Kawasaki
Powering your potential

Kawasaki Environmental Report 2018

Contents

Editorial Notes

Period

The report covers fiscal 2018 (from April 1, 2017 to March 31, 2018). 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 25) that are subject to environmental management criteria.

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Edited and issued by: General Administration Division Environmental Affairs Department

Editorial responsibility: Senior Manager, Environmental Affairs Department

Guidelines

In preparing the report, the editorial office referred to the Environmental Reporting Guidelines (2012 Edition) issued by the Ministry of the Environment.

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)

The Kawasaki Group formulated the Kawasaki Global Environmental Vision 2050 last year, which sets out "CO_2 FREE," "Waste FREE" and "Harm FREE" as its visions. To achieve these three visions, we are focusing efforts on environmental management activities. These include zero CO_2 emissions in our business activities, providing products and services that greatly curb CO_2 emissions, zero waste emissions in our business activities, thoroughly enforcing conservation and recycling of water resources, and zero harmful chemical substances emissions in our business activities, developing business with high regard for biodiversity.

As we come within sight of the target year of the Environmental Vision 2020, formulated in 2010, we are pursuing 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–with the aim of heightening awareness as an environmentally friendly brand as a result.

Kawasaki Environmental Report 2018 highlights the results of our environmental management activities undertaken in fiscal 2018, the second year of our three-year Ninth Environmental Management Activities Plan, which was formulated based on the Environmental Vision 2020.

In fiscal 2018, we reduced resource and energy costs by 5.9% and CO_2 emissions (per unit of sales) by 3%, in line with our targets.

To achieve our targets, we carried out aggressive energy-saving activities including elimination of waste and irregularities through our energy visualization system at manufacturing sites, and improvement of facilities operation and production processes.

We will consider raising the ratio of renewable energy use (solar power generation) in our electricity supply, in a future move to reduce CO_2 emissions.

Furthermore, the Kawasaki-brand Green Product program for assessing and registering products with exceptional environmental performance is now in its fifth year, and has acquired greater recognition throughout Kawasaki. The 50 products registered as of 2018 are contributing to reducing environmental impact around the world.

The Kawasaki Group will actively promote the integration of business management and environmental management, in response to the growing momentum of global measures that address global warming, such as the COP21 Paris Agreement. We will also cooperate with national CO_2 emissions reduction targets and ensure appropriate disclosure and reliability of environmental information.

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.

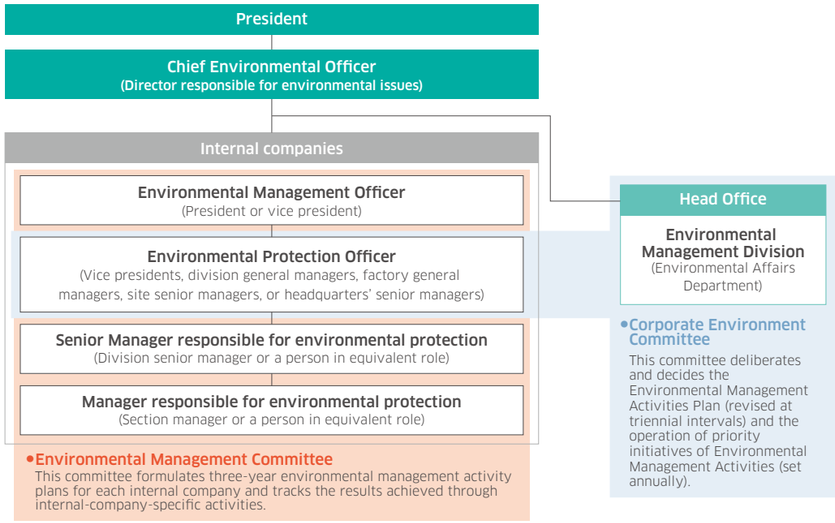


Figure 1: Environmental Management Organization

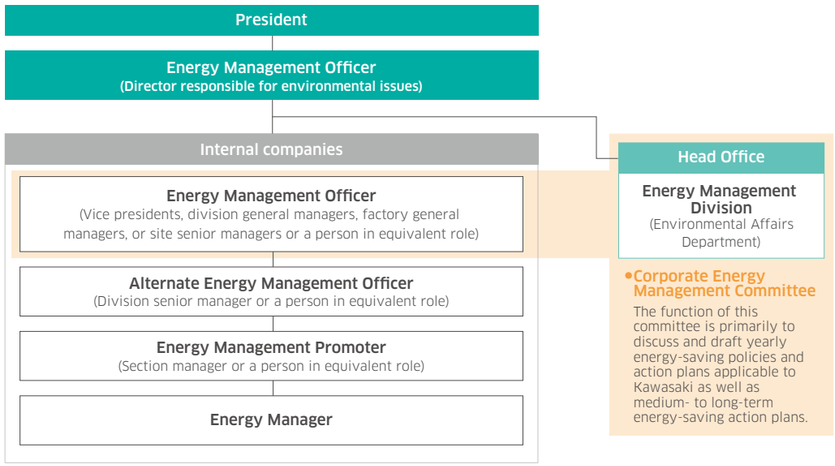


Figure 2: Energy Management Organization

With a View to 2050

History of Environmental Management, from the Environmental Vision 2020 to the Kawasaki Global Environmental Vision 2050

Kawasaki formulated the First Environmental Management Activities Plan in 1994, and the entire Company began work on environmental conservation activities. Since then, we have promoted various environmental initiatives including the establishment of the Environmental Charter in 1999 to demonstrate our commitment to the environment both inside and outside the Company, and as a long-term vision, formulating the Environmental Vision 2010 in 2003 and the Environmental Vision 2020 in 2010.

In fiscal 2018, with three years left until 2020, we formulated the new Kawasaki Global Environmental Vision 2050 with the aim of realizing lofty visions for 2050, while basically maintaining the focal points of Environmental Vision 2020. Having adopted the CO_2 emissions reduction targets set by the Japanese government for 2030 as our medium-term targets, we will tackle our major goals of achieving "CO_2 FREE," "Waste FREE" and "Harm FREE." We aim to achieve these goals through implementation of our Environmental Management Activities Plan, which is formulated every three years based on a comprehensive review of changes in social conditions and environmental technologies.

The embodiment of the Group's environmental management is based on the three visions of "CO_2 FREE," "Waste FREE," and "Harm FREE," and the Group will contribute to controlling global warming, promoting a recycling-oriented society and protecting biodiversity toward the year 2050.

Waste FREE CO_2 FREE Harm FREE

2050 Kawasaki Challenge!

*Activity Mark: Designed with the three challenges, imagining a "letter to the future."

CO_2 FREE
- Aim for zero CO_2 emissions in business activities
- Provide products and services that greatly curb CO_2 emissions

Waste FREE
- Aim for zero waste emissions in business activities
- Thoroughly enforce conservation and recycling of water resources

Harm FREE
- Aim for zero harmful chemical substances emissions in business activities
- Develop business with respect for biodiversity

Kawasaki Global Environmental Vision 2050 (Established in 2017)
- CO_2 FREE
- Waste FREE
- Harm FREE

2030 Targets
- Reduce CO_2 emissions by 26% (Compared to fiscal 2014 level)

Environmental Vision 2020 (Established in 2010)
- Realization of a low-carbon society
- Realization of a recycling-oriented society
- Realization of a society coexisting with nature
- Establishment of environmental management systems

Environmental Vision 2010 (Established in 2003)
- Environmental philosophy
- Environmental management
- Environmentally conscious products
- Environmentally conscious manufacturing
- Environmentally conscious communication

Environmental Charter [Established in 1999 (Revised in 2010)]

1994 First to Ninth Environmental Management Activities Plans

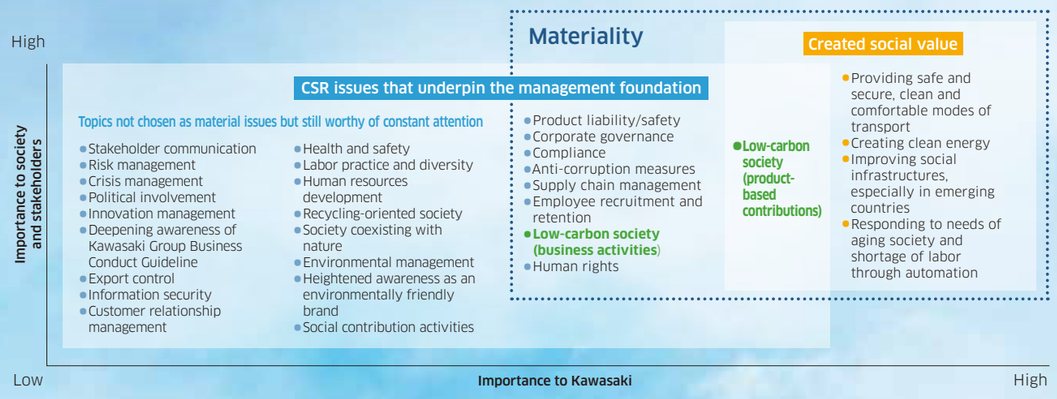
1990	2000	2010	2020	2030	2040	2050
ISO14001 issued (1996)	Stockholm Convention adopted (2001) Principles for Responsible Investment (PRI) (2006) COP3 Kyoto Protocol adopted (1997)	COP10 Nagoya Protocol adopted (2010)	COP21 Paris Agreement adopted (2015) Sustainable Development Goals adopted (2015) Corporate Governance Code (2015) Japanese Version of the Stewardship Code (2014)	**Japanese Government Targets** 2030 Reduce CO_2 emissions by 26% (Compared to fiscal 2014 level)		**Japanese Government Goals** 2050 Reduce CO_2 emissions by 80% (Compared to fiscal 2014 level)

Identifying Materiality

We reconfirmed the social issues that should be addressed by the Kawasaki Group in fiscal 2018, and determined "social value that is derived through business activities" to be our top priority. Furthermore, we identified and determined "CSR issues that underpin the management foundation" (CSR materiality) to be issues that will help achieve those initiatives.

Among these CSR issues, we positioned the reduction of greenhouse gas (CO_2) emissions, seen as a major cause of climate change, as our top priority. We also set the realization of a low-carbon society through product-based contributions ("low-carbon society (product-based contributions)") and the realization of a low-carbon society through business activities ("low-carbon society (business activities)") as our environmental materiality.

Materiality matrix of items identified



*Details on the process used to identify materiality are introduced on our website. https://global.kawasaki.com/en/corp/sustainability/materiality.html

Approach to SDGs

We established specific targets by examining the correlation between the "social value that is derived through business activities," our priority which was decided when we identified our materiality, and the Sustainable Development Goals (SDGs) set by the United Nations as international targets for the period from 2016 to 2030.

We will contribute to the SDGs, including "7. Affordable and Clean Energy" and "13. Climate Action," by achieving a "low-carbon society (business activities)" and "low-carbon society (product-based contributions)."

- Providing safe and secure, clean, comfortable movement of people and transportation of goods by land, sea and air
- Creating clean energy
- Improving social infrastructure, especially in emerging countries
- Responding to needs of aging society and shortage of labor through automation

Kawasaki will contribute to fulfilling the SDGs

utilizing the capabilities of all our business segments.

Promotion of Environmental Management Activities Plan

This report—Kawasaki Environmental Report 2018—summarizes the targets and results for fiscal 2018, the middle year of our Ninth Environmental Management Activities Plan.

The Kawasaki Group will take on the challenge of achieving Kawasaki Global Environmental Vision 2050. We will also pursue even greater integration of environmental management and business management with the aim of realizing the Group Mission of "Kawasaki, working as one for the good of the planet."

Summary of Environmental Activities in Fiscal 2018

Summary of Fiscal 2018 Results

Basic Policy (Ninth Environmental Management Activities Plan)

To realize the Environmental Vision 2020, we are pursuing 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—with the aim of heightening awareness as an environmentally friendly brand as a result.

Furthermore, we will actively promote the integration of business management and environmental management, in response to the growing momentum of global measures that address global warming, such as the COP21 Paris Agreement. We will also cooperate with national CO_2 emissions reduction targets and ensure appropriate disclosure and reliability of environmental information for institutional investors, corporate assessment organizations and other performance-tracking groups.

	Key Strategies	Ninth Environmental Management Activities Plan (FY2017–FY2019)	Fiscal 2018 Targets	Fiscal 2018 Results	Page Number
Realization of a low-carbon society	CO_2 and energy cost reduction	**1. Reduce resource and energy costs, mainly through wider application of energy visualization system**			
		Target: Reduce annual resource and energy costs by at least 5%	Reduce annual resource and energy costs by at least 5%	Reduction rate of 5.9% (target achieved)	
		2. Reduce CO_2 emissions			
		Target: Reduce CO_2 emissions per unit of sales by at least 3% year on year	Reduce CO_2 emissions per unit of sales*1 by 3% year on year (previous fiscal year: 28.6t-CO_2/100 million yen)	Reduction rate of 3.0% (target achieved)	P.11
		3. Reduce CO_2 emissions through product-based contributions			
		Target: Identify CO_2 emission reduction effect through product-based contributions and disclose to public	Disclose CO_2 emission reduction effect through product-based contributions	Disclosed in the Environmental Report (this report) and the Kawasaki Report (integrated report) (target achieved)	
Realization of a recycling-oriented society	Promotion of the 3Rs	**1. Reduce total waste generation and maintain zero emission status**			
		Target: Reduce total waste generation per unit of sales by at least 1% from level achieved under the Eighth Plan, and push final disposal ratio below 1%	Reduce total waste generation per unit of sales*1 by at least 1% from the average achieved under the Eighth Plan (4.48t/100 million yen), and push final disposal (landfill) ratio below 1%	Reduction rate of 5.0% (target achieved) Landfill ratio of 0.2% (target achieved)	P.16
		2. Promote reuse and recycling			
		Target: Boost recycling rate above 98%	Boost recycling rate above 98%	Recycling rate of 97.6% (target not achieved)	
		3. Promote PCB treatment			
		Target: Systematically treat high- and low-concentration PCB waste	Systematically treat high- and low-concentration PCB waste	The processing of high- and low-concentration PCB waste progressed to 87%, on a disposal cost basis (target achieved)	
Realization of a society coexisting with nature	Reduction of environmental load/promotion of resource conservation	**1. Reduce chemical substances**			
		Target: Reduce major VOCs*2 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	Reduce major VOCs per unit of sales*1 by at least 1% from the average achieved under the Eighth Plan (82.0kg/100 million yen) Cut dichloromethane by at least 1% year on year (previous fiscal year: 47t) Reduce hexavalent chromium to zero, in principle, by fiscal 2021	Major VOCs reduced by 15% (target achieved) Dichloromethane reduced by 32% (target achieved) Reduced to zero, excluding some special manufacturing processes (target achieved)	P.18
		2. Conserve water			
		Target: 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	Reduce consumption of water per unit of sales*1 by at least 1% year on year (previous fiscal year: 0.474 thousand m^3/100 million yen)	Reduction rate of -7.0% (target not achieved)	
		3. Conduct forest conservation activities			
		Target: Carry out forest conservation activities at least twice a year	Carry out forest conservation activities at least twice a year	Carried out four times (target achieved)	
Establishment of environmental management systems	Enhancement of the Kawasaki Group environmental management system	**1. Reinforce environmental management capabilities and lower environmental risk**			
		Target: Certified business sites to complete transition to ISO 14001:2015 Visit domestic and overseas production sites to better pinpoint status of environmental management	Promote the transition to ISO 14001:2015 at certified business sites Pinpoint status of environmental management at domestic and overseas production sites	Nine business sites acquired certification (target achieved) Conducted various opinion exchanges in fiscal 2018 related to setting Group-wide targets with overseas subsidiaries (KMT) with high energy consumption and pinpointed status of EMS operation (target achieved)	P.23
Heightened environmental image	Heightened awareness as an environmentally friendly brand	**1. Leverage Kawasaki Green Product Promotion Activity**			
		Target: Register Kawasaki-brand Green Products every year and release data to public	Register Kawasaki-brand Green Products and release data to public	Disclosed on the website and in the Environmental Report (this report) and the Kawasaki Report (integrated report) (target achieved)	P.27
		2. Enhance image through external evaluations and rankings			
		Target: Announce results of third-party verification, improve evaluations from external organizations such as CDP, and sustain placement in Dow Jones Sustainability Index	Receive third-party verification on environmental data Improve evaluations under such schemes as CDP, and sustain placement in Dow Jones Sustainability Index	Received third-party verification on greenhouse gas emissions (target achieved) Received a "B" rating (management level) in CDP evaluation, and sustained placement in Dow Jones Sustainability Index (target achieved)	

*1 Net sales of Kawasaki used as the denominator in "per unit of sales."
*2 Main VOCs: For the Kawasaki Group, the major VOCs are toluene, xylene and ethylbenzene. 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

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 or 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

- **Heightened awareness as an environmentally friendly brand**
  Information distributed externally regarding Kawasaki-brand Green Products
  Environmental information disclosed

Group Mission

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

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

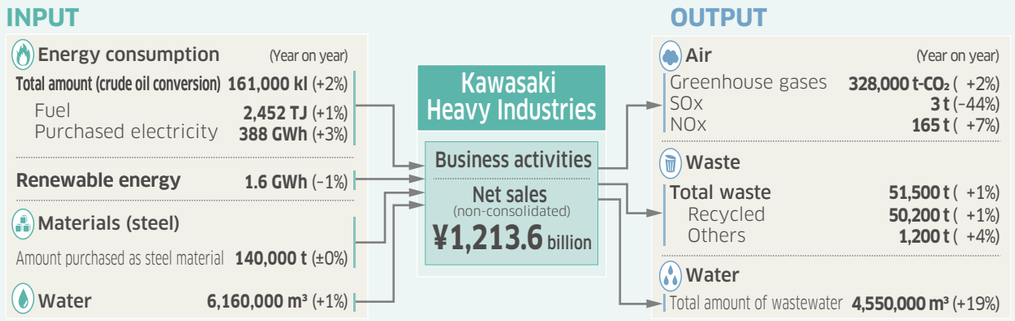
Impact of Business Activities on the Environment during Fiscal 2018

Kawasaki has drawn up a summary of the impact of our business activities on the environment during fiscal 2018.

Compared with fiscal 2017, energy consumption and water, which are inputs, both increased. In terms of outputs, air pollution (excluding SOx), waste, and the amount of wastewater all increased.

Furthermore, compared with the average for fiscal 2014 to fiscal 2016, which is the period of the Eighth Environmental Management Activities Plan, although inputs increased, there was a reduction in the output of SOx emissions.

Impact of Business Activities on the Environment during Fiscal 2018



Realization of a Low-Carbon Society

Various global initiatives aimed at controlling global warming have started to come into force, including the taking of effect of the Paris Agreement set at the United Nations Framework Convention on Climate Change. Kawasaki is contributing to the prevention of global warming through its products and manufacturing that use energy without waste.

In order to achieve improvements in the efficiency of manufacturing at plants in Japan, we are introducing the energy visualization system and working toward the early discovery of waste, and are also promoting the use of renewable energy. In addition, we are contributing to lower CO_2 emissions during product use, through delivery of highly energy efficient products worldwide.

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**
→ Reduce annual resource and energy costs by at least 5%

❷ **Reduce CO_2 emissions**
→ Reduce 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

Energy-Saving Promotion Activities

The Company established an energy-saving promotion structure for each business segment and makes various energy-conservation improvements in an effort to reduce CO_2 emissions. These include a shift of pumps and fans to inverter types, raising the efficiency of lighting, air conditioning, production and other equipment, and making improvements in the production process.

One example is the improvement of the process of removing resin stuck inside a gear pump before the repair procedure (Nishi-Kobe Works, Precision Machinery Business Division).

Before the improvement, high-temperature incineration of resin in the furnace for many hours turned the resin into ashes, and then power tools and other equipment were used to polish them. After the improvement, a method was established to use solvents that are effective in removing stuck resin by immersing and cleaning. As a result of this, energy that had been used for heating and power tools was reduced, leading to a reduction of CO_2 emissions.

As part of our energy-saving activities, we started the Energy-saving Awards Program from fiscal 2018 with an eye to all staff members' participation in energy-saving activities.

A characteristic of the Company's Energy-saving Awards Program is the two-tier awards consisting of the Intra-Division Award, which recognizes activities in each operating division of the Company, and the Company-wide Award, which is decided based on company-wide voting on each improvement recommended per division. As such, this program recognizes various energy-saving initiatives ranging from small improvements made by individuals to major ones by teams and plants.

The grand award of the Company-wide Award for fiscal 2018 was given to "an improvement that 'prevented excess contract power' through implementation of 'measures to reduce peak power consumption' by 'full staff participation' (Gifu Works/Nagoya Works, Aerospace Systems Company)." The winner was found to be outstanding in its improvement effect, return on investment, potential for horizontal development, and creativity and originality.

This improvement prevented excess power demand. It involved concerted efforts by plants through the implementation of the following four steps to curb about 4,000 kW of power in times of tight power supply-demand situations during summer.

1. Spreading out in advance the operation schedule for facilities that consume large amounts of power.
2. Staggering operation times, coordinating by telephone on that day, in cases where overlapping operations occur.
3. In times of tight power demand even after those arrangements, increasing the output of cogeneration power-generation facilities or stopping several air conditioners in rotation.
4. In times of further tightness of power demand, saving energy through full staff participation by issuing an emergency-power conservation announcement in the plant in two stages.

Figure 3: Before improvement: Heating incineration of resin

Figure 4: After improvement: Removal of resin using solvents

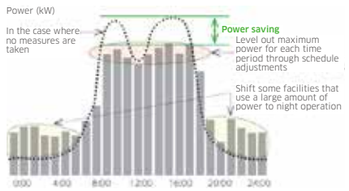


Figure 5: Change in Production Facility Power over Time (1 day)

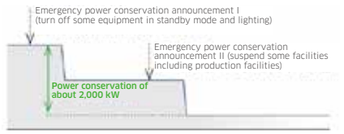


Figure 6: Energy-saving Effect of Full Staff Participation by Emergency-power Conservation Announcements

Reducing CO_2 Emissions from Production Activities

Kawasaki set a goal to reduce CO_2 emissions from production activities by 3% year on year, on a per unit of sales basis, and is pursuing activities to cut energy consumption.

In fiscal 2018, despite improvement activities carried out at production sites, CO_2 emissions increased by 7,000 tons due to an increase in energy consumption resulting mainly from the launch of new facilities.

As a result, CO_2 emissions increased by 2.0% year on year to 328,000 tons.

On a per unit of sales basis, using net sales as the denominator with the CO_2 emission factor fixed at that of fiscal 2014, emissions decreased by 3% year on year to 27.7 tons/100 million yen, achieving the target of 3%.

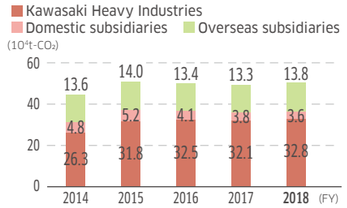


Figure 7: CO_2 Emissions from Production Activities

Notes: 1. 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.
2. For overseas sites, the CO_2 emission factors are based on figures published by the Greenhouse Gas Protocol.

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 its own operations but also those of its supply chain. The standards for calculating emissions along our supply chain include the Corporate Value Chain (Scope 3) Accounting and Reporting Standard, established by the Greenhouse Gas Protocol as an internationally accepted greenhouse gas (GHG) calculation and reporting guideline. 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 1: Fiscal 2018—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 Kawasaki	32.6

Table 2: Fiscal 2018—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	603.3 (6.5%)
②	Capital goods	Emissions from construction and production of Kawasaki's capital goods	27.6 (0.3%)
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	3.9 (0.0%)
④	Transportation and distribution (upstream)	Emissions associated with logistics of raw materials, parts, purchased goods and sales-related materials up to delivery to Kawasaki	0.8 (0.0%)
⑤	Waste generated in operations	Emissions associated with transportation and processing of waste generated by Kawasaki	1.9 (0.0%)
⑥	Business travel	Emissions associated with business travel by employees	1.4 (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*1
⑪	Use of sold products	Emissions associated with use of products by consumers and companies	8,679.6 (93.0%)
⑫	Disposal of sold products	Emissions associated with transportation and treatment of products upon disposal by consumers and companies	Excluded*1
⑬	Leased assets (downstream)	Emissions associated with operation of assets leased to other companies	Excluded*2
⑭	Franchises	Emissions by franchisees	Excluded*2
⑮	Investments	Emissions related to operation of investments	17.4 (0.2%)

*1 Excluded from calculation target because Kawasaki is unable to confirm reference data at this time.
*2 Excluded from calculation target because it is outside of the scope of our business.

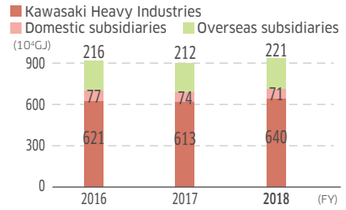


Figure 8: Energy Consumption from Production Activities

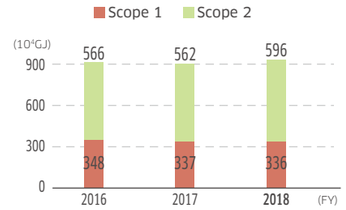


Figure 9: Energy Consumption from Production Activities (by Scope)

Reduction of CO_2 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 its supply chain (Scope 3, Category 4 "Transportation and distribution (upstream)"), to realize continuous reduction in CO_2 emissions.

In fiscal 2018, CO_2 emissions decreased by 5% year on year, to approximately 4,000 tons (with energy consumption at approximately 60,000 GJ), due to a decrease in freight transport to distant areas. Amounts for the past five years are shown in Figure 10 and Figure 11.

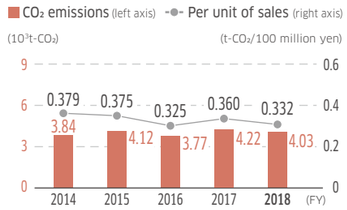


Figure 10: CO_2 Emissions from Logistics Processes and Per Unit of Sales

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 the Agency for Natural Resources and Energy.

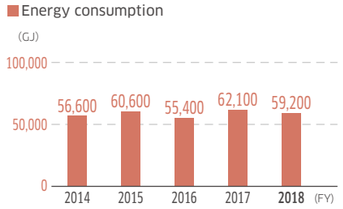


Figure 11: Energy Consumption from Logistics Processes

Utilizing Renewable Energy

The Kawasaki Group is making its production and other equipment more energy efficient, and advancing the use of renewable energy, as efforts to reduce the CO_2 emissions from its plants. We are installing solar power generating systems at our plants, and have a total generation capacity of 4,171 kW, including subsidiaries (some of the equipment installations were subsidized by the New Energy Promotion Council).

In fiscal 2018, we used about 1.6GWh of power from renewable energy sources in-house and reduced CO_2 emissions by approximately 1,000 tons.

Table 3: The Kawasaki Group's Solar Power Generation Capacity

Name	Power Usage	Generation Capacity (kW)
Iwaoka Photovoltaic Power Generation Station*1	Sold via FIT*2	1,505
Nagoya Works 1	Used in-house	750
Seishin Photovoltaic Power Generation Station*1	Sold via FIT	701
Nishi-Kobe Works	Used in-house	505
Nishi-Kobe Photovoltaic Power Generation Station*1	Sold via FIT	422
Akashi Works	Used in-house	140
Sakaide Works	Used in-house	50
Kakogawa Photovoltaic Power Generation Station*1	Sold via FIT	48
Hyogo Works	Used in-house	25
Kobe Works	Used in-house	20
Harima Works	Used in-house	5
Total		4,171

*1 Power generation facility operated by Kawasaki Trading Co., Ltd.
*2 FIT: Feed-in tariff; a program where renewable energy is bought back at a fixed rate

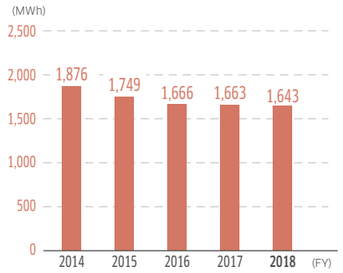


Figure 12: Photovoltaic Output (used in-house)

Figure 13: Nagoya Works 1: 750-kW power generation facility

Figure 14: Nishi-Kobe Works: 927-kW power generation facility (of which 422 kW are sold via FIT)

Reducing CO_2 Emissions through Product-Based Contributions

About 90% of CO_2 emitted during the lifecycles of our products is released during the period of their use after they are sold. Thus, the Company seeks to realize a low-carbon society by providing products that produce only low CO_2 emissions during their use. We established a new rule for calculating the CO_2 emissions reduction through product-based contributions, in order to quantify contributions of highly energy efficient products to the mitigation of global warming.

Calculations based on this rule showed that the CO_2 emissions reduction through products we sold in fiscal 2018 was about 22.9 million tons. Large contributions were made mainly by the Green Gas Engine, which achieved the world's highest power-generation efficiency in its class, and the CKK System, which reduced cement calcination fuel by combining cement manufacturing with waste processing.

In order to quantify contributions of highly energy efficient products to the mitigation of global warming, calculation of CO_2 emissions reduction through product-based contributions includes power generated through waste heat, waste, renewable energy, and so forth. As a result, some of the products differ from those included in the calculation of Scope 3, Category 11, which covers only CO_2 emissions from energy-derived sources.

Amounts for the past five years are shown in Figure 15.

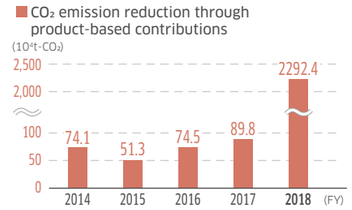


Figure 15: CO_2 Emission Reduction through Product-Based Contributions

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 emission reduction effect through product-based contributions achieved through higher energy efficiency of products is based on a comparison using industry standard class products.
3. Application of waste heat, waste, and renewable energy is counted toward the CO_2 emissions reduction effect through product-based contributions.

Calculation Rule

We established a new calculation rule with reference to the Guideline for Quantifying Greenhouse Gas Emission Reduction Contribution (Ministry of Economy, Trade and Industry, March 2018).

- Products to be assessed: Kawasaki-brand Green Products, products that use renewable energy, waste and waste heat, as well as cogeneration systems and rolling stock pertaining to modal shift, etc., were selected for assessment.
- Period of assessment: The difference in CO_2 emissions between our products and industry standard class products over the period of use was calculated by newly adopting the Flow Base Approach. The period of assessment was the expected useful life of products sold in the fiscal year, instead of one-year period assessment used until fiscal 2017, because our products are expected to be used for long periods.

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. Kawasaki takes great care to fully utilize and recycle the limited resources procured for our products and manufacturing processes, which consume these resources without waste. To that end, we promote waste reduction and recycling during manufacturing, and systematically treat PCB waste.

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

Promotion of the 3Rs

Targets

❶ **Reduce total waste generation and maintain zero emission status**
→ Reduce total waste generation 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 treat high- and low-concentration PCB waste

Reduction of Waste Generation

We are continuing activities to achieve our targets to reduce waste generated through our manufacturing processes on a per unit of sales basis by using resources effectively, and to achieve zero status for waste disposed into landfills through the promotion of recycling.

In fiscal 2018, waste generated per unit of sales amounted to 4.24 tons/100 million yen, a reduction of 5.4% compared to the average from fiscal 2014 to fiscal 2016. The final disposal (landfill) ratio was 0.2%, achieving the target of 1% or less. Moreover, our recycling rate was 98%. Going forward, we will continue to pursue initiatives with a focus on the 3Rs. Amounts for the past five years are shown in Figure 16.

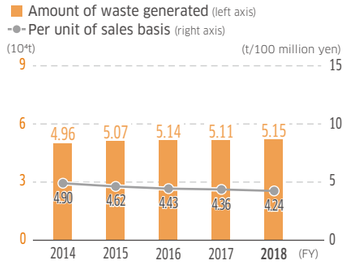


Figure 16: Amount of Waste Generated and Per Unit of Sales Basis

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

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 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.

To achieve these targets, we are steadily implementing steps to address PCB waste, including ceasing use of products and devices that contain PCBs and putting such items into storage, confirming disposal volume, and looking into providers with facilities to treat low-concentration PCB waste on our behalf. We made significant progress in the disposal of waste stabilizers in fiscal 2018.

Realization of a Society Coexisting with Nature

Modern society is maintained through the benefits of various ecosystem services from nature, including resource renewal and reproduction in air, water, and soil environments. Kawasaki 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. For that reason, we promote improvements in the environment and protection of the ecosystem through the reduction of chemical substances in production activities, while also cooperating with environmental conservation activities in local communities.

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

Reduction of environmental load/promotion of resource conservation

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 activities**
→ Carry out forest conservation activities at least twice a year

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 (lead compounds and hexavalent chromium compounds) in each business segment, and applied approaches to curb consumption and emissions.

Toward this end, we made progress in improving efficiency in painting and introducing alternatives to current paints to reduce major VOCs emitted in the painting process. As a result, we achieved our reduction targets for major VOCs in fiscal 2018. We reduced the use of dichloromethane and hazardous heavy metals and achieved our targets.

Going forward, we will continue to conduct proper management of chemical substances, while aiming to reduce consumption and emissions.

Furthermore, we are appropriately identifying chemical substances at each business site and notifying the government based on the PRTR Law (Pollutant Release and Transfer Register Law).

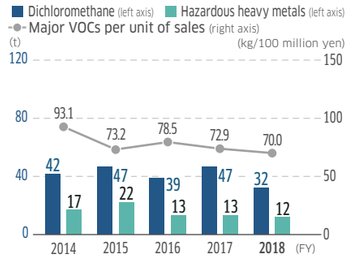


Figure 17: Emissions and Handling Volume of Managed Chemical Substances

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

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

Fiscal 2018 Achievements

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 & Robot Company also applies this directive to some of our products. The RoHS Directive covers electric and electronic products, and in Kawasaki, the Precision Machinery & Robot 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.

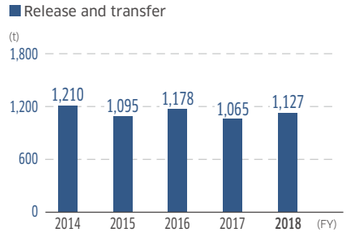


Figure 18: Release and Transfer of Chemical Substances Designated under the PRTR Law*

*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)

CSR Procurement Guidelines ▸
https://global.kawasaki.com/en/corp/sustainability/procurement/pdf/csr_tyoutatsu_guideline.pdf

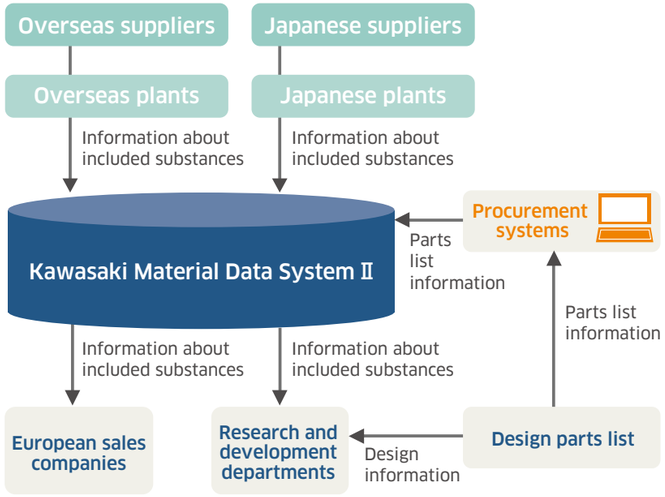


Figure 19: Response to REACH by the Motorcycle & Engine Company

*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 Japan, South Korea, Europe and the United States which enables suppliers to identify the composition of materials in respective parts delivered to the automotive industry)

Approaches by the Motorcycle & Engine Company

Reducing Exhaust Emissions

In fiscal 2018, we made efforts to achieve cleaner exhaust gas from our touring motorcycle model, which has a supercharged engine and was launched worldwide.

In addition to securing the top level of output and acceleration for large touring models, this motorcycle achieves top results in fuel performance and low exhaust emissions. It is being sold in Europe, Japan and elsewhere in the world, thanks to EUROIV-compliant levels of exhaust emissions such as CO and NOx and compliance with R41 noise emission regulations.

Figure 20: Ninja H2 SX SE

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 2018, we achieved a recycling rate of 97.5%, again exceeding our target as in the previous year. Since October 2011, the user burden of recycling costs has become free of charge (excluding transportation costs).

For new-model motorcycles, we emphasize environmentally conscious designs highlighting reduced materials and more recycling, right from the development phase. We conduct preliminary evaluations of efforts related to the 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.

Conserving Water

Kawasaki has set reduction targets on a per unit of sales basis for the effective use of water. In fiscal 2018, water consumption per unit of sales decreased 2.4% year on year.

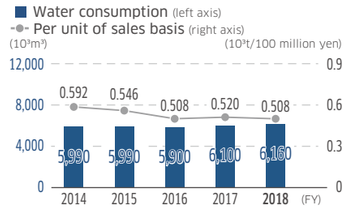


Figure 21: Water Consumption and Per Unit of Sales Basis

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

Forest Conservation Activity

We are engaged in forest conservation activities in two locations: Hyogo Prefecture and Kochi Prefecture.

In Hyogo Prefecture, we have participated in the prefecture's corporate forest restoration project since December 2008. Our forest conservation activities started out at a community forest named Kawasaki Heavy Industries Saidani Nagomi-no-Mori, in the town of Taka. In 2014, we changed the location of our activities within this town, and are continuing our efforts under the new name, Kawasaki Heavy Industries Yokamura Park Nagomi-no-Mori.

Since the start of our forest conservation activities in 2008, the number of participating employees and their family members has reached a cumulative total of approximately 1,980 people, and approximately 2,760 trees consisting of 45 varieties, including Japanese red pine, konara oak, and mountain cherry have been planted.

In addition, in Kochi Prefecture, we have participated in a prefecture-organized forest restoration project aimed at forest regeneration, and have been active in the town of Niyodogawa since 2007. Every year, new employees conduct forest conservation activities such as thinning and deepen our level of exchange with local communities.

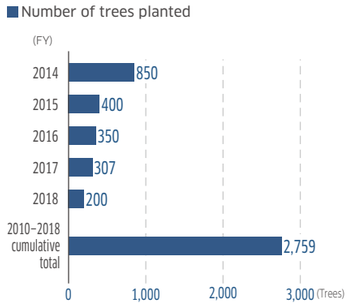


Figure 22: Number of Planted Trees by Fiscal Year

Table 4: Fiscal 2018 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, and others (294 people)	Employees and others (66 people)
Achievements	Area: 1.41ha CO_2 absorbed: 4.98t/CO_2 Trees planted: 200	Area: 0.3ha CO_2 absorbed: 16.5t/CO_2
Number of events	Three times a year	Once a year

Environmental Education through Forest Conservation Activities

We carry out forest conservation activities every year, such as forest development and experiential learning, to give people an opportunity to think about the environment.

Table 5: Fiscal 2018 Achievements

Activity content	Aim	Date
Paper-making workshop using milk cartons	Learning about paper recycling	April 2017
Building nest boxes for great spotted woodpeckers	To attract the great spotted woodpecker, a predator of the Japanese pine sawyer beetle, which causes pine wilt disease	October 2017
Woodworking classes	Getting in touch with nature by using materials such as pine cones and acorns	October 2017


Participants made paper from milk cartons.

Figure 23: Paper-making class (with the cooperation of Kawasaki Heartfelt Service Co., Ltd.*)



Participants built nest boxes from a 180-cm board. Nest boxes were placed in a local area

Figure 24: Building nest boxes for great spotted woodpeckers (with the cooperation of the Hyogo Mori no Club, an NPO)


Participants created various items using pine cones, acorns and other nuts.

Figure 25: Woodworking class (with the cooperation of the Hyogo Mori no Club, an NPO)

*Kawasaki Heartfelt Service Co., Ltd. is a special subsidiary of Kawasaki Heavy Industries, Ltd., established to support retention of people with disabilities. Its main business is contracted general administration and cleaning services. It also engages in the business of recycling milk cartons to make paper.

Establishment of Environmental Management Systems

Kawasaki is establishing environmental management systems (EMS), and is conducting various initiatives aimed at realization of a low-carbon society, realization of a recycling-oriented society, and realization of a society coexisting with nature.

The long-term vision set forth for 2010 and 2020 serves as a guideline for the achievements we intend to realize through EMS operation. The appropriate operation of EMS has led to continued reductions in our environmental impact, and we will continue EMS operations going forward, with an aim toward further achievements.

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

Kawasaki Group EMS

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

Kawasaki's manufacturing sites and domestic and overseas subsidiaries have completed the acquisition of ISO 14001 certification or simplified EMS certification, or established EMS through self-declaration within the scope of its stipulation.

The latest information on the establishment of EMS within the Group is shown in Figure 26, while the current situations for acquiring ISO 14001 certification for Kawasaki's manufacturing sites is shown in Table 6 and the status of EMS establishment at subsidiaries is shown in tables 7 and 8. In response to the revision of ISO 14001, we are promoting the transition to ISO 14001:2015. In 2017, certification was acquired, excluding the Aerospace Systems segment (based in the Gifu region). (The transition was completed on September 14, 2018.)

For sites engaged in EMS implementation, efforts are being directed toward the collection of environmental data and the sharing of such data at the Head Office Environmental Management Division. In addition, this division engages in information sharing with subsidiaries, in order to further instill our environmental management policy as a Group. In fiscal 2018, the division held various exchanges of opinion about setting targets with overseas subsidiaries (KMT) that have high energy consumption, and shared awareness.

Table 6: 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

Risk Management

In addition to approaches based on our risk management structures, we hold liaison conferences from time to time for personnel with environmental responsibilities 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 Environmental Management Division and personnel with environmental responsibilities at the Group, focus on compliance with environmental laws and regulations to preempt environmental accidents and other situations.

In fiscal 2018, we held a liaison conference on August 23 for managers responsible for environmental protection. The goal was to raise awareness of handling waste products containing mercury following the enforcement of the Act on Preventing Environmental Pollution of Mercury (August 16, 2017).

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.

There were no major violations in fiscal 2018. However, we received an instruction for improvement from the government regarding the handling of waste and effluent from wastewater treatment facilities. We resolved these matters by setting up an additional storage venue for waste and changing the defoaming agent used to treat effluent.

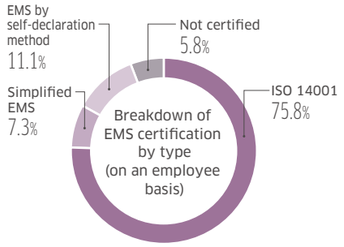


Figure 26: Breakdown of EMS Certification, by Type, within the Group (on an employee basis)

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

Table 7: 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 CORPORATION	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 8: 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
	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

Promoting Environmental Communication

Raising Environmental Awareness

We are engaged in public relations activities aimed at enhancing the perception and awareness of environmental issues among each and every employee of the Group. We conduct ongoing awareness raising activities including the publication of environment-related articles in the Kawasaki internal bulletin, distribution of the President's message for Environment Month, and distribution of information (environmental data, case examples of energy saving, etc.) through our intranet, so that employees can put environmentally conscious activities into practice not only at the workplace, but also in local communities and homes. Examples of awareness raising activities are shown in Figure 27, Figure 28, and Figure 29.

Figure 27: Articles featured in internal bulletins

Figure 28: President's message on environmental management

Figure 29: Distribution of information through our intranet

Environmental e-Learning

To maintain and improve environmental awareness among employees throughout the domestic Group, we offer environmental e-learning opportunities to new employees at both Kawasaki and domestic subsidiaries. In fiscal 2018, approximately 1,100 people completed the training.

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. The number of employees with qualifications in fiscal 2018 is shown in Table 9. In addition, as an internal qualification, we offer training for internal ISO 14001 environmental management and environmental auditors, through which approximately 80 employees acquired qualifications in fiscal 2018. Furthermore, follow-up training has been conducted for employees that have already participated in training to support the transition to ISO 14001:2015, and approximately 1,200 employees acquired qualifications in fiscal 2018.

Table 9: Number of Employees with Legal Qualifications

Pollution control managers	Air	94
	Water	79
	Noise, vibration	42
	Others	80
	Total	295
Energy managers		82

Heightened Awareness as an Environmentally Friendly Brand

Kawasaki believes that one of its important responsibilities is to make its environmental policies and initiatives easy to understand and to disclose those policies with transparency. We conduct Kawasaki Green Product Promotion Activity that includes the registration of products based on an assessment of product performance and the manufacturing process in consideration of the environment, with the aim of broadly communicating and instilling our support for the environment through our products. In addition, we work to appropriately disclose information regarding our environmental activities to stakeholders by disclosing information in the Environmental Report and on our website, and by proactively responding to questionnaires, etc., from external evaluation organizations.

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

Heightened awareness as an environmentally friendly brand

Targets

❶ **Leverage Kawasaki Green Product Promotion Activity**
→ Register Kawasaki-brand Green Products every year and release data to public

❷ **Enhance image through external evaluations and rankings**
→ Announce results of third-party verification, improve evaluations from external organizations such as CDP, and sustain placement in Dow Jones Sustainability Index

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.

Figure 30: Program logo

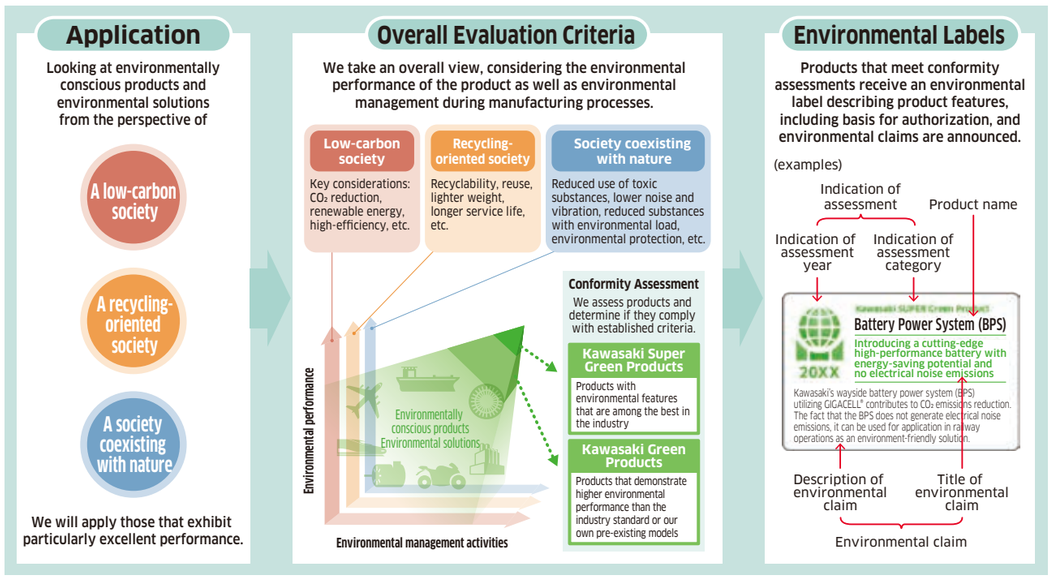


Figure 31: Conformity Assessment Procedure

External Information Disclosure

Kawasaki discloses information to our stakeholders through means such as the Kawasaki Report, the Environmental Report, and our website. In addition, we receive questionnaires from many external evaluation organizations, including: the CDP Climate Change Information Request, published by the CDP; the Toyo Keizai CSR Survey; the Environmental Management Survey, conducted by Nikkei Research Inc.; the Environmental Survey, conducted by Sompo Japan Nipponkoa Asset Management Co., Ltd. (SNAM); and the Dow Jones Sustainability Index, which we view as the voice of stakeholders representing investors, and we vigorously pursue the disclosure of environmental information by responding to such questionnaires.

As a result, we have continuously been selected as a stock for investment for the DJSI Asia Pacific Index, and the SNAM Sustainable Investment Fund, which is managed by SNAM.

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

2018 Kawasaki-brand Green Products

[New]

LPG Powered Large LPG Carrier

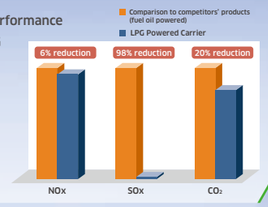
2018
Kawasaki
SUPER Green Product

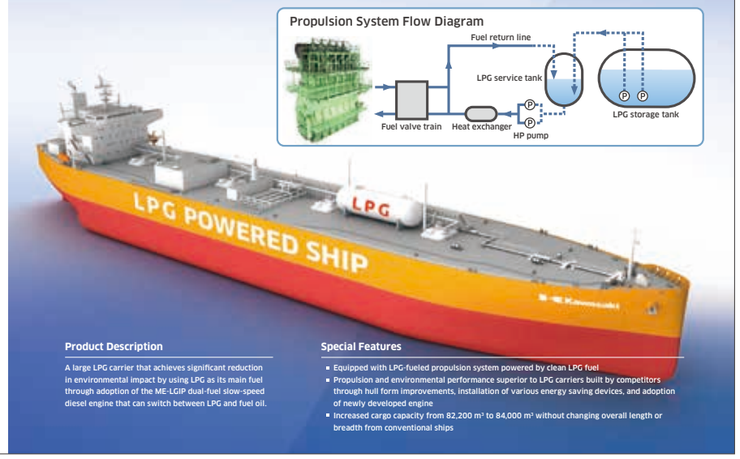
Kawasaki Heavy Industries, Ltd.

Kawasaki
Powering your potential

Realizing world-class environmental performance with a propulsion system fueled by LPG

We achieved an LPG fueled propulsion system by developing a fuel circulating system that controls the fuel's flow, pressure, and temperature to ensure a stable supply of LPG fuel.
Through the switch to LPG fuel and improvements to the hull form, we have reduced emissions of NOx, SOx, and CO_2 by approximately 6%, 98%, and 20%, respectively, compared to competitors' products.





Product Description

A large LPG carrier that achieves significant reduction in environmental impact by using LPG as its main fuel through adoption of the ME-LGIP dual-fuel slow-speed diesel engine that can switch between LPG and fuel oil.

Special Features

- Equipped with LPG-fueled propulsion system powered by clean LPG fuel
- Propulsion and environmental performance superior to LPG carriers built by competitors through hull form improvements, installation of various energy saving devices, and adoption of newly developed engine
- Increased cargo capacity from 82,200 m³ to 84,000 m³ without changing overall length or breadth from conventional ships

Track Material Monitoring Device

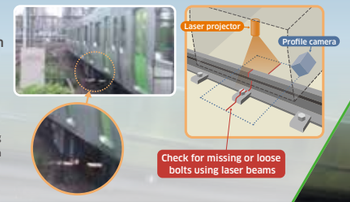
2018
Kawasaki
SUPER Green Product

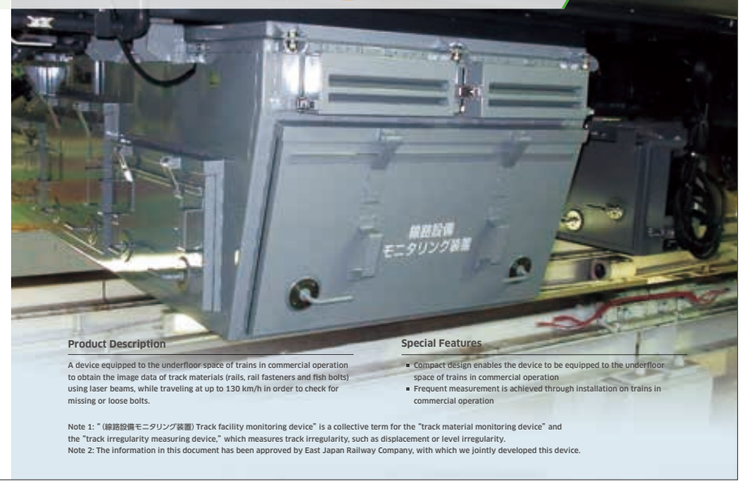
Kawasaki Heavy Industries, Ltd.

Kawasaki
Powering your potential

Reducing environmental impact using trains in commercial operation for track material monitoring

The device can be equipped to the underfloor space of trains in commercial operation. This eliminates the need for special inspection cars equipped with monitoring devices, thus reducing energy usage. It also reduces nighttime vibration and noise as it eliminates the need to operate special inspection cars at night.





Product Description

A device equipped to the underfloor space of trains in commercial operation to obtain the image data of track materials (rails, rail fasteners and fish bolts) using laser beams, while traveling at up to 130 km/h in order to check for missing or loose bolts.

Special Features

- Compact design enables the device to be equipped to the underfloor space of trains in commercial operation
- Frequent measurement is achieved through installation on trains in commercial operation

Note 1: "(線路設備モニタリング装置) Track facility monitoring device" is a collective term for the "track material monitoring device" and the "track irregularity measuring device," which measures track irregularity, such as displacement or level irregularity.
Note 2: The information in this document has been approved by East Japan Railway Company, with which we jointly developed this device.

E-series Rexpeller (Azimuth Thruster)

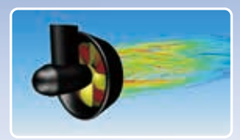
2018
Kawasaki
SUPER Green Product

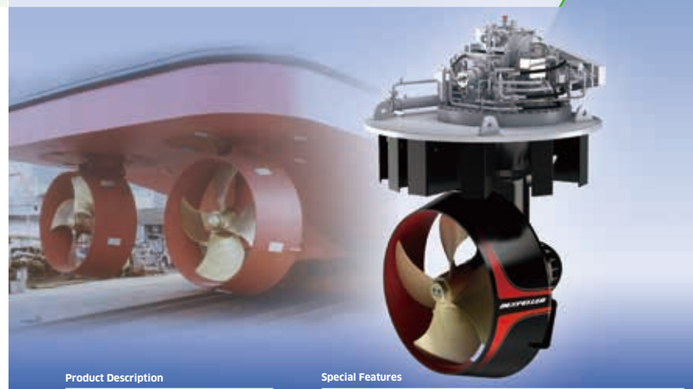
Kawasaki Heavy Industries, Ltd.

Kawasaki
Powering your potential

Improved propulsive performance through newly developed propeller duct and reduced noise through modified pump drive system

This product realizes energy saving by using fluid analysis technology to optimize the lower gear case, and employing a newly developed compact, high-performance propeller duct (Kort nozzle). It reduces noise by more than 10 dB by changing the pump drive system from the conventional gear to belts.





Product Description

Azimuth thruster "E-series Rexpeller" developed with the "three Es" as its key concepts: Energy saving by improving propulsion performance; Easy maintenance inside the ship; and Environmentally friendly.

Special Features

- Energy saving through optimization of lower gear case and adoption of newly developed compact and high-performance propeller duct (Kort nozzle)
- Easier maintenance operations inside the ship by revising the structure of hydraulic clutch
- Improves shipboard working environment by reducing noise through adoption of belts for hydraulic pump drive system

M5A-01D Gas Turbine

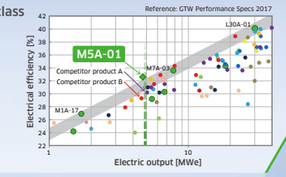
2018
Kawasaki
SUPER Green Product

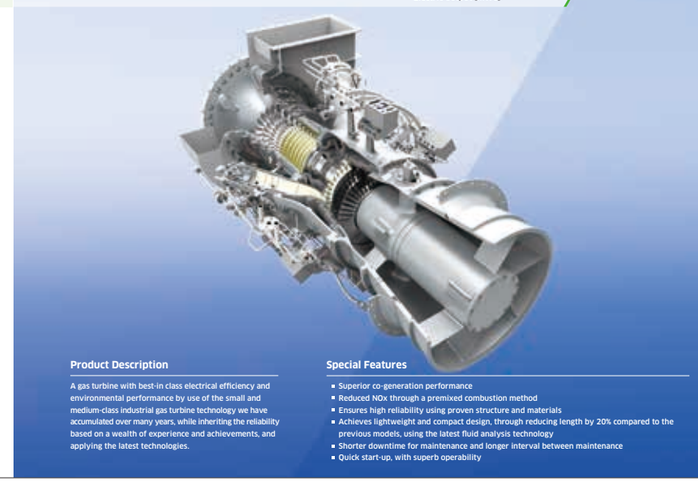
Kawasaki Heavy Industries, Ltd.

Kawasaki
Powering your potential

Achieves world's best electrical efficiency and environmental performance in 5 MW class with lightweight, compact design

Achieves the world's highest electrical efficiency of 32.6% in the 5 MW class, and satisfying best-in-class environmental performance with NOx emissions of 15 ppm (O_2 = 15%). It is 20% shorter and 26% lighter than competitors' products.
Using in a co-generation system achieves best-in-class combined efficiency of 84.6%.





Product Description

A gas turbine with best-in class electrical efficiency and environmental performance by use of the small and medium-class industrial gas turbine technology we have accumulated over many years, while inheriting the reliability based on a wealth of experience and achievements, and applying the latest technologies.

Special Features

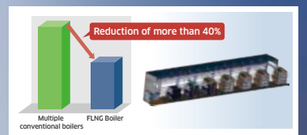
- Superior co-generation performance
- Reduced NOx through a premixed combustion method
- Ensures high reliability using proven structure and materials
- Achieves lightweight and compact design, through reducing length by 20% compared to the previous models, using the latest fluid analysis technology
- Shorter downtime for maintenance and longer interval between maintenance
- Quick start-up, with superb operability

Kawasaki
Powering your potential

FLNG Boiler

Greatly reduces manufacturing energy with world's largest off-shore boiler

With reduced number of boilers installed through increased size, this product reduces CO_2 emissions during manufacturing by more than 40% compared to our previous method of installing multiple conventional boilers. Decreases manufacturing time and reduces energy costs by continuous manufacture and shipment of boilers.



Comparison of CO_2 emissions during manufacturing

Continuous manufacture and shipment of boilers

2018
Kawasaki
Green Product

Product Description

The world's first large-scale boiler for an FLNG facility (floating production, storage and offloading of LNG) with a robust structure and a combustion chamber optimized to meet special, high-level specifications required for off-shore applications. Seven boilers are in operation on our first installation, onboard an FLNG facility at the Australian offshore site.

Special Features

- Steam production capability with "High-temperature, High-pressure and Large-capacity"
- Reduced weight through modification of structure around windbox and drum
- Ensures strength against hull motion, including the impact of large-scale typhoons
- The boiler can act as a blast-resistant shield to protect the cabin during emergencies

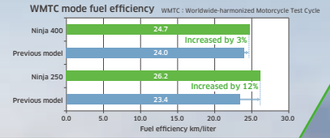
Kawasaki Heavy Industries, Ltd.

Kawasaki
Powering your potential

Ninja 400/Ninja 250

Achieves improved fuel efficiency, reduced power/weight ratio, and greatly reduced exhaust emissions through significant reduction in weight

Improves fuel efficiency by 3% (Ninja 400)/12% (Ninja 250) and reduces power/weight ratio by 28%/19% compared to base models. Reduces exhaust emissions: CO by 37%/76%, THC by 42%/76%, and NOx by 67%/13%.



2018
Kawasaki
Green Product

Product Description

This is a worldwide strategic model aimed at further sales growth. This is an all-new Ninja 400/Ninja 250, an evolutionary advance while achieving both high performance and ease of handling.

Special Features

- Improves fuel efficiency and reduces emissions by reducing weight, which is highly effective for improving both operating performance and ease of handling
- Ninja 400 has achieved major weight reduction of more than 20%

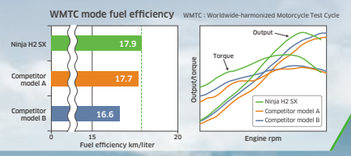
Kawasaki Heavy Industries, Ltd.

Kawasaki
Powering your potential

Ninja H2 SX

Achieves world's highest level of power performance with excellent fuel efficiency and low exhaust emissions

Top-level environmental performance: undisputed leader among competitors' models for Japan certified fuel efficiency, and also complies with EUROIV, European emission regulations and R41-04, Europe's new noise emission regulations.



2018
Kawasaki
SUPER Green Product

Product Description

Latest model in Ninja H2 series, which includes "Ninja H2" and "Ninja H2R" that are highly acclaimed and enjoy high popularity with their supercharged engine and dominating performance.

Special Features

- High fuel efficiency that outperforms our and competitors' products with equivalent output, while delivering the high output and fierce acceleration that are hallmarks of supercharged models
- Achieves acceleration, day-to-day ease of handling, excellent fuel efficiency and touring performance through next-generation balanced supercharged engine

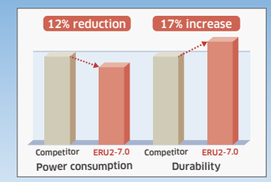
Kawasaki Heavy Industries, Ltd.

Kawasaki
Powering your potential

Electric Joystick ERU2-7.0

Achieves both major reduction in power consumption and high durability

Reduces power consumption by 12% compared to competitors' products, and achieves industry-leading durability (number of switching operations).



2018
Kawasaki
SUPER Green Product

Product Description

Electric joystick for operating construction machinery supporting electrical pilot control of next-generation hydraulic excavators, and achieving excellent operability and durability through use of force feedback mechanism.

Special Features

- Achieves excellent operability and durability through use of same force feedback mechanism as hydraulic remote control valve PV48
- More compact body size while maintaining the structure of our previous model
- Lower power through new potentiometer design

Kawasaki Heavy Industries, Ltd.

F60 Controller

2018
Kawasaki
SUPER Green Product

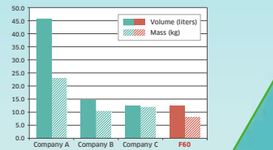
Kawasaki Heavy Industries, Ltd.

Kawasaki
Powering your potential

Improves energy efficiency through lightweight and compact design and improved reutilization rate of regenerative power

With a volume of 12.4 liters and weighing 8.3 kg, this controller achieves the smallest and most lightweight design in its class by optimizing the case structure and consolidating components. It also consumes about 10%* less power than our previous model through increased storage capacity and improved reutilization rate of regenerative power.

* From comparison testing by Kawasaki using RS010N



Product Description

Industry's smallest and most lightweight controller for compact robots, fitting the wealth of functionality of Kawasaki Robotics into a compact form.

Special Features

- Industry's smallest and most lightweight controller suited for compact robots up to the 10-kg portable weight class
- Energy-efficient controller with about 52% higher storage capacity than our previous model, and increased reutilization rate of regenerative power
- Universal specification complies with safety standards of countries worldwide
- Highly extensible to meet wide range of needs

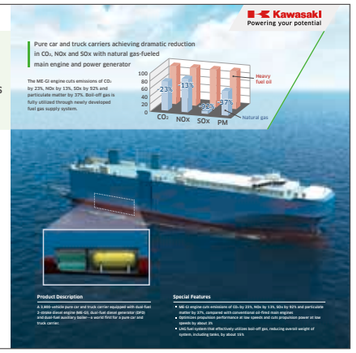
[Renewal]

After registration, products are reassessed every three years, and registration is renewed for products that meet the criteria.

LNG-Fueled
Pure Car and Truck Carriers

2018
Kawasaki
SUPER Green Product
Initial registration: 2016

Kawasaki Heavy Industries, Ltd.



efWING

2018
Kawasaki
SUPER Green Product
Initial registration: 2016

Kawasaki Heavy Industries, Ltd.

Straight Tube LED Lamps
for Rail Cars

2018
Kawasaki
Green Product
Initial registration: 2016
Modified registration: 2018

Kawasaki Heavy Industries, Ltd.

M7A-03D
Gas Turbine

2018
Kawasaki
SUPER Green Product
Initial registration: 2015

Kawasaki Heavy Industries, Ltd.

Versys 650

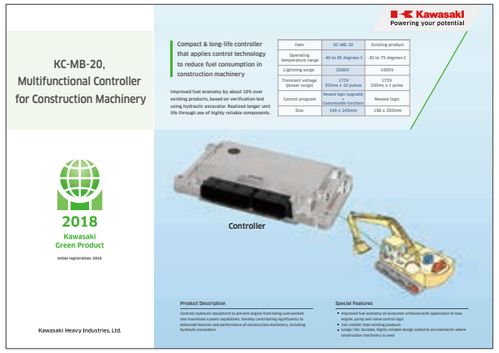
2018
Kawasaki
Green Product
Initial registration: 2015

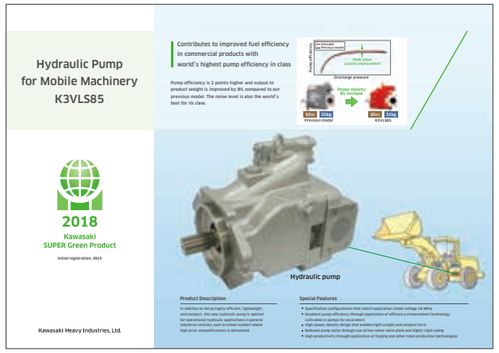
Kawasaki Heavy