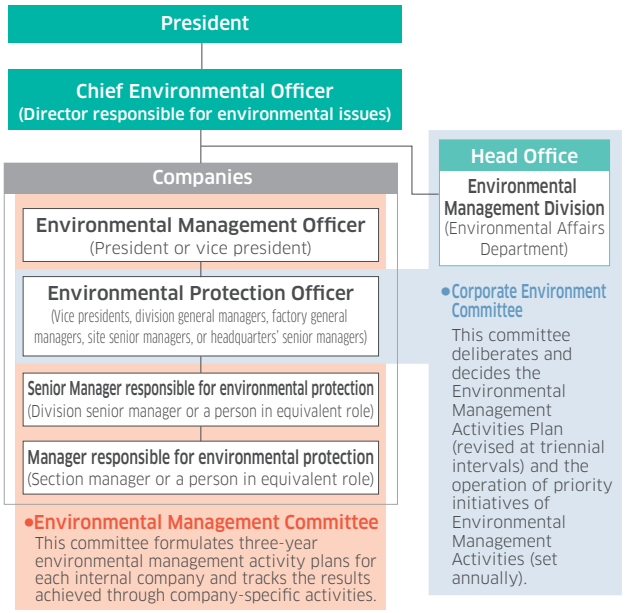


Figure 1: Environmental Management Organization

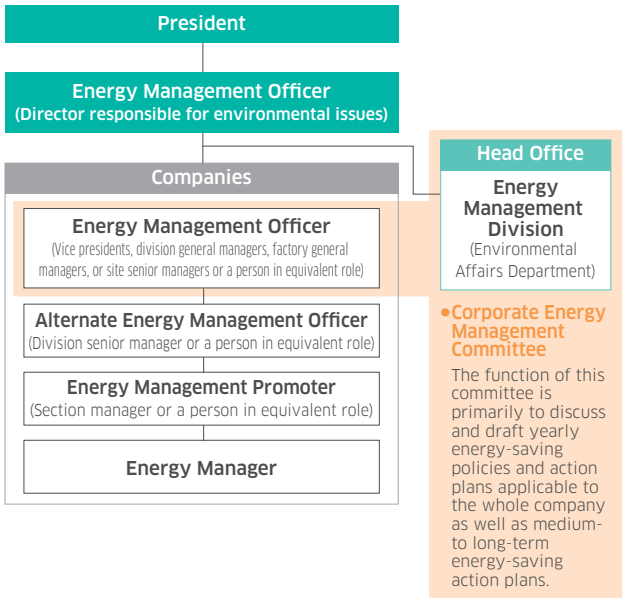


Figure 2: Energy Management Organization

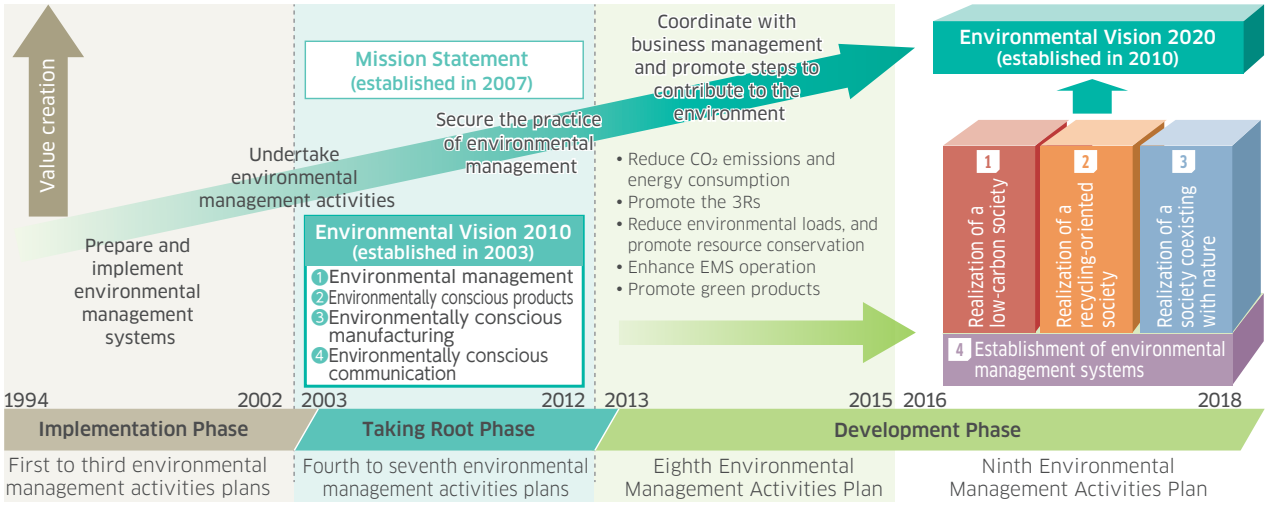


Figure 3: Environmental Management Flow

Ninth Environmental Management Activities Plan (FY2017–FY2019) and Environmental Vision 2020

Kawasaki formulated its Ninth Environmental Management Activities Plan, which runs from fiscal 2017 to fiscal 2019. This plan emphasizes sustained efforts to integrate business management and environmental management, which were priorities under the Eighth Environmental Management Activities Plan. In addition, we have positioned as new key aspects a response to procurement diversification accompanying deregulation of energy supply in Japan, compliance with country emissions targets* set at the 21st Conference of Parties (COP) under the United Nations Framework Convention on Climate Change, and efforts to ensure appropriate disclosure and transparency in providing environmental information to institutional investors, corporate assessment organizations and other performance-tracking groups. Toward achieving Environmental Vision 2020, we will tackle key strategies related to four issues—(1) CO_2 and energy cost reduction, (2) promotion of the 3Rs, (3) reduction of environmental load/promotion of resource conservation, and (4) enhancement of the Kawasaki Group environmental management system—and strive to heighten awareness as an environmentally friendly brand.

Ninth Environmental Management Activities Plan

Coordination with Business Management and Promotion of Environmental Contribution

Key strategies	Ninth Plan targets
CO_2 and energy cost reduction Realization of a low-carbon society	**Reduce resource and energy costs, mainly through wider application of energy visualization system** Cut annual resource and energy costs by at least 5%
	Reduce CO_2 emissions Cut CO_2 emissions per unit of sales by at least 3% year on year
	Reduce CO_2 emissions through product-based contributions Identify CO_2 emission reduction effect through product-based contributions and disclose to public
	Carefully select investment projects Push internal rate of return above 8% through energy-saving facilities
Promotion of the 3Rs Realization of a recycling-oriented society	**Reduce total waste emissions and maintain zero emission status** Reduce total waste emissions per unit of sales by at least 1% from level achieved under the Eighth Plan Push final disposal ratio below 1%
	Promote reuse and recycling Boost recycling rate above 98%
	Promote PCB treatment Systematically reduce high- and low-concentration PCB waste
Reduction of environmental load/ promotion of resource conservation Realization of a society coexisting with nature	**Reduce chemical substances** Reduce major VOCs* per unit of sales by at least 1% from level achieved under the Eighth Plan Cut dichloromethane by at least 1% year on year Strive to reduce hexavalent chromium to zero, in principle, by fiscal 2021
	Conserve water Reduce annual consumption of water per unit of sales by at least 1% Track cost effect of measures to conserve tap water and prevent leaks from clean-water pipes
	Conduct forest conservation activity Carry out forest conservation activity at least twice a year
Enhancement of the Kawasaki Group environmental management system Enhancement of environmental management systems	**Reinforce environmental management capabilities and lower environmental risk** Certified business sites to complete transition to ISO 14001: 2015 Visit domestic and overseas production sites to better pinpoint status of environmental management
Heightened awareness as an environmentally friendly brand	**Leverage Kawasaki Green Product Promotion Activity** Register Kawasaki-brand Green Products every year and release data to public
	Enhance image through external evaluations and rankings Announce results of third-party verification, improve evaluations under such schemes as CDP (Carbon Disclosure Project: world's most authoritative CO_2 index), and sustain placement in Dow Jones Sustainability Index

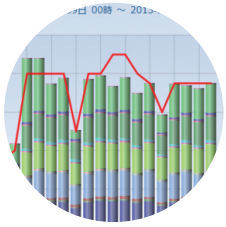
*Main VOCs: For the Kawasaki Group, the major VOCs are toluene, xylene and ethyl benzene. VOCs: Volatile Organic Compounds

*National CO_2 emissions reduction target
COP21 (held December 2015 in Paris, France)
..... Targeting 26% reduction from fiscal 2014 level by fiscal 2031

Group Mission

"Kawasaki, working as one for the good of the planet"

Target Profile of the Kawasaki Group in 2020



- **Energy consumption and CO_2 emissions**
  Major reductions achieved
- **Contribution from products**
  Major reductions achieved in CO_2 emissions during utilization

- **3Rs**
  Major reductions achieved per unit of sales
  Recycling rate of more than 97%
  Zero emissions maintained
- **PCB treatment**
  All treatment completed

- **Major VOCs**
  Major reductions achieved per unit of sales and in total amount
- **Heavy metals**
  Major reduction in amount utilized
- **Forest conservation activity**
  Forest conservation activity continued

- **Establishment of EMS**
  Establishment completed across the Kawasaki Group as a whole

Kawasaki Green Product Promotion Activity

Environmental Vision 2020

Realization of a low-carbon society

Contribute to the prevention of global warming through our products and manufacturing that use energy without waste

① Reduce 2020 greenhouse gas emissions in line with national targets
② Offer customers energy-efficient products and services, and reduce emissions of greenhouse gases on a planetary scale
③ Promote energy conservation in production and logistics processes, and reduce emissions of greenhouse gases

Realization of a recycling-oriented society

Engage in manufacturing that uses resources without waste to recycle and fully utilize limited resources

① Practice design that uses resources effectively, and work to make products lighter, more durable and more recyclable
② Practice the 3Rs (reduce, reuse and recycle of waste) in production activities, and achieve zero emissions at all plants
③ Completely and appropriately treat all PCB waste and PCB-containing devices

Realization of a society coexisting with nature

Contribute to reduction of the environmental impact and conservation of the ecosystem through manufacturing that is in harmony with the global environment

① Offer customers products and services that prevent air and water pollution, and advance environment improvements and ecosystem protection
② Reduce the use of chemical substances in products and production activities
③ Cooperate in regional forest conservation and other activities to protect the environment of ecosystems

Establishment of environmental management systems

Build a foundation for environmental management that will achieve the Environmental Vision 2020

① Establish EMS at all consolidated subsidiaries in Japan and overseas to promote environmental management Group-wide
② Comply with environmental laws and regulations, and regularly follow up on compliance status
③ Communicate environmental data within and beyond the Group, and maintain two-way dialogue while protecting the environment

Summary of Environmental Activities in Fiscal 2016

Fiscal 2016 Targets and Evaluation of Results

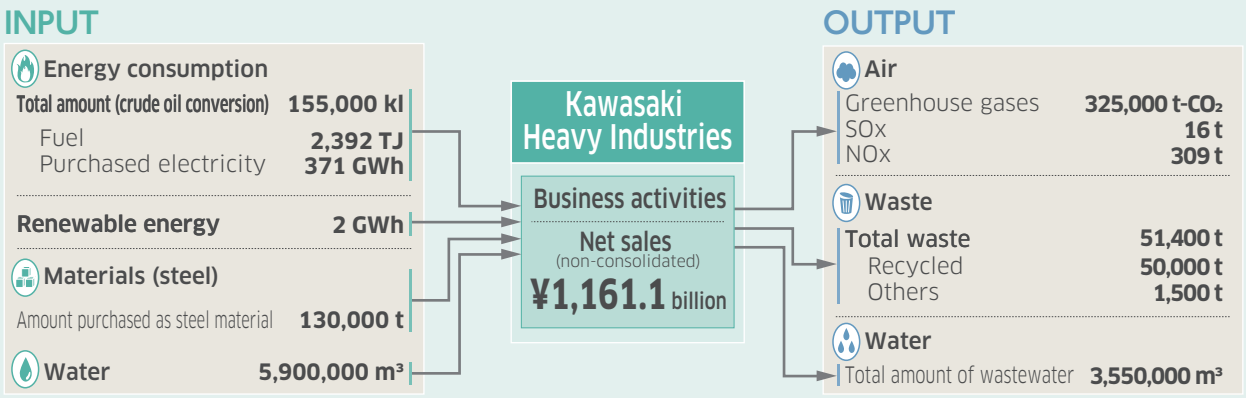
	Eighth Environmental Management Activities Plan (FY2014–FY2016)
Realization of a low-carbon society	**Key strategy** CO_2 and energy cost reduction 1. Use the energy visualization system Approach: Reduce CO_2 emissions and energy consumption through improvement activities using an energy visualization system Target: By fiscal 2016, reduce annual CO_2 emissions and energy consumption by at least 5% 2. Reduce CO_2 emissions through product-based contributions Approach: Calculate reduced CO_2 amount separately for energy-related products, transportation-related products, industrial machinery, and other products Target: Achieve cumulative CO_2 emissions reduction equal to or more than the initial plan values for each business segment through product-based contributions
Realization of a recycling-oriented society	**Key strategy** Promotion of the 3Rs 1. Promoting reduction in waste generation, greater reuse and more recycling Approach: Steadily implement measures to reduce total amount of waste generated Promote high-level treatment, and shift away from thermal recycling to material recycling and reuse Target: Reduce total amount of waste per unit of sales, and maintain zero emission status at all business sites 2. Promoting PCB treatment Approach: Draft appropriate treatment plans, and follow through with stated measures Target: Sustain commitment to treatment of high-concentration PCB waste in cooperation with JESCO* Apply optimum method to treat low-concentration PCB waste *Japan Environmental Storage & Safety Corporation
Realization of a society coexisting with nature	**Key strategy** Reduction of environmental load 1. Reducing chemical substances Approach: Switch to either alternative materials that do not contain hazardous substances or materials with low-content concentrations Reduce emissions into the atmosphere, and prevent movement beyond the borders of business sites through such efforts as collection and treatment of chemical substances Target: Set major VOC reduction target below the average achieved through the Seventh Plan per unit of sales Seek to reduce heavy metals to zero, in principle, by fiscal 2021 **Key strategy** Promotion of resource conservation 1. Forest conservation activities Approach: Continue to pursue forest conservation activities Target: Conduct forest conservation activities at least twice a year 2. Conserving water Approach: Promote water conservation programs Target: Reduce water consumption and amount of wastewater
Establishment of environmental management systems	**Key strategy** Enhancement of the Kawasaki Group environmental management system 1. Reinforcing environmental management capabilities of Kawasaki and subsidiaries in Japan Approach: Communicate environmental data to stakeholders Target: Set reasonable reduction targets, and provide appropriate feedback 2. Strengthening overseas subsidiaries' environmental management capabilities Approach: Pinpoint environmental data, and evaluate environmental performance (impact on environment and effectiveness of measures to limit such impact) Target: Identify legal requirements and other criteria, and support efforts to mitigate environmental risk **Key strategy** Kawasaki Green Product Promotion Activity 1. Establishing compliancy evaluation system to assess environmental performance of Kawasaki-brand Green Products Approach: Establish system for self-declared environmental claims regarding products Target: Establish system conforming to ISO 14021

Fiscal 2016 Targets	Fiscal 2016 Results	Page Number
CO_2 and energy cost reduction 1. Use the energy visualization system By fiscal 2016, have equipment and system in place to reduce annual CO_2 emissions and energy consumption by at least 5%	**CO_2 and energy cost reduction** 1. Use the energy visualization system Continuing on from fiscal 2015, still introducing system facilities at all business sites. Rolled out improvement activities by focusing on study groups, courses and sharing of data on examples of improvement, and cut annual CO_2 emissions by 4.4% and energy costs by 6.6% (including improvement not directly linked to CO_2 reduction achieved primarily through measures to curb electricity demand)	P.11
2. Reduce CO_2 emissions through product-based contributions Achieve cumulative values equal to or more than the initial plan values for each business segment, and disclose the reduction of CO_2 emissions to public ▽ Clarify the effect of investment in energy-saving facilities Push the internal rate of return above 8% on investments to achieve energy savings	2. Reduce CO_2 emissions through product-based contributions Although falling below the initial target, a decrease of 750,000t-CO_2 exceeded level of emissions from business activities. Reduction results disclosed to public through website and reports	
Promotion of the 3Rs 1. Promoting reduction in waste generation, greater reuse and more recycling Maintain zero emission status, and reduce total waste emissions per unit of sales. Boost recycling rate above the fiscal 2015 level	**Promotion of the 3Rs** 1. Promoting reduction in waste generation, greater reuse and more recycling Total waste on a unit basis decreased 10% over the fiscal 2015 level, and the final disposal ratio was below 1%, maintaining zero emission status. Recycling rate reached 97%, falling below level recorded in fiscal 2015	P.14
2. Promoting PCB treatment Process low-concentration PCB waste appropriately through low-cost methods	2. Promoting PCB treatment Of high-concentration PCB waste, 154 transformers and other units, and 3,858 stabilizers were processed. Of low-concentration PCB waste, 142 transformers and other units were processed using the best treatment method	
Reduction of environmental load 1. Reduce chemical substances Major VOCs per unit of sales to be at or below the average of results achieved in the Seventh Plan. Seek to reduce heavy metals to zero, in principle, by fiscal 2021	**Reduction of environmental load** 1. Reduce chemical substances Achieved target of 79 for major VOCs per unit of sales. Dichloromethane emissions decreased 17%, and the amount of heavy metals handled dropped 40%	P.15
Promotion of resource conservation 1. Continue with forest conservation activity Carry out forest conservation activity at least twice a year	**Promotion of resource conservation** 1. Continue with forest conservation activity Activities were undertaken a total of four times in Hyogo Prefecture and Kochi Prefecture	
2. Conserving water Reduce consumption per unit of sales to the level below the amount in fiscal 2014	2. Conserving water The amount of water used was down 2% per unit of sales from fiscal 2015	
Enhancement of the Kawasaki Group environmental management system 1. Reinforce the environmental management capabilities of Kawasaki and consolidated subsidiaries in Japan Set reduction targets, and provide appropriate feedback	**Enhancement of the Kawasaki Group environmental management system** 1. Reinforce the environmental management capabilities of subsidiaries in Japan Considered reduction targets for the Group as a whole, but process did not lead to establishment of any targets	
2. Reinforce the environmental management capabilities of overseas subsidiaries Identify issues through more accurate understanding of environmental data, and support methods to deal with such issues ▽ Human resources training Compile lists of human resources, pinpoint issues, and take appropriate measures	2. Reinforce the environmental management capabilities of overseas subsidiaries Received third-party verification of greenhouse gas data. Visited three locations in the United States to promote environmental management practices under the Group banner	P.18
Heightened awareness as an environmentally friendly brand 1. Leverage Kawasaki Green Product Promotion Activity Introduce to the public products that have passed conformity assessment	**Heightened awareness as an environmentally friendly brand** 1. Leverage Kawasaki Green Product Promotion Activity Registered 11 products as Kawasaki-brand Green Products following conformity assessment	P.23
2. Enhance image through external evaluations and rankings Work to raise Kawasaki's environmental ratings	2. Enhance image through external evaluations and rankings Responded to questionnaires of various external evaluation organizations, including DJSI, CDP and Toyo Keizai. Received third-party verification from SGS Japan Inc. on greenhouse gas emissions in fiscal 2016	

Material Balance of Business Activities for Fiscal 2016 (Overall Picture of the Environmental Impact)

Kawasaki has drawn up a summary of the impact of our business activities on the environment during fiscal 2016. Net sales rose 5.7% year on year, compared with fiscal 2015 (¥1,098.0 billion), while CO_2 emissions were held to a 2.2% increase. This reflects successful energy-saving activities. However, SOx and NOx emissions were up, influenced by tests on internal combustion engines under development.

Material Balance of Business Activities for Fiscal 2016 (Overall Picture of the Environmental Impact)



Realization of a Low-Carbon Society

Key Strategies and Targets under Eighth Environmental Management Activities Plan (FY2014–FY2016) and Fiscal 2016 Results

CO_2 and energy cost reduction

	Targets	Results
❶	**Use the energy visualization system** By fiscal 2016, have equipment and system in place to reduce annual CO_2 emissions and energy consumption by at least 5%	Rate of energy cost reduction hit 6.6%, exceeding target. Rate of CO_2 reduction hit 4.4%, falling below target
❷	**Reduce CO_2 emissions through product-based contributions** Achieve cumulative values equal to or more than the initial plan values for each business segment, and disclose the reduction of CO_2 emissions to public	Reduced emissions by 745,000t-CO_2, through delivery of high-efficiency products

Toward Realization of a Low-Carbon Society

We have set target values, emphasizing the following objectives, to achieve national targets for reduced CO_2 emissions.

- Cut greenhouse gases generated through production and logistics processes
- Cut greenhouse gases generated on a global scale through use of Kawasaki-brand products

1. Energy-Saving Promotion Activities

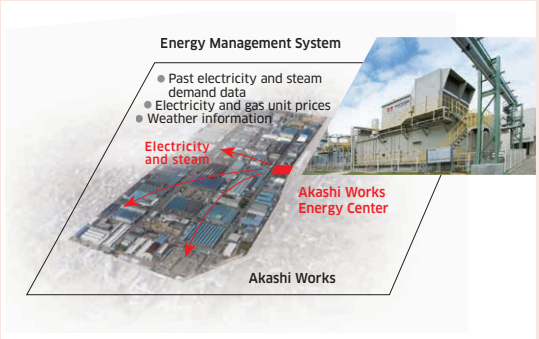
We use the energy visualization system, which has been introduced at all business sites, to promote energy-saving activities.

Energy costs were reduced by 6.6% (approximately ¥700 million) in fiscal 2016. We continue to work to reduce annual resource and energy costs by at least 5% in fiscal 2017 onward.

TOPICS:

Example of Energy Saving: Development and Installation of Energy Management System* at Akashi Works

In addition to external power, electricity and steam through gas turbine power generation systems, boilers, and other forms from the energy center are supplied to the plant at the Akashi Works. These energies are optimized through an energy management system that was developed in-house. Energy costs for electricity and gas were reduced in fiscal 2016 by 3% for the year for the entire plant.



*Energy Management System: Analyzes weather conditions, past electricity and steam demand data as well as electricity and gas unit prices, thereby optimizing the operations of energy equipment such as gas turbines and boilers.

2. Reducing CO_2 Emissions from Production Activities

Kawasaki set a goal to reduce CO_2 emissions from production activities by 5% and is pursuing activities to cut energy consumption.

In fiscal 2016, improvement activities at production sites and reduction in energy consumption using the energy visualization system were key factors in achieving a CO_2 reduction effect of 15,000 tons.

Kawasaki's CO_2 emissions reached 325,000 tons, mainly reflecting an increase in energy input due to expanded production of aircraft bodies at Nagoya Works 1 and construction of high-value-added ships at the Kobe Works. This did not result

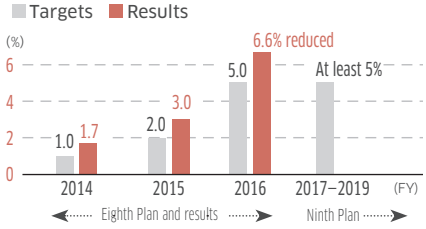


Figure 4: Energy Cost Reduction Targets and Reduction Amounts

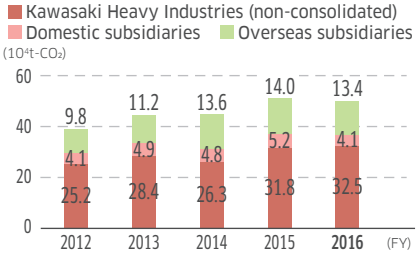


Figure 5: CO_2 Emissions from Production Activities

Note: For domestic sites, the CO_2 emission factors are based on figures published by Japan's Ministry of the Environment for each power provider in each fiscal year.
For overseas sites, the CO_2 emission factors are based on figures published by the Greenhouse Gas Protocol.

in achieving the 5% reduction target, nevertheless, CO_2 emissions were reduced by 4.4%.

3. CO_2 Reduction through Product-Based Contributions

Kawasaki calculates CO_2 reduction of products in use in three categories—energy-related products, transportation-related products, and industrial equipment and other products—to determine the CO_2 reduction effect through product-based contributions, and discloses this information to the public.

An analysis of CO_2 emissions along the supply chain reveals that most of the CO_2 associated with Kawasaki-brand products is released during product use, so our goal is to contribute to lower CO_2 emissions through delivery of highly energy efficient products.

In fiscal 2016, CO_2 reduction through product-based contributions amounted to 745,000 tons, up 45% year on year, thanks to an increase in the number of high-efficiency power generation systems, hydraulic equipment and other systems delivered.

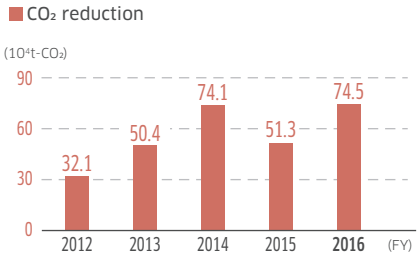


Figure 6: CO_2 Reduction through Product-Based Contributions

Notes: 1. Kawasaki used CO_2 emissions factors provided in the list of calculation methods and emissions factors published by Japan's Ministry of the Environment.
2. The CO_2 reduction effect achieved through higher efficiency of products is based on a comparison using standard, existing products.
3. Application of waste heat and energy derived from waste materials is counted toward the CO_2 reduction effect.

Table 1: CO_2 Reduction by Product Category

Category	Reduction Effect	Main Products	Reason for Reduction
Energy-related products	505,000t-CO_2/year	Gas turbine cogeneration system, cement waste heat power plant	High-efficiency power generation, waste heat utilization
Transportation-related products	214,000t-CO_2/year	Ships (improved propulsion performance), aircraft (lightweight body)	Better fuel economy
Industrial equipment, other products	26,000t-CO_2/year	Hydraulic equipment, robots, sewage aeration blowers	Greater energy savings

4. Estimating CO_2 Emissions in Supply Chain

The scope that Kawasaki is required to cover in tracking CO_2 emissions is expanding, characterized by an accelerating trend toward the inclusion of not only the Company's own operations but those of its supply chain as well. The standards for calculating emissions along our supply chain include Corporate Value Chain (Scope 3) Accounting and Reporting Standard, established by the Greenhouse Gas Protocol. In Japan, the Basic Guidelines on Accounting for Greenhouse Gas Emissions Throughout the Supply Chain—a Japanese version of Scope 3—were prepared by the Research/Study Committee on Standards for Accounting and Reporting Organization's GHG emissions throughout the Supply Chain, established jointly by the Ministry of Economy, Trade and Industry and the Ministry of the Environment, to look into methods for calculating greenhouse gas emissions along corporate supply chains. Using these basic guidelines, Kawasaki calculated CO_2 emissions along its supply chain, and presents the results below. According to this data, the GHG effect accompanying the use of Kawasaki-sold products over the whole supply chain is extremely high. We have been making progress in reducing CO_2 emissions through product-based contributions, but going forward, we will take an even more proactive approach.

Table 2: Fiscal 2016—the Kawasaki Group's Scope 1 and Scope 2 Calculation Results

Category	Calculation Targets	Calculation Results (10^4t-CO_2/year)
Scope 1		
Direct emissions	Direct emissions through use of fuel at Kawasaki and associated industrial processes	17.6
Scope 2		
Indirect emissions from energy-derived sources	Indirect emissions accompanying use of electricity and heat purchased by the Company	32.4

Table 3: Fiscal 2016—Kawasaki's Scope 3 Calculation Results

Category		Calculation Targets	Calculation Results (10^4t-CO_2/year)
Scope 3 (Other indirect emissions) Upstream			
①	Purchased goods and services	Emissions associated with activities up to production of raw materials, parts, purchased goods and sales-related materials	543.2 (10.0%)
②	Capital goods	Emissions from construction and production of Kawasaki's capital goods	25.4 (0.5%)
③	Fuel- and energy-related activities not included under Scope 1 or Scope 2	Emissions associated with procurement of fuel purchased from other providers and procurement of fuel required to generate power, such as electricity and heat	3.6 (0.1%)
④	Transportation and distribution (upstream)	Emissions associated with logistics of raw materials, parts, purchased goods and sales-related materials up to delivery to Kawasaki	0.7 (0.0%)
⑤	Waste generated in operations	Emissions associated with transportation and processing of waste generated by Kawasaki	0.7 (0.0%)
⑥	Business travel	Emissions associated with business travel by employees	1.5 (0.0%)
⑦	Employee commuting	Emissions associated with transportation of employees between their homes and their worksites	0.6 (0.0%)
⑧	Leased assets (upstream)	Emissions associated with operation of assets leased by Kawasaki (excluded if included in Scope 1 or Scope 2 calculations)	Included in Scope 1 and Scope 2 calculations
Scope 3 (Other indirect emissions) Downstream			
⑨	Transportation and distribution (downstream)	Emissions associated with transportation, storage, cargo handling and retail sales of products	0.0 (0.0%)
⑩	Processing of sold products	Emissions associated with processing of intermediate products by companies	Excluded*
⑪	Use of sold products	Emissions associated with use of products by consumers and companies	4,839.0 (89.1%)
⑫	Disposal of sold products	Emissions associated with transportation and treatment of products upon disposal by consumers and companies	Excluded*
⑬	Leased assets (downstream)	Emissions associated with operation of assets leased to other companies	Excluded
⑭	Franchises	Emissions by franchisees	Excluded
⑮	Investments	Emissions related to operation of investments	17.6 (0.3%)

*Excluded from calculation target because the Company is unable to confirm reference data at this time.

5. Reduction of Greenhouse Gas Emissions in Logistics Processes

Kawasaki takes steps to pinpoint CO_2 emissions and promote energy-saving activities in its logistics processes, which cover some of the Company's supply chain, to realize continuous reduction in CO_2 emissions.

In fiscal 2016, CO_2 emissions dropped 9% year on year, to approximately 4,000 tons, thanks to enhanced efficiency of truck transport.

6. Utilizing Renewable Energy

In pursuit of CO_2 reduction, we have embraced renewable energy options, particularly solar power generating facilities. In fiscal 2016, we used about 1.7GWh of power from renewable energy sources.

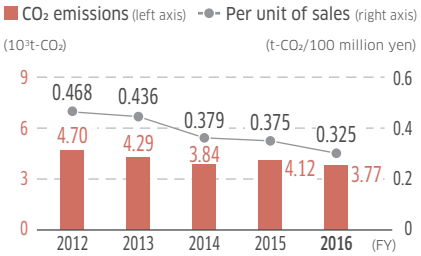


Figure 7: CO_2 Emissions from Logistics Processes and Per Unit of Sales

Notes: 1. Per unit of sales basis is a measurement obtained by dividing CO_2 emissions by net sales.
2. The CO_2 emissions factor is based on values published by Japan's Ministry of the Environment for each power provider in each fiscal year.

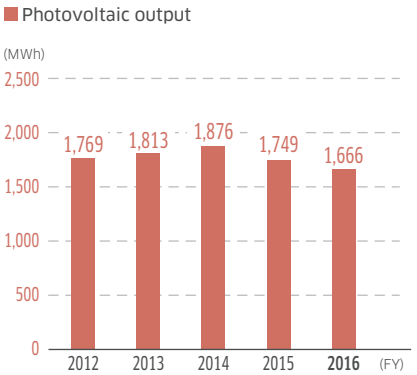


Figure 8: Electric Power Output from Photovoltaic Systems

Key Strategies and Targets under Ninth Environmental Management Activities Plan (FY2017–FY2019)

CO_2 and energy cost reduction

Targets

❶ **Reduce resource and energy costs, mainly through wider application of energy visualization system**
→ Cut annual resource and energy costs by at least 5%

❷ **Reduce CO_2 emissions**
→ Cut CO_2 emissions per unit of sales by at least 3% year on year

❸ **Reduce CO_2 emissions through product-based contributions**
→ Identify CO_2 emission reduction effect through product-based contributions and disclose to public

❹ **Carefully select investment projects**
→ Push internal rate of return above 8% through energy-saving facilities

Realization of a Recycling-Oriented Society

Key Strategies and Targets under Eighth Environmental Management Activities Plan (FY2014–FY2016) and Fiscal 2016 Results

Promotion of the 3Rs

Targets	Results
❶ **Promoting reduction in waste generation, greater reuse and more recycling** Maintain zero emission status, and reduce total waste emissions per unit of sales Boost recycling rate above the previous year's level	Maintained zero emission status, with a final disposal ratio below 1%, and cut total waste generation per unit of sales by 10% over the fiscal 2015 level Recycling rate reached 97%, down from 98% in fiscal 2015
❷ **Promoting PCB treatment** Process low-concentration PCB waste appropriately through low-cost methods	A total of 142 units of low-concentration PCB waste were processed

Toward Realization of a Recycling-Oriented Society

Efforts to curb consumption of natural resources and reduce waste have acquired greater social urgency, paralleling wider economic activity and population growth.

Throughout the Group, we take great care to fully utilize the limited resources procured for our products and manufacturing processes, which consume these resources without waste. We also advocate designs that use resources effectively through such approaches as repurposing and recycling, and strive to make products lighter, more durable and more recyclable.

1. Reduction of Waste Generation

Our activities for reducing the total amount of waste generated through our manufacturing processes is an indication of our effective use of resources, and toward this end, we have set goals to cut waste generated per unit of sales and to achieve zero status for unrecycled waste disposed into landfills.

Toward this end, we promote the 3Rs—reduce, reuse and recycle—in activities to curb waste from manufacturing activities, repurpose materials, and turn waste into new resources. We also outsource processing to providers who are able to recycle the waste generated at our sites.

In fiscal 2016, we met our targets by achieving a 10% year-on-year reduction in waste, to 4.17 per unit of sales—t/¥100 million—and a direct-to-landfill disposal ratio of 0.3%. Moreover, the corporate recycling rate was 97%. However, total waste generation was up over fiscal 2015, paralleling increased production of ships and aircraft. Going forward, we will examine waste from the perspective of its potential reduction.

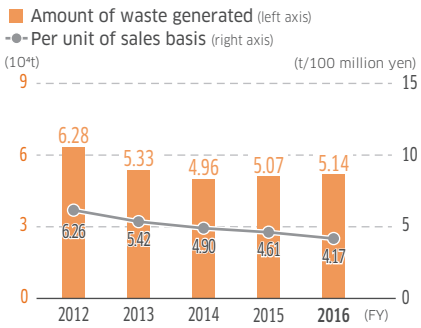


Figure 9: Amount of Waste Generated and Per Unit of Sales Basis

Note: Per unit of sales basis is a measurement obtained by dividing amount of waste generated by net sales.

2. Promoting PCB Treatment

The disposal of PCB (polychlorinated biphenyl) waste is proceeding through a worldwide effort, in line with the Stockholm Convention, which stipulates procedures and requirements including proper treatment of PCBs. In Japan, disposal is undertaken in a systematic manner, mainly by the Japan Environmental Storage & Safety Corporation (JESCO), which was established by the Ministry of the Environment, and we are undertaking the treatment of our PCBs with its completion targeted ahead of the national schedule.

Toward this end, we will steadily implement steps to address PCB waste. We will stop using products and devices that contain PCBs and put such items into storage. We will confirm disposal volume, and we will look into providers with facilities to treat low-concentration PCB waste on our behalf. As of fiscal 2016, we had made favorable progress toward our target, with disposal reaching 68% on a disposal cost basis.

Key Strategies and Targets under Ninth Environmental Management Activities Plan (FY2017–FY2019)

Promotion of the 3Rs

Targets

❶ **Reduce total waste emissions and maintain zero emission status**
→ Reduce total waste emissions per unit of sales by at least 1% from level achieved under the Eighth Plan. Push final disposal ratio below 1%

❷ **Promote reuse and recycling**
→ Boost recycling rate above 98%

❸ **Promote PCB treatment**
→ Systematically reduce high- and low-concentration PCB waste

Realization of a Society Coexisting with Nature

Key Strategies and Targets under Eighth Environmental Management Activities Plan (FY2014–FY2016) and Fiscal 2016 Results

Reduction of environmental load

Targets

❶ **Reduce chemical substances**
Major VOCs per unit of sales to be at or below the average of results (135) achieved in the Seventh Plan
Seek to reduce heavy metals to zero, in principle, by fiscal 2021

Results

Achieved target of 79 for major VOCs per unit of sales
Dichloromethane emissions decreased 17%, and the amount of heavy metals handled dropped 40%

Promotion of resource conservation

Targets

❶ **Continue with forest conservation activity**
Carry out forest conservation activity at least twice a year

❷ **Conserving water**
Reduce consumption per unit of sales to the level below the amount in fiscal 2014

Results

Activities were undertaken a total of four times in Hyogo Prefecture and Kochi Prefecture

Achieved target of 0.537 per unit of sales (the amount of water used was down 2% per unit of sales from fiscal 2015)

Toward Realization of a Society Coexisting with Nature

Modern society is built on the benefits of ecosystem services from nature and could have a negative impact on ecosystems without its proper management.

The Kawasaki Group strives to reduce environmental impact through products and manufacturing processes in harmony with the global environment and seeks to contribute to the protection of ecosystems as part of its overall efforts to realize a society coexisting with nature.

1. Chemical Substance Reduction

As chemical substances used in processes to manufacture products can have a detrimental effect on human health and ecosystems, we will conduct proper management and strive to reduce consumption of such substances. We have set targets for major VOCs (toluene, xylene and ethylbenzene), dichloromethane and hazardous heavy metals in each business segment, and applied approaches to curb consumption and emissions.

Toward this end, we will emphasize the use of effective painting and metal processing and treatment and also introduce alternatives to current paints and chemical substances.

In fiscal 2016, several factors caused major VOCs per unit of sales to deteriorate, including an increase in the amount of paint used in the construction of ships. However, we were able to reduce consumption of dichloromethane and heavy metals. Going forward, we will continue to conduct proper management of chemical substances while reducing its amount used.

2. Forest Conservation Activity

Objectives

1. Promote coexistence at community level by participating in local environmental activities
2. Contribute to protection of watershed forests and help prevent global warming
3. Use as opportunity for employees to learn about the environment, and boost awareness of the importance of environmental protection

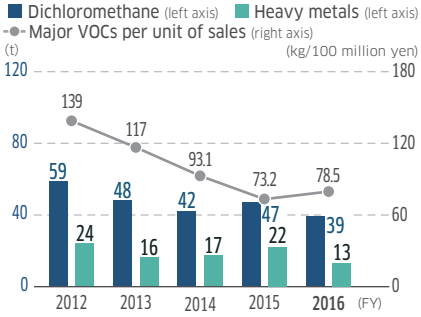


Figure 10: Emissions and Handling Volume of Managed Chemical Substances

Notes: 1. Major VOCs per unit of sales is a measurement obtained by dividing VOC emissions by net sales.
2. Heavy metals represent the combined amount of lead compounds and hexavalent chromium compounds. Reduction activities are undertaken separately for each substance.

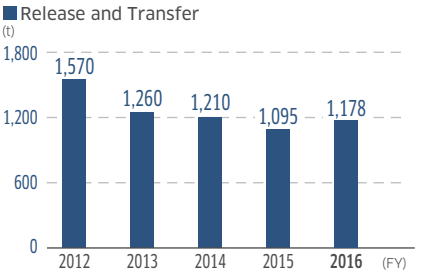


Figure 11: Release and Transfer of Chemical Substances Designated under the PRTR Law*

*PRTR law: Pollutant Release and Transfer Register law (Order for Enforcement of the Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof)

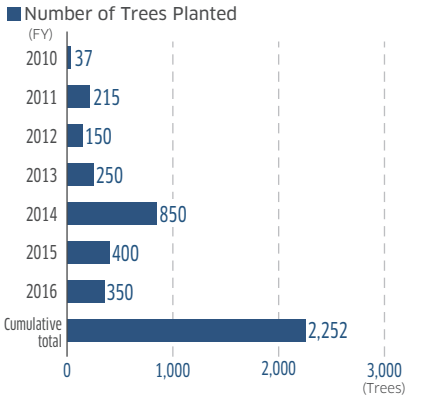


Figure 12: Results of Tree-Planting Activity

Table 4: Fiscal 2016 Achievements

Activity location	Town of Taka, in Hyogo Prefecture	Town of Niyodogawa, in Kochi Prefecture
Activity content	Tree pruning, thinning and planting Nature watching and observation events, woodworking classes	Tree thinning, environmental education
Participants	Employees and their families, former employees and others (201 people)	Employees and others (69 people)
Achievements	Area: 0.7ha Amount of CO_2 absorbed: 1.17t/CO_2 Trees planted: 350	Area: 1.0ha Amount of CO_2 absorbed: 55t/ CO_2
Number of events	Three times a year	Once a year

3. Conserving Water

Kawasaki strives to reduce water consumption and sets reduction targets on a per unit of sales basis.

In fiscal 2016, we were able to cut water consumption and improve by 2% per unit of sales, thanks to progression on measures, such as repairing leaks at factories, and a drop in water usage.

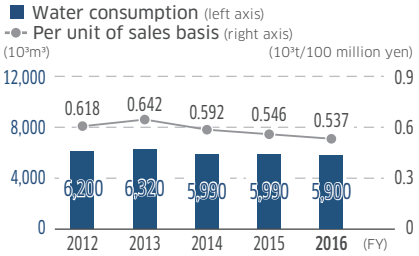


Figure 13: Water Consumption and Per Unit of Sales Basis

Note: Per unit of sales basis is a measurement obtained by dividing water consumption by net sales.

4. Biodiversity-Friendly Society

A short-term target in Japan's national biodiversity strategy, which was revised in 2010, is to analyze the state of biodiversity to get a clearer picture of conditions and, based on this knowledge, to promote activities that protect biodiversity. We will support efforts to achieve this objective by implementing the activities listed below at all business sites with biodiversity protection in mind.

We also undertake activities such as greening programs on corporate premises that take into account location or other characteristics specific to each operating site.

Efforts to Reduce the Environmental Load from Business Activities

1. Promote measures to cut greenhouse gas emissions
2. Reduce the amount of industrial waste for final disposal
3. Decrease the environmental load from wastewater and chemical substances

Non-Business Activity

1. Promote cleanup events around business sites
2. Implement greening programs and other activities based on analysis of and insight into biodiversity conditions on corporate premises and the surrounding area
3. Embrace collaborative opportunities to protect biodiversity with local groups, such as creating corporate forests

5. Responding to the ELV Directive[*1], the RoHS Directive[*2], and the REACH Regulation[*3]

Since 2000, laws and regulations related to chemical substances have been strengthened in the European Union (EU) by the establishment of such controls as the ELV Directive, the RoHS Directive, and the REACH Regulation. The ELV Directive focuses on automobiles, and while motorcycles are not subject to the content of this directive, the Motorcycle & Engine Company has embraced the voluntary actions espoused by the Japan Automobile Manufacturers Association (JAMA). The Precision Machinery Company also applies this directive to some of our products. The RoHS Directive covers electric and electronic products, and within the Kawasaki structure, the Precision Machinery Company, which includes the Robot Division, complies with the directive for some of its products. The REACH Regulation went into effect in June 2007 and applies to all chemical substances manufactured in and imported by the EU. Enterprises that manufacture or import one ton or more of chemical substances a year are required to register the chemical substances.

As Kawasaki products are mainly molded articles, only a limited number need

to be registered. Registration and notification are, however, compulsory for all substances that are deliberately emitted and all substances that are carcinogenic or otherwise of high concern. In addition to registration and notification, regulations exist for the evaluation, authorization, restriction and communication of information regarding chemical substances, necessitating a system to identify information about the chemical substances in products throughout our entire supply chain.

Laws and regulations related to chemical substances have been strengthened not only in the EU but in many countries around the world. As requirements vary by country, for instance regarding substances and products covered, we believe that our response must be based on a firm understanding of the law.

Kawasaki practices CSR procurement and responds to requests from customers to gather chemical substance information. In addition, the Motorcycle & Engine Company has created the Kawasaki Material Data System II[*4] to collect data about chemical substances and respond to REACH and other applicable chemical substance regulations.

CSR Procurement Guidelines ▸
http://global.kawasaki.com/en/corp/sustainability/procurement/guideline.html

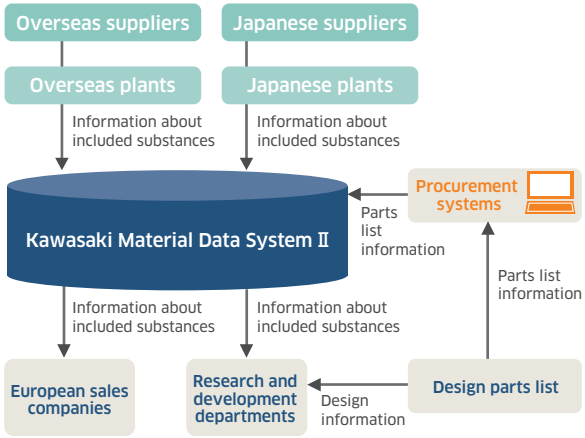


Figure 14: Response to REACH by the Motorcycle & Engine Company

*1 ELV Directive: End of Life Vehicles Directive
*2 RoHS Directive: Directive on Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment
*3 REACH Regulation: Regulation on Registration, Evaluation, Authorization and Restriction of Chemicals
*4 Kawasaki Material Data System II: Currently switching to IMDS (International Material Data System: A reporting system encompassing 26 finished automakers in Europe, the United States, Japan and South Korea which enables suppliers to identify the composition of materials in respective parts delivered to the automotive industry)

Key Strategies and Targets under Ninth Environmental Management Activities Plan (FY2017–FY2019)

Reduction of environmental load

Targets

❶ Reduce chemical substances
→ Reduce major VOCs per unit of sales by at least 1% from level achieved under the Eighth Plan
Cut dichloromethane by at least 1% year on year
Strive to reduce hexavalent chromium to zero, in principle, by fiscal 2021

❷ Conserve water
→ Reduce annual consumption of water per unit of sales by at least 1%
Track cost effect of measures to conserve tap water and prevent leaks from clean-water pipes

❸ Continue with forest conservation activity
→ Carry out forest conservation activity at least twice a year

Establishment of Environmental Management Systems

Key Strategies and Targets under Eighth Environmental Management Activities Plan (FY2014–FY2016) and Fiscal 2016 Results

Enhancement of the Kawasaki Group environmental management system

Targets	Results
❶ **Reinforce the environmental management capabilities of Kawasaki and consolidated subsidiaries in Japan** Set reduction targets, and provide appropriate feedback	Considered reduction targets for the Group as a whole, but process did not lead to establishment of Group-wide targets
❷ **Reinforce the environmental management capabilities of overseas subsidiaries** Identify issues through more accurate understanding of environmental data, and support methods to deal with such issues	Received third-party verification of greenhouse gas data. Visited three locations in the United States to promote environmental management practices under the Group banner

Toward Establishment of Environmental Management Systems

In our environmental management activities, we quantitatively assess the results of production activities through IT systems and repeatedly improve our operations.

In fiscal 2016, we added about 1,500 monitoring points into K-SMILE, a system introduced in fiscal 2014 to promote energy-saving activities through visualization of energy consumption at the production stage. This brings the total number of monitoring points to about 5,000.

We utilize ECOKEEP, an internal information management system introduced in fiscal 2012, to track progress on environmental management targets, manage environmental data and issue an electronic manifest for industrial waste.

1. Kawasaki Group EMS

To promote environmental management throughout the Group, Kawasaki and its subsidiaries embrace the practice of building an environmental management system.

As of fiscal 2016, all of the Company's manufacturing sites and domestic and overseas subsidiaries have either obtained ISO 14001 certification or simplified EMS certification, or established EMS through self-declaration. Details on the scope of environmental management within the Group and the latest information on the establishment of EMS are provided below. At sites that have already implemented an EMS, efforts are being directed into the collection of environmental data and the sharing of such data. Representatives began visiting sites, starting with large-scale operations, to ensure common policy on environmental management from a Group-wide perspective and to share information on local EMS status. In fiscal 2016, representatives made stops at three production sites in the United States.

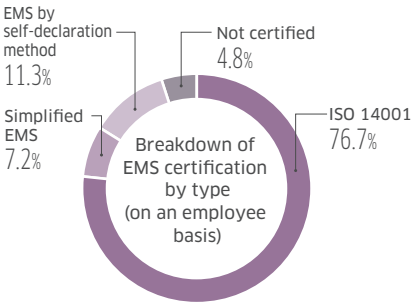


Figure 15: Breakdown of EMS Certification, by Type, within the Group (on an employee basis)

Note: Denominator is number of employees within the Group on a consolidated basis.

Table 5: Current Situations for Acquiring ISO 14001 (JIS Q 14001) Certification for Kawasaki Production Bases

Internal companies		Date acquired	Registration
Ship & Offshore Structure Company	Kobe Works	Aug. 2002	DNV GL
	Sakaide Works	Aug. 2002	DNV GL
Rolling Stock Company		Feb. 2002	LRQA
Aerospace Company		Feb. 2002	BSK
Gas Turbine & Machinery Company	Gas Turbine Division	Mar. 2000	LRQA
	Machinery Division	Dec. 2000	NK
Plant & Infrastructure Company		Nov. 1999	JICQA
Motorcycle & Engine Company		Feb. 2000	DNV GL
Precision Machinery Company	Nishi-Kobe Works	Feb. 1998	DNV GL
	Robot Division	Mar. 2011	DNV GL

LRQA: Lloyd's Register Quality Assurance Limited, JICQA: JIC Quality Assurance Ltd., NK: Nippon Kaiji Kyokai (ClassNK), BSK: Bouei Kiban Seibi Kyoukai (Defence Structure Improvement Foundation), DNV GL: DNV GL Group

Table 6: Domestic Subsidiaries

Oversight organization	Company	EMS level*/ Date of establishment	
Ship & Offshore Structure Company	Kawasaki Techno Wave Co., Ltd.	1	Aug. 2000
	Kawaju Support Co., Ltd.	2	Dec. 2005
	Kawasaki Marine Engineering Co., Ltd.	3	Apr. 2013
	KHI JPS Co., Ltd.	3	Mar. 2008
Rolling Stock Company	Alna Yusoki-Yohin Co., Ltd.	1	Nov. 2008
	Kawasaki Rolling Stock Component Co., Ltd.	1	Aug. 2002
	Kawasaki Rolling Stock Technology Co., Ltd.	1	Aug. 2002
	Kansai Engineering Co., Ltd.	3	Aug. 2002
	Sapporo Kawasaki Rolling Stock Engineering Co., Ltd.	2	Jun. 2011
	Nichijo Manufacturing Co., Ltd.	2	Oct. 2005
Aerospace Company	Kawaju Gifu Engineering Co., Ltd.	1	Feb. 2002
	Kawaju Gifu Service Co., Ltd.	1	Feb. 2002
	KGM Co., Ltd.	1	Feb. 2002
	NIPPI Corporation	1	Dec. 2006
Gas Turbine & Machinery Company	Kawaju Akashi Engineering Co., Ltd.	1	Mar. 2000
	Kawasaki Thermal Engineering Co., Ltd.	1	Apr. 2002
	Kawasaki Machine Systems, Ltd.	1	Mar. 2000
	Kawasaki Prime Mover Engineering Co., Ltd.	1	Dec. 2002
	Kawasaki Naval Engine Service, Ltd.	3	Aug. 2016
Plant & Infrastructure Company	KEE Environmental Construction, Co., Ltd.	1	Dec. 2003
	EarthTechnica M&S Co., Ltd.	3	Apr. 2013
	Kawasaki Environmental Plant Engineering Co., Ltd.	1	Jun. 2002
	Kawaju Facilitech Co., Ltd.	2	Jul. 2013
	Kawasaki Engineering Co., Ltd.	3	Oct. 2009
	EarthTechnica Co., Ltd.	1	Sep. 2000
Motorcycle & Engine Company	Kawasaki Motors Corporation Japan	1	Feb. 2008
	K-Tec Corp.	1	Dec. 2014
	Technica Corp.	3	Mar. 2012
	Autopolis	2	Dec. 2011
	Union Precision Die Co., Ltd.	1	Jul. 2006
Precision Machinery Company	Kawasaki Hydromechanics Corporation	1	Jun. 2007
	Kawasaki Robot Service, Ltd.	1	Apr. 2012
Head Office	Kawasaki Trading Co., Ltd.	1	Dec. 2004
	Kawaju Service Co., Ltd.	1	Feb. 2000
	Kawasaki Technology Co., Ltd.	3	Oct. 2011
	Kawasaki Life Corporation	2	Jul. 2006
	K Career Partners Corp.	2	Mar. 2007
	Benic Solution Corporation	2	Feb. 2006

Table 7: Overseas Subsidiaries

Oversight organization	Company	Location	EMS level*/ Date of establishment	
Rolling Stock Company	Kawasaki Rail Car, Inc.	U.S.A.	3	Jul. 2015
Gas Turbine & Machinery Company	Kawasaki Gas Turbine Asia Sdn. Bhd.	Malaysia	3	Mar. 2013
	Kawasaki Gas Turbine Europe GmbH	Germany	3	Mar. 2013
	Wuhan Kawasaki Marine Machinery Co., Ltd.	China (PRC)	1	Jul. 2009
Plant & Infrastructure Company	KHI Design & Technical Service Inc.	Philippines	3	Nov. 2011
Motorcycle & Engine Company	Kawasaki Motors Corp., U.S.A.	U.S.A.	3	Mar. 2013
	Kawasaki Motors Pty. Ltd.	Australia	3	Mar. 2013
	PT. Kawasaki Motor Indonesia	Indonesia	3	Jan. 2012
	KHITKAN Co., Ltd.	Thailand	1	Dec. 2011
	Kawasaki Componants da Amazonia Ltda	Brazil	3	Jun. 2013
	Kawasaki Motores do Brasil Ltda.	Brazil	3	Jun. 2013
	Kawasaki Motors Europe N.V.	Netherlands	3	Feb. 2014
	Kawasaki Motors (Phils.) Corporation	Philippines	3	Jan. 2012
	Kawasaki Motors Manufacturing Corp., U.S.A.	U.S.A.	1	Apr. 2003
	Kawasaki Motors Enterprise (Thailand) Co., Ltd.	Thailand	1	Dec. 2011
	Canadian Kawasaki Motors Inc.	Canada	3	Feb. 2013
Precision Machinery Company	Kawasaki Precision Machinery (Suzhou) Ltd.	China (PRC)	1	Dec. 2007
	Kawasaki Precision Machinery (UK) Ltd.	UK	1	Nov. 2001
	Kawasaki Chunhui Precision Machinery (Zhejiang) Ltd.	China (PRC)	1	Nov. 2012
	Flutek, Ltd.	South Korea	1	Nov. 2005
	Kawasaki Robotics (Tianjin) Co., Ltd.	China (PRC)	3	Nov. 2012
	Kawasaki Robotics GmbH	Germany	3	Nov. 2012
	Kawasaki Robotics (U.S.A.) Inc.	U.S.A.	1	Feb. 2006
Head Office	KHI (Dalian) Computer Technology Co., Ltd.	China (PRC)	3	May 2013

*Level 1: ISO 14001 registration
Level 2: Simplified EMS certification
Level 3: Self-declaration of EMS establishment

TOPICS

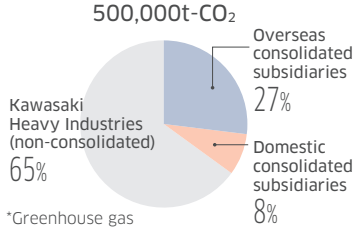
In order to share information related to environmental management, we visited three business locations in the United States, including Kawasaki Motors Manufacturing Corp., U.S.A., our largest overseas production site, in fiscal 2016.

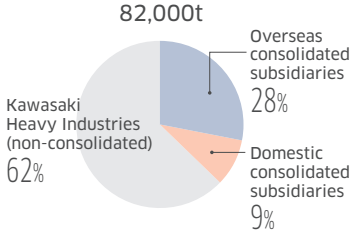
Enhancement of the Kawasaki Group's Environmental Management System

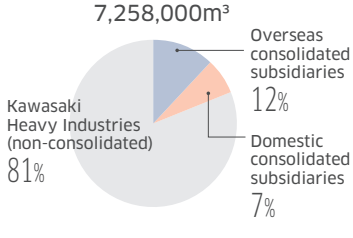
Environmental Risk Reduction

The environmental load of subsidiaries in Japan and overseas during fiscal 2016 accounted for 35% of the entire Group's CO_2 emissions, 38% of waste emissions, and 19% of water consumption, and management for the entire Group is thus required.

The Group has production bases in Europe, North America, South America, China, and Southeast Asia, in addition to Japan, and conducts operations according to the rules in each country and region. Even in the face of these differing situations, we set and follow up on targets for our environmental load, promote communication throughout the entire Group, and work to reduce environmental risks.







Kawasaki Rail Car, Inc.

In 1985, Kawasaki established a subsidiary to locally produce commuter train cars for the Port Authority Trans-Hudson (PATH) PA-4 subway in New York. Kawasaki Rail Car (KRC) was established in 1989, under this subsidiary, to assume its parent's operations. Located in the New York suburb of Yonkers, KRC utilizes its geographical location to provide a range of services, including final assembly, testing and after-service of rolling stock, to New York City Transit and other customers in the region.

In 2015, the company introduced an EMS based on self-declaration and assigned a manager with environmental responsibilities to oversee environmental management practices.

Kawasaki Motors Manufacturing Corp., U.S.A.

Lincoln Plant

The Lincoln Plant of Kawasaki Motors Manufacturing, located in Lincoln, Nebraska, is a production base with a consumer products division as well as a rolling stock division. The company acquired ISO 14001 certification in 2003, and in fiscal 2016, achieved its environmental cost target—that is, expenses linked to electricity, city gas, water, wastewater and waste—of less than 0.773% of sales through monthly confirmation of progress toward this target and steps to reach the destination.

The Lincoln Plant is working on various fronts to make operations more environment-friendly, including such efforts as adjusting the placement of localized lighting, introducing sensor-equipped LED lighting, utilizing reusable containers and fixtures, switching from air driven tools to battery powered tools, and recovering drain steam.

Fixtures Enabling Container Storage
A dedicated reusable fixture is used on the end underframe of a railway car to enable standard container storage. As a result, the transport efficiency between Japan and the U.S. has been improved, and the reduction of wood waste has been realized.

Adoption of Battery Powered Tools
By switching from less energy-efficient compressed air driven tools to more efficient battery powered tools, we reduce the energy required to assemble our products.

Maryville Plant

The Maryville Plant of Kawasaki Motors Manufacturing, located in Maryville, Missouri, is a production base that focuses on general-purpose engines. The plant has obtained ISO 14001 certification and sets environment-oriented targets each fiscal year, which underpins its efforts in environmental management. In fiscal 2016, activities were directed toward boosting the recycling ratio, from the prevailing 75%, to 78%, and recycling 80% of the waste generated through new construction, and both targets were achieved. In Missouri's "Strive for 75" initiative to recycle more than 75% of waste, the Maryville Plant achieved a recycling ratio in excess of 80% for two consecutive years and was recognized with a state environmental excellence award from the non-profit Missouri Waste Control Coalition.

The Maryville Plant undertakes various practices to enhance its environmental footprint, including routine washing and reuse of gloves, efforts to raise its exchange ratio by sorting out valuables, taking ordinary waste out of industrial waste for separate disposal, and boosting transportation efficiency and cost efficiency by utilizing waste management companies that can dispose several types of waste.

Missouri Environmental Excellence Award
The Maryville Plant received a state environmental excellence award from the non-profit Missouri Waste Control Coalition.

Left: Steve Bratt (Vice President, Plant manager)
Right: Todd Turner (Supervisor, Maintenance Environmental & Recycling)

2. Compliance with Laws and Regulations

Within the Kawasaki Group, environmental management activities are undertaken in the Group's efforts to comply with environmental laws and regulations. In fiscal 2016, there were two cases requiring improvement with pipe dismantling work within some plants, including one for late notification of construction work such as the release of specified dust.

Regarding construction projects for upgrading plant facilities, we will work closely with contractors, regardless of project scale, to fulfill our responsibility as the ordering party.

3. Risk Management

In addition to approaches based on Company-wide risk management structures, we hold liaison conferences from time to time for personnel with environmental responsibilities at Group companies to ensure adherence to environmental laws and regulations, dissemination and full understanding of legal revisions, and the enhancement of their capabilities. These conferences, which are held under the direction of the head office, focus on compliance with environmental laws and regulations to preempt environmental accidents and other situations.

In fiscal 2016, no revisions were made to applicable laws, and therefore, no new approaches to legal risk were implemented.

4. Promoting Environmental Communication

Raising Environmental Awareness

We conduct programs designed to enhance perception and awareness of environmental issues among each and every employee so that they can act with greater environmental consciousness in the community and at home in addition to the workplace.

- Articles in the Kawasaki internal bulletin
- President's message for Environment Month
- Distribute information, such as environmental data and case examples of energy savings, through intranet

Articles featured in internal bulletins

President's message on environmental management

Environmental e-Learning

To maintain and improve environmental awareness among employees throughout the domestic Group, we offer environmental e-learning opportunities to new employees. This ongoing process is aimed at new employees at Kawasaki and domestic consolidated subsidiaries. In fiscal 2016, approximately 1,800 people participated in the environmental e-learning courses. The attendance rate was 93%.

Cultivating Qualified Managers

To enrich management activities emphasizing energy and the environment, we are striving to cultivate individuals with legal qualifications required under laws and regulations related to energy and the environment. In addition, as an internal qualification, we offer training for internal ISO 14001 environmental auditors, through which 94 employees qualified as internal environmental auditors in fiscal 2016.

Table 8: Number of Qualified Pollution Control Managers

Air	83
Water	72
Noise, vibration	42
Others	80
Total	277

Table 9: Number of Qualified Energy Managers

Energy managers	77

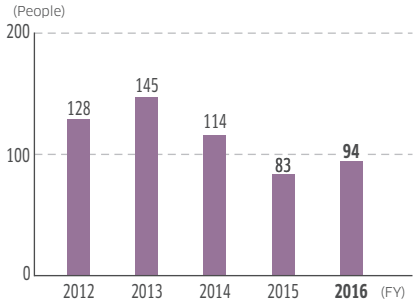


Figure 16: Number of Completed Training of Internal Environmental Auditors (ISO 14001)

Key Strategies and Targets under Ninth Environmental Management Activities Plan (FY2017–FY2019)

Enhancement of environmental management systems

Targets

❶ Reinforce environmental management capabilities and lower environmental risk

→ Certified business sites to complete transition to ISO 14001: 2015
Visit domestic and overseas production sites to better pinpoint status of environmental management

Heightened Awareness as an Environmentally Friendly Brand

Key Strategies and Targets under Eighth Environmental Management Activities Plan (FY2014–FY2016) and Fiscal 2016 Results

Heightened awareness as an environmentally friendly brand

Targets	Results
❶ Leverage Kawasaki Green Product Promotion Activity Introduce to the public products that have passed conformity assessment	Registered 11 products as Kawasaki-brand Green Products following conformity assessment
❷ Enhance image through external evaluations and rankings Work to raise Kawasaki's environmental ratings	Responded to questionnaires of various external evaluation organizations, including DJSI, CDP and Toyo Keizai. Received third-party verification from SGS Japan Inc. on greenhouse gas emissions in fiscal 2016

Toward Heightened Awareness as an Environmentally Friendly Brand

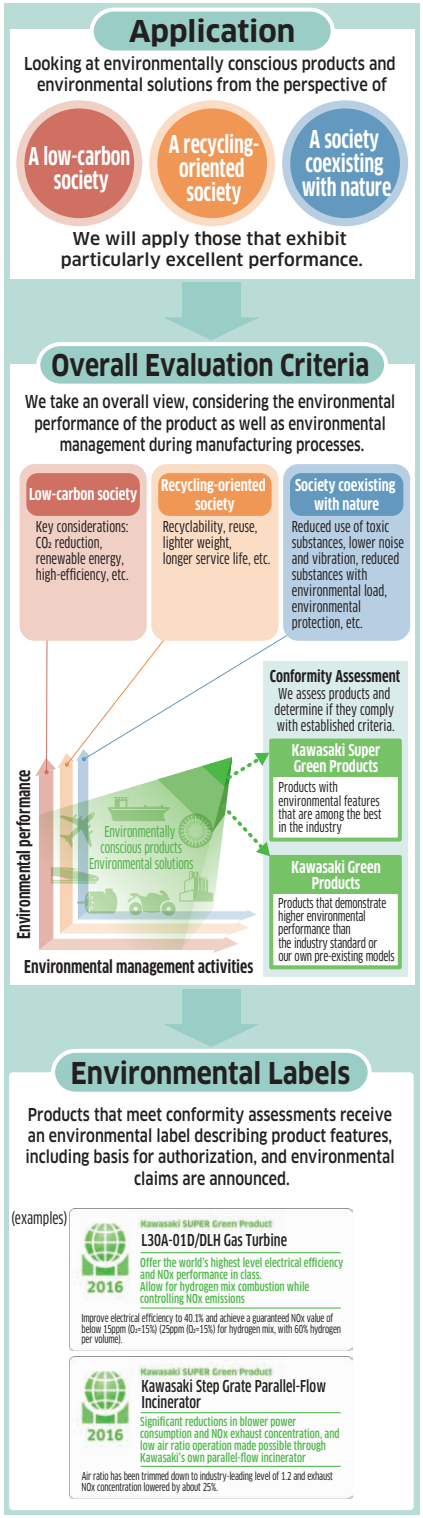
We actively distribute information externally about Kawasaki-brand Green Products, which have passed conformity assessment under the Group's own criteria, in a way that makes environmentally conscious products easy to understand. As in the previous fiscal year, we selected 11 products in fiscal 2016, bringing the lineup of green products to 32 since the program was initiated in fiscal 2014.

1. Kawasaki Green Product Promotion Activity

To realize our Group Mission: "Kawasaki, working as one for the good of the planet," we will draw on high-level, comprehensive technological capabilities over the Kawasaki Group's extensive range of business pursuits to create new value for coexisting with nature and building a brighter, more comfortable future for generations to come. We have launched Kawasaki-brand Green Products, a program in support of the Group Mission objective and through which we will boost the environmental performance of products and accelerate the reduction of environmental impact caused by associated manufacturing processes. The products selected for this program must meet self-established criteria and are categorized as either Kawasaki Green Products or Kawasaki Super Green Products. The products are then labeled compliant with ISO 14021, and the list is made public.

The program logo embodies the Group's commitment to environmental sustainability through products and manufacturing. The three pillars in the logo represent our primary business areas—land, sea and air transport systems, energy and environmental engineering, and industrial equipment—and the innovative and advanced technological capabilities in these respective areas form a firm foundation for these pillars, which together support the global environment.

Kawasaki Green Product Promotion Activity
Program logo



2. Product Assessment

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

1. Product weight reduction
2. Product energy saving
3. Longer product life
4. Product safety and environmental conservation effectiveness
5. Measures for product disposal and recycling
6. Environmental impacts when problems or other extraordinary circumstances occur
7. Provision of information for use and maintenance
8. Compliance with regulations

3. External Information Disclosure

At Kawasaki, we vigorously pursue disclosure of environmental information through many external evaluation organizations, including the CDP Climate Change Information Request, published by the Carbon Disclosure Project (CDP); the Environmental Management Survey, conducted by Nikkei Research Inc.; the Toyo Keizai CSR Survey; and the Dow Jones Sustainability Index.

Key Strategies and Targets under Ninth Environmental Management Activities Plan (FY2017–FY2019)

Heightened awareness as an environmentally friendly brand

Targets

1. **Leverage Kawasaki Green Product Promotion Activity**
   → Register Kawasaki-brand Green Products every year and release data to public
2. **Enhance image through external evaluations and rankings**
   → Announce results of third-party verification, improve evaluations under such schemes as CDP (Carbon Disclosure Project: world's most authoritative CO_2 index), and sustain placement in Dow Jones Sustainability Index

The Third Set of Kawasaki-brand Green Products

Active Suspension System

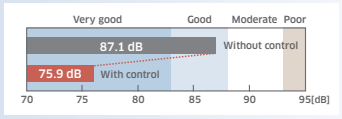
2016
Kawasaki
Green Product

Kawasaki Heavy Industries, Ltd.

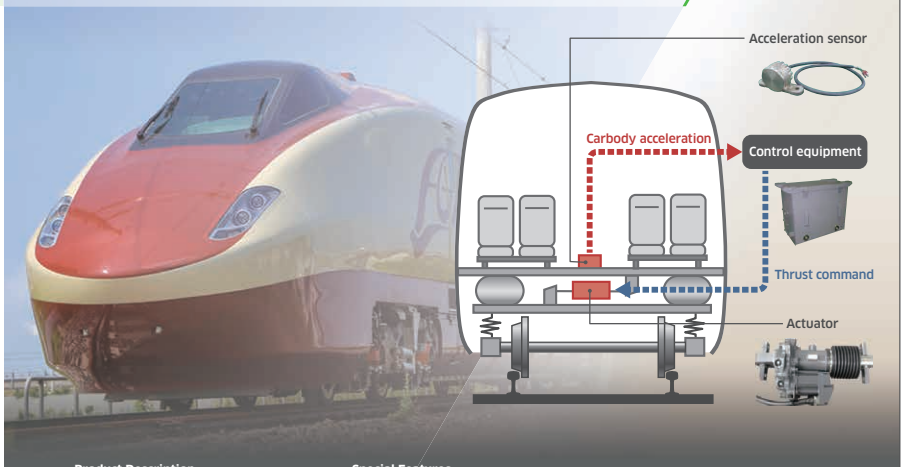
Kawasaki
Powering your potential

Compact, lightweight suspension system developed in-house to provide improved ride quality and lower energy consumption

This active suspension system has been downsized from previous systems, with the installation length contracted from 750mm to 460mm and the weight reduced from 70kg to 32kg. The system also features a 30% improvement in power consumption, better responsiveness and reduced noise/vibrations.



Ride quality (Lt)



Product Description

An active suspension system that comes installed with an in-house developed electric actuator, and delivers significant improvements in ride quality.

Special Features

- Offers reduced power consumption compared with previous systems through a 50% improvement in efficiency of the actuator, which limits vibrations
- More compact and lightweight (downsized from 750mm and 70kg, to 460mm and 32kg) compared with previous systems
- Reduces vibrations and negative impact on tracks through improved responsiveness

L30A-01D/DLH Gas Turbine

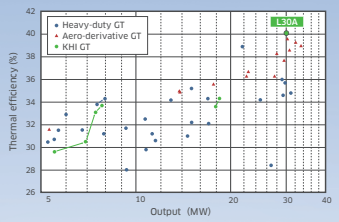
2016
Kawasaki
SUPER Green Product

Kawasaki Heavy Industries, Ltd.

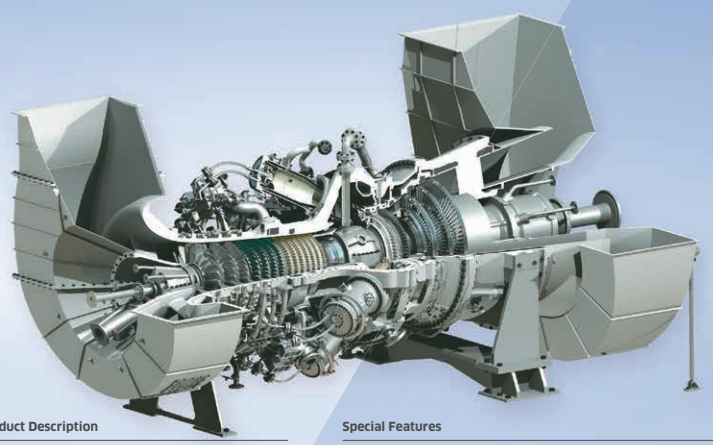
Kawasaki
Powering your potential

Offer the world's highest level electrical efficiency and NOx performance in class. Allow for hydrogen mix combustion while controlling NOx emissions

Improve electrical efficiency to 40.1% and achieve a guaranteed NOx value of below 15ppm (O_2=15%) (25ppm (O_2=15%) for hydrogen mix, with 60% hydrogen per volume).



*ISO condition: 15℃, Generator end



Product Description

Highly efficient gas turbines that deliver eco-friendly low NOx emissions. The world's highest efficiency was achieved by adapting high pressure ratio compressor, improvements of components, state-of-the-art cooling technology. Well-proven Kawasaki Dry Low Emission (DLE) combustor has been improved to enable hydrogen mixed combustion while maintaining world's lowest NOx.

Special Features

- Achieve electrical efficiency of 40.1%—world's highest in 20MW–35MW class
- Offer the world's lowest NOx emissions of below 15ppm (O_2=15%) (25ppm (O_2=15%) for hydrogen mix) due to their in-house developed DLE combustor that allows for hydrogen mixed combustion
- Extend overhaul intervals to six years that is 1.5 times longer than previous models

CK Mill

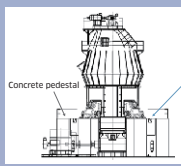
2016
Kawasaki
Green Product

Kawasaki Heavy Industries, Ltd.

Kawasaki
Powering your potential

Long-lifetime CK Mill that achieved remarkable power savings and reduced vibrations

Energy consumption has been lowered by 30%–50%, thanks to improved grinding energy efficiency. The weight and vibration level were reduced by around 10% and 50%, respectively, by switching the support structure (pedestal) for the main pressing mechanism from steel plates to concrete.



Vibration measurement values of pedestal	
Concrete	Steel plates
Under 50μm	100–200μm

Product Description

A high-efficiency roller mill for cement plants with highly efficient grinding and classification mechanisms and a concrete pedestal to meet the demands for reduced energy and resources.

Special Features

- Achieves significant energy savings through improvements to configurations of grinding roller and fine powder separator
- Offers significant reductions in product weight and vibrations during grinding process, through switching pedestal for main pressing mechanism from steel plates to concrete
- Nearly doubled its service life, thanks to superhard metal welded onto surface of grinding rollers and mill table liners

Medium-Diameter Shield Tunnel Boring Machine

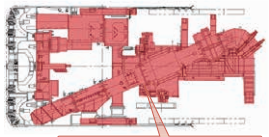
2016
Kawasaki
Green Product

Kawasaki Heavy Industries, Ltd.

Kawasaki
Powering your potential

Reduces construction period on tunnel projects and environmental impact, thanks to reuse of main components of shield tunnel boring machine and enhanced driving power efficiency

Changed joining method for main structural parts from welded fixing to bolted connection, thereby simplifying the work involved in construction, disassembly and reuse of components. Switched cutter drive system from hydraulic to electric, improving output torque by 27%.



Product Description

A shield tunnel boring machine that features a structure more conducive to component reuse through the application of a bolt-on method for the joining of main structural parts, in place of prevailing welded fixing. This machine offers improved output torque and less waste oil through a change in the cutter drive system from hydraulic to electric.

Special Features

- Switch from welded fixing to bolt-on connection for joining of main structural parts obviates need for welding and gas-cutting work at assembly, disassembly and component reuse stages
- Cutter drive output torque efficiency improved through switch from hydraulic to electric format
- Hydraulic fluid, which had been required to run cutter drives, is no longer necessary, thereby reducing the amount of hydraulic fluid used overall as well as the amount of hydraulic fluid disposed of after machine use

Kawasaki Step Grate Parallel-Flow Incinerator

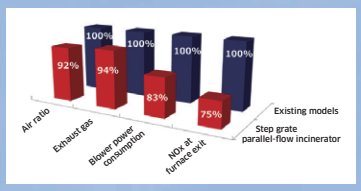
2016
Kawasaki
Green Product

Kawasaki Heavy Industries, Ltd.

Kawasaki
Powering your potential

Significant reductions in blower power consumption and NOx exhaust concentration, and low air ratio operation made possible through Kawasaki's own parallel-flow incinerator

Air ratio has been trimmed down to industry-leading level of 1.2 and exhaust NOx concentration lowered by about 25%.



Comparing environmental performance with existing models

Product Description

A parallel-flow incinerator that uses a step grate type stoker, which facilitates operation at low air ratio and significantly reduces blower power consumption and NOx exhaust concentration.

Special Features

- Lower air ratio of 1.2, reduced blower power consumption, and lighter exhaust gas processing equipment
- Minimizes NOx concentration through combustion at low air ratio with reduced air intake volume

Ninja ZX-10R (2016MY)

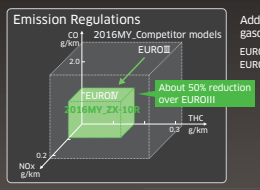
2016
Kawasaki
SUPER Green Product

Kawasaki Heavy Industries, Ltd.

Kawasaki
Powering your potential

Achieves performance that outshines competitor models with world's highest environment-oriented features

Compliant with EUROIV European emission regulations and R41-04, Europe's new noise emission regulations, the Ninja ZX-10R is one of the best in the world for fuel economy at Worldwide Motorcycle Test Cycle (WMTC) mode.



Addition of evaporative gasoline emissions regulation
EUROIII : None
EUROIV : 2.0g/test

Met EUROIV requirements ahead of other companies

Product Description

A super sports bike (base of competition model for the World Superbike Championship) incorporating Kawasaki's exclusive new technology and boasting top-level environmental performance while delivering capabilities that outshine the competition on the circuit as well as comfortable rides on public roads.

Special Features

- Delivers track capabilities that outshine the competition, thanks to application of new technology, as well as comfortable rides on public roads
- Complies with EUROIV European emission regulations due to further enhancements in fuel efficiency
- First to feature next-generation electronic control technology that controls the machine with precision

Z125/Z125PRO (2016MY)

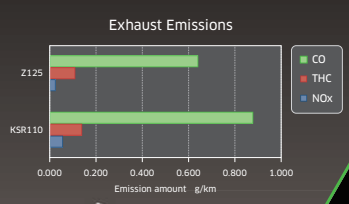
2016
Kawasaki
Green Product

Kawasaki Heavy Industries, Ltd.

Kawasaki
Powering your potential

Deliver sporty and powerful rides on top of excellent fuel performance and low exhaust emissions

The Z125/Z125PRO offer a 13% increase in output from the KSR110, a 13% improvement in WMTC fuel economy, and significant reductions in carbon monoxide, total hydrocarbons and NOx in exhaust gas.



Product Description

Successor models to the KSR110 that provide significant improvements in fuel economy and exhaust emissions, these super-naked bikes are lightweight, compact and feature low seat heights for easy maneuverability.

Special Features

- Feature air-cooled, single-cylinder engines that deliver both excellent fuel performance and power for sporty rides
- Intake system switched from carburetor to fuel injection, and exhaust system fitted with honeycomb catalyst and O_2 sensor for enhanced environmental performance

Control Valve KMX13RB

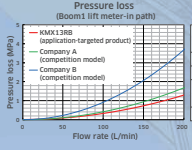
2016
Kawasaki
SUPER Green Product

Kawasaki Heavy Industries, Ltd.

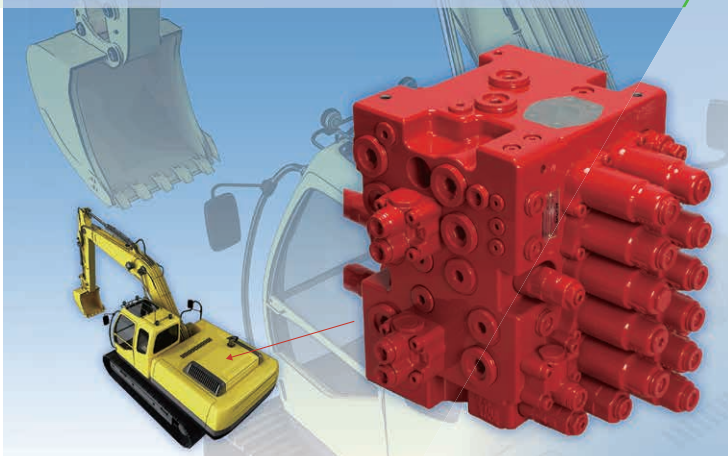
Kawasaki
Powering your potential

Control valve for hydraulic excavator boasting greater fuel economy and power density that surpasses competitors' products

The KMX13RB realizes 30% reduction in pressure loss compared with competition models, which leads to an approximate 3% improvement both in fuel economy and CO_2 emission volume. It features a 14% upgrade in power density as well.



Item	KMX13RB	Competitors' products	
		Company A	Company B
Maximum pressure	38MPa	35MPa	35.3MPa
Maximum flow	180L/min	160L/min	170L/min
External dimensions	350×437×360mm (55,062cm³)	346×423×466 (68,203cm³)	368×443×385 (62,764cm³)
Weight	120kg	154kg	120kg



Product Description

A compact, lightweight hydraulic valve that enables the actuators for hydraulic excavator to perform complex movements and thus achieves high operability and greater fuel economy.

Special Features

- Optimized casing design realizes reduced pressure loss, boosts power density, and reduces size and weight as well as improves functions
- Reduced pressure loss improves fuel economy of hydraulic excavators

Dual-Arm SCARA Robot: duAro

2016
Kawasaki
SUPER Green Product

Kawasaki Heavy Industries, Ltd.

Kawasaki
Powering your potential

Easy-to-implement, energy-saving robot that also contributes to resource savings in building a system

The duAro boasts excellent mechanical efficiency and contributes to energy-saving operations across a wide spectrum of applications. Safety features, which facilitate side-by-side work with humans, and two-arm flexibility help to reuse, simplify and reduce peripheral components, such as safety fences, tools and work jigs, thereby contributing to reduced use of resources in building a system.

Product Description

New concept dual-arm SCARA robot easily enables robots to execute tasks performed by humans.

Special Features

- Human-sized, dual-arm SCARA robot where 2 coaxial arms and single controller are integrated
- Easy installation, thanks to structure where arms are on the cart
- Safety features that allow people to work nearby
- Dual-arm, cooperative movement facilitates simplification of jigs and tools
- Easy teaching by operation through tablet and direct teaching

High-Speed Palletizing Robot CP Series

2016
Kawasaki
SUPER Green Product

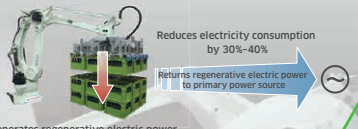
Kawasaki Heavy Industries, Ltd.

Kawasaki
Powering your potential

New-generation palletizing robots that offer both high-speed load capacity and energy savings

Robots with class-leading load capacity are first equipped as standard with power regenerative function. Realizes reductions of up to 40% in power consumption over models without power regenerative functions.

Equipped as standard with power regenerative function



Product Description

Palletizing robots that offer the high load capacity needed at logistics sites.

Special Features

- Extensive work envelope with pallet area of 1,100mm² and vertical reach of up to 2,062mm
- Three lines of palletizing robots with maximum payloads of 180kg, 300kg, and 500kg
- Powerful drive system for high-speed load capacity
- Robots are first equipped in industry as standard with power regenerative function, contributing to energy savings and lower electricity costs

Universal Controller

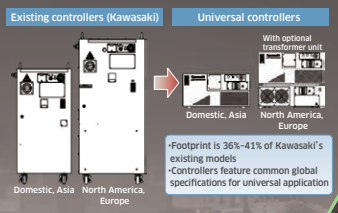
2016
Kawasaki
SUPER Green Product

Kawasaki Heavy Industries, Ltd.

Kawasaki
Powering your potential

Built to common global specifications, this high-performance controller is the smallest and lightest in the industry

It achieves dramatic reductions in electrical components of motor circuits, thanks to functional safety technology. Used as a controller for robots with payloads between 6kg and 500kg, it is the smallest and lightest controller in the industry.



- Footprint is 36%–41% of Kawasaki's existing models
- Controllers feature common global specifications for universal application

Product Description

A universal controller is built to common global specifications and integrates the extensive features of Kawasaki-brand robots into the smallest and lightest units in the industry

Special Features

- Used as a controller for robots with payload ranging from 6kg to 500kg, it is the smallest and lightest controller in the industry and contributes to space-saving operations
- Universal specifications that meet safety standards in all countries
- Allows voltage differences, using optional transformer unit
- E03 controller for palletizing robots boasts first built-in power regenerative function in the industry

TOPICS

Approaches by the Motorcycle & Engine Company

Reducing Exhaust Emissions

In fiscal 2016, we began sales of ZX-10R, a model that exemplifies our efforts to achieve cleaner exhaust gas from motorcycles on a world-caliber level.

The fully electronic throttle actuation system enables the ECU to control the volume of both fuel (via fuel injectors) and air (via throttle values) delivered to the engine, continually generating ideal fuel injection and throttle valve position. This not only results in smooth, natural engine response and ideal engine output but also enhances fuel efficiency and reduces emissions.

Ninja ZX-10R (overseas model)

Promoting the 3Rs

Since October 2004, we have operated an independent motorcycle recycling system in cooperation with three other motorcycle manufacturers and 12 importers in Japan. In fiscal 2016, we achieved a recycling rate of 96.7%. Since October 2011, the user burden of recycling costs has become completely free of charge.

For new-model motorcycles, we emphasize environmentally conscious designs highlighting reduced materials and more recycling, right from the development phase. We conduct preliminary evaluations of efforts related to the 3Rs—reduce, reuse and recycle—before commencing design, prototyping and mass production phases. In particular, we seek to increase recyclability through greater use of materials that are easy to recycle and we have achieved a potential recycling rate exceeding 90% on every model, with most models exceeding 95%. This potential recycling rate was calculated based on the Guidelines for Definition and Calculation Method on the Recyclability Rate for New Vehicles (1998 Japan Automobile Manufacturers Association).

Reducing and Eliminating Environmental Substances of Concern

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

For general-purpose engines and JET SKI watercraft, there are no Japanese regulations such as the JAMA voluntary reduction targets, but we are making elimination and reduction efforts that follow those applied to motorcycles, and we had achieved voluntary reduction targets for lead, mercury and cadmium by fiscal 2008. Hexavalent chromium had been contained to a very small amount, but we completed its elimination in fiscal 2009.

Environmental Data

Kawasaki's Environmental Data (Fiscal 2016) 33

Environmental Data by Business Site (Fiscal 2016) 34

- Gifu Works
- Nagoya Works 1
- Kobe Works
- Hyogo Works
- Nishi-Kobe Works
- Seishin Works
- Akashi Works
- Kakogawa Works
- Harima Works
- Sakaide Works

Environmental Data of Subsidiaries (Fiscal 2016) 36

Domestic/Overseas

Kawasaki's Environmental Data (Fiscal 2016)

			Unit	Whole group	Change from fiscal 2015
INPUT		Total energy consumption (crude oil conversion)	kl	154,877	102%
		Purchased electricity	MWh	370,750	101%
		Fuel	TJ	2,392	104%
		Renewable energy	MWh	1,666	95%
		Materials	10,000 t	9	100%
		Water	1,000 m^3	5,903	98%
OUTPUT	Air	CO_2 emissions volume from energy sources	t	324,954	102%
		SOx	t	16	164%
		NOx	t	309	176%
		Soot and dust	t	7	93%
		PRTR regulated substance	t	904	107%
	Water	Wastewater	1,000 m^3	3,545	98%
		COD	t	9	79%
		Nitrogen	t	21	80%
		Phosphorus	t	0.2	83%
		PRTR regulated substance	t	1	100%
	Waste	Total emitted	t	51,439	102%
		Recycled	t	49,976	101%
		Others	t	1,463	119%
		PRTR regulated substance in above total	t	278	106%
	Others	CO_2 emissions during transport	t	3,769	91%

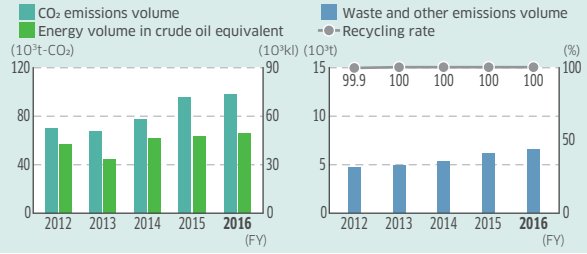
Environmental Data by Business Site (Fiscal 2016) 1/2

			Unit	Gifu Works	Nagoya Works 1	Kobe Works	Hyogo Works	Nishi-Kobe Works
INPUT		Total energy consumption (crude oil conversion)	kl	35,632	13,808	14,095	5,368	14,528
		Purchased electricity	MWh	71,626	53,863	32,754	17,094	52,523
		Fuel	TJ	682	12	228	40	52
		Renewable energy	MWh	0	879	26	26	519
		Water	1,000 m^3	3,944	68	307	78	178
OUTPUT	Air	CO_2 emissions volume from energy sources	t	72,315	27,346	29,849	11,137	30,140
		SOx	t	3	0	11	0	0
		NOx	t	60	1	170	0.7	0.5
		Soot and dust	t	0.6	Under 0.1	4	Under 0.1	Under 0.1
		PRTR regulated substance	t	129	1	128	101	29
	Water	Wastewater	1,000 m^3	2,154	18	144	78	59
		COD	t	7	0.2	Under 0.1	Under 0.1	0.2
		Nitrogen	t	19	0.1	Under 0.1	Under 0.1	0.7
		Phosphorus	t	Under 0.1	Under 0.1	Under 0.1	Under 0.1	Under 0.1
		PRTR regulated substance	t	1	0	0	0	0
	Waste	Total emitted	t	5,556	1,061	10,492	4,912	3,610
		Recycled	t	5,556	1,061	10,492	4,912	3,610
		Other (incineration/reclamation)	t	0	0	0	0	0
		PRTR regulated substance in above total	t	76	0	32	53	34

Gifu Works and Nagoya Works 1

Location 1, Kawasaki-cho, Kakamigahara, Gifu 504-8710, Japan

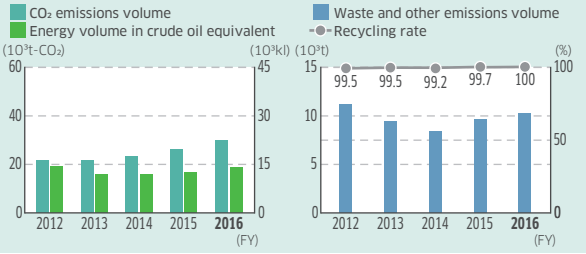
Main products Transport airplanes, helicopters, spacecraft, component parts for airplanes



Kobe Works

Location 1-1, Higashikawasaki-cho 3-chome, Chuo-ku, Kobe, Hyogo 650-8670, Japan

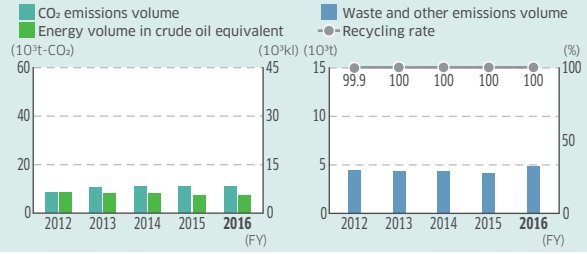
Main products Ships & maritime application equipment, steam turbines for ground and maritime applications, diesel engines



Hyogo Works

Location 1-18, Wadayama-dori 2-chome, Hyogo-ku, Kobe, Hyogo 652-0884, Japan

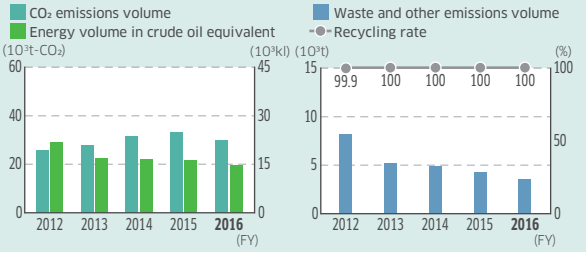
Main products Rolling stock, automated guideway transit systems, platform screen doors



Nishi-Kobe Works

Location 234, Matsumoto, Hazetani-cho, Nishi-ku, Kobe, Hyogo 651-2239, Japan

Main products Various hydraulic systems for industrial use, marine machinery, precision machinery and equipment



Note: CO_2 emissions are impacted by the electricity emission factor.

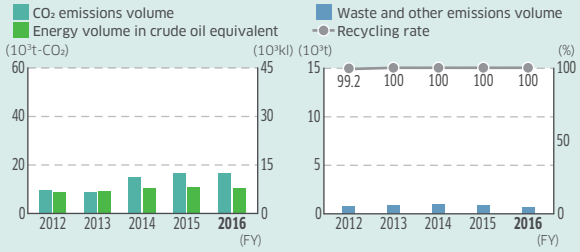
Environmental Data by Business Site (Fiscal 2016) 2/2

			Unit	Seishin Works	Akashi Works	Kakogawa Works	Harima Works	Sakaide Works
INPUT		Total energy consumption (crude oil conversion)	kl	7,988	44,567	3,651	4,382	9,599
		Purchased electricity	MWh	25,136	56,664	8,043	14,008	35,103
		Fuel	TJ	66	1,176	63	32	32
		Renewable energy	MWh	0	150	0	5	61
		Water	1,000 m^3	81	833	12	79	320
OUTPUT	Air	CO_2 emissions volume from energy sources	t	16,505	92,878	7,442	8,753	26,117
		SOx	t	0	0	0	0	0
		NOx	t	1	15	0	0.2	Under 0.1
		Soot and dust	t	Under 0.1	1.7	0	Under 0.1	Under 0.1
		PRTR regulated substance	t	7	93	0	37	379
	Water	Wastewater	1,000 m^3	49	527	5	42	470
		COD	t	0.6	0.4	Under 0.1	Under 0.1	0.4
		Nitrogen	t	0.5	0.3	Under 0.1	Under 0.1	0.5
		Phosphorus	t	Under 0.1	Under 0.1	Under 0.1	Under 0.1	Under 0.1
		PRTR regulated substance	t	0	Under 0.1	0	0	0
	Waste	Total emitted	t	732	8,326	1,446	3,944	11,360
		Recycled	t	732	8,274	1,446	3,944	9,949
		Other (incineration/reclamation)	t	0	52	0	0	1,411
		PRTR regulated substance in above total	t	11	57	0	2	13

Seishin Works

Location 8-1, Takatsukadai 2-chome, Nishi-ku, Kobe, Hyogo 651-2271, Japan

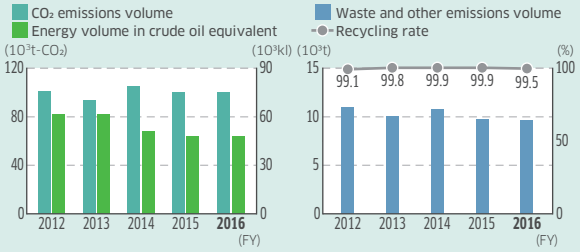
Main products Component parts for jet engines and gas turbines



Akashi Works and Kakogawa Works

Location 1-1, Kawasaki-cho, Akashi, Hyogo 673-8666, Japan

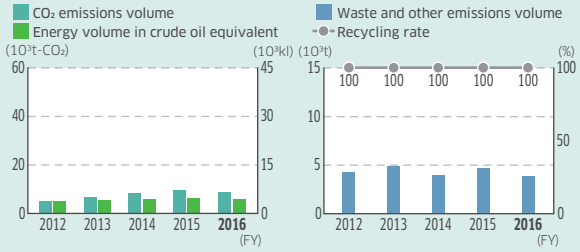
Main products Motorcycles, general-purpose gasoline engines, industrial robots, jet engines, industrial gas turbines



Harima Works

Location 8, Niijima, Harima-cho, Kako-gun, Hyogo 675-0155, Japan

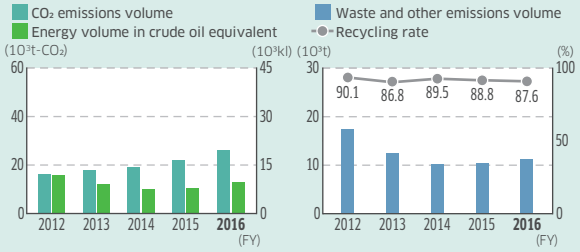
Main products Industrial & environmental plants, boilers, construction machinery, rolling stock



Sakaide Works

Location 1, Kawasaki-cho, Sakaide, Kagawa 762-8507, Japan

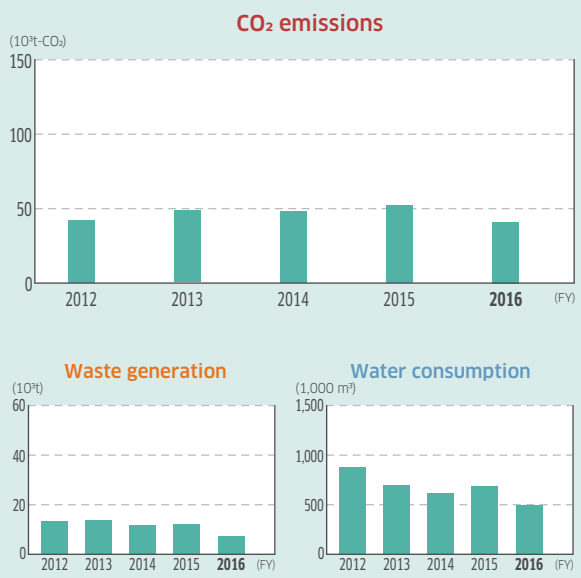
Main products Ships & maritime application equipment (LNG carriers, LPG carriers, container ships, etc.)



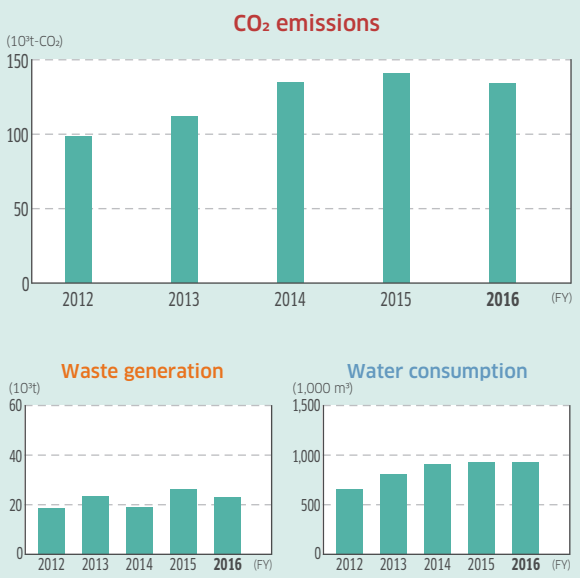
Note: CO_2 emissions are impacted by the electricity emission factor.

Environmental Data of Subsidiaries (Fiscal 2016)

Total for Domestic Subsidiaries

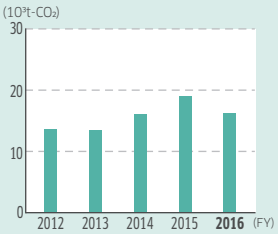


Total for Overseas Subsidiaries

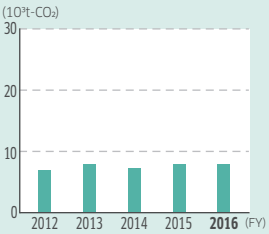


CO₂ Emissions of Domestic Major Subsidiaries

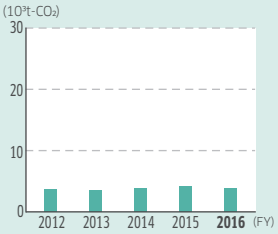
NIPPI Corporation



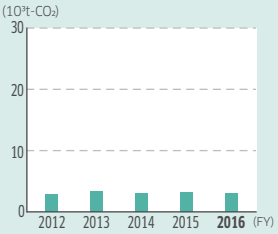
EarthTechnica Co., Ltd.



Technica Corp.

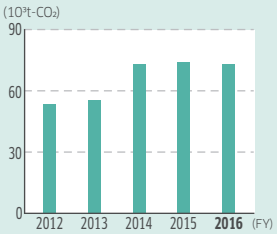


Kawasaki Thermal Engineering Co., Ltd.

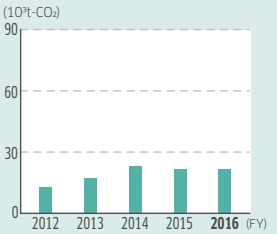


CO₂ Emissions of Overseas Major Subsidiaries

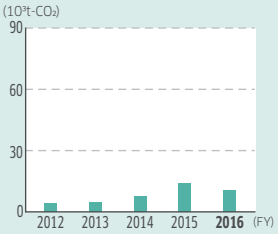
Kawasaki Motors Manufacturing Corp., U.S.A.



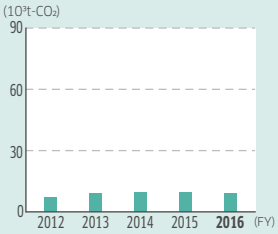
Kawasaki Motors Enterprise (Thailand) Co., Ltd.



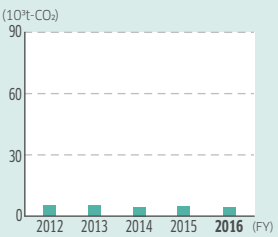
PT. Kawasaki Motor Indonesia



KHITKAN Co., Ltd.



Kawasaki Precision Machinery (UK) Ltd.



Note: The CO_2 emissions coefficients used in graphs are, in principle, those indicated below.

- Ministry of the Environment website: List of emission factors for electric power providers, published by Japan's Ministry of the Environment (Used in submission for 2016) http://ghg-santeikohyo.env.go.jp/calc (Japanese only)
- For CO_2 emissions volume through overseas electricity consumption, the figures published by the Greenhouse Gas Protocol are used.
- Subsidiary environmental data collection targets are, in principle, the companies with EMS that are listed on page 19.

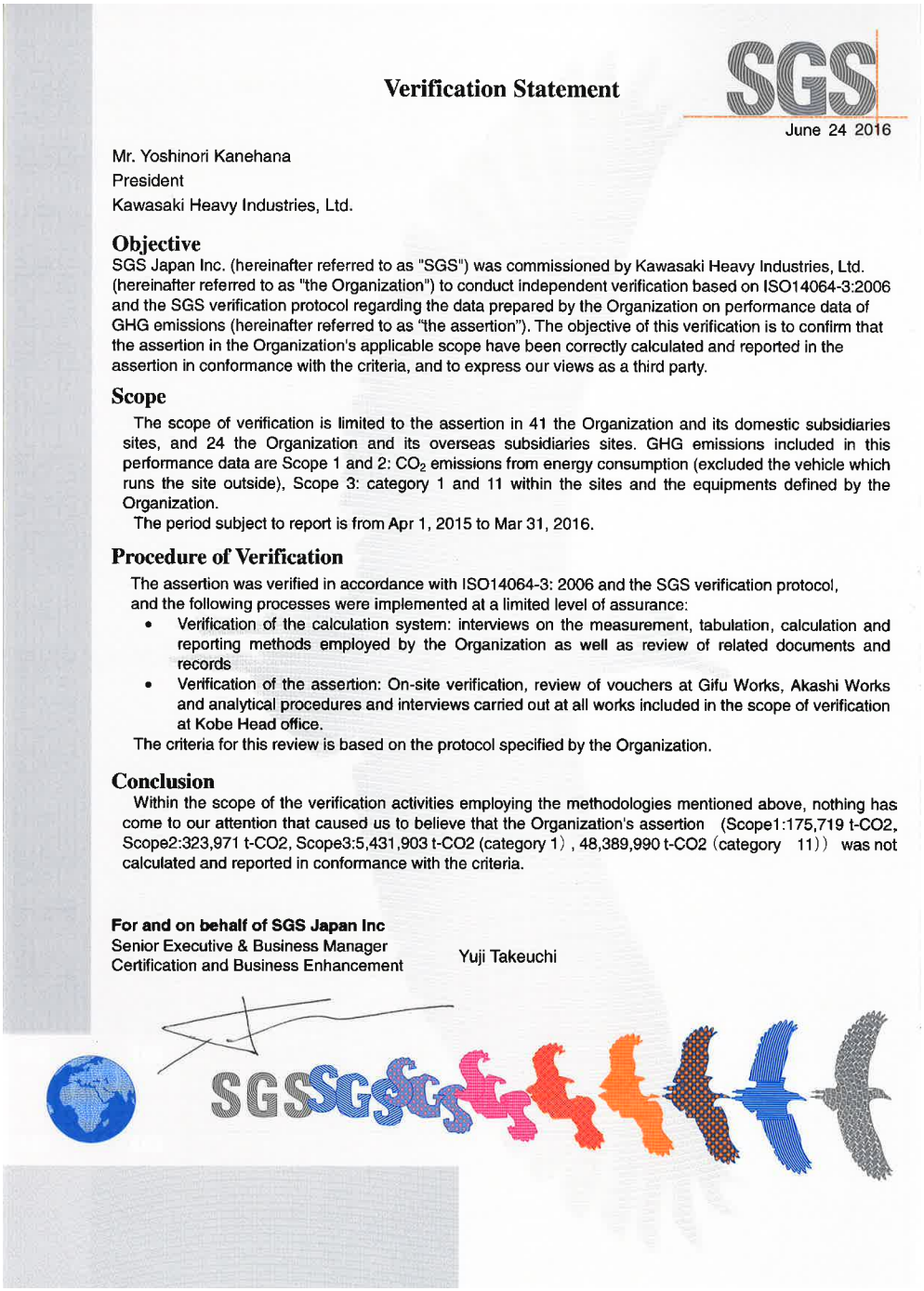
Third-Party Verification of Greenhouse Gas Emissions

For the purpose of ensuring credibility, the Kawasaki Group received a third-party verification from SGS Japan Inc. on greenhouse gas emissions of the Group.

Scope of Verification

Greenhouse gas emissions associated with business activities in fiscal 2016

- Scope 1 and 2 greenhouse gas emissions associated with business activities at 41 domestic and 24 overseas sites in the Kawasaki Group
- Category 1 (purchased products and services) and Category 11 (use of sold products), which account for a large percentage of Kawasaki's Scope 3 greenhouse gas emissions



Verification Statement

SGS

June 24 2016

Mr. Yoshinori Kanehana
President
Kawasaki Heavy Industries, Ltd.

Objective

SGS Japan Inc. (hereinafter referred to as "SGS") was commissioned by Kawasaki Heavy Industries, Ltd. (hereinafter referred to as "the Organization") to conduct independent verification based on ISO14064-3:2006 and the SGS verification protocol regarding the data prepared by the Organization on performance data of GHG emissions (hereinafter referred to as "the assertion"). The objective of this verification is to confirm that the assertion in the Organization's applicable scope have been correctly calculated and reported in the assertion in conformance with the criteria, and to express our views as a third party.

Scope

The scope of verification is limited to the assertion in 41 the Organization and its domestic subsidiaries sites, and 24 the Organization and its overseas subsidiaries sites. GHG emissions included in this performance data are Scope 1 and 2: CO_2 emissions from energy consumption (excluded the vehicle which runs the site outside), Scope 3: category 1 and 11 within the sites and the equipments defined by the Organization.

The period subject to report is from Apr 1, 2015 to Mar 31, 2016.

Procedure of Verification

The assertion was verified in accordance with ISO14064-3: 2006 and the SGS verification protocol, and the following processes were implemented at a limited level of assurance:

- Verification of the calculation system: interviews on the measurement, tabulation, calculation and reporting methods employed by the Organization as well as review of related documents and records
- Verification of the assertion: On-site verification, review of vouchers at Gifu Works, Akashi Works and analytical procedures and interviews carried out at all works included in the scope of verification at Kobe Head office.

The criteria for this review is based on the protocol specified by the Organization.

Conclusion

Within the scope of the verification activities employing the methodologies mentioned above, nothing has come to our attention that caused us to believe that the Organization's assertion (Scope1:175,719 t-CO2, Scope2:323,971 t-CO2, Scope3:5,431,903 t-CO2 (category 1), 48,389,990 t-CO2 (category 11)) was not calculated and reported in conformance with the criteria.

For and on behalf of SGS Japan Inc
Senior Executive & Business Manager
Certification and Business Enhancement
Yuji Takeuchi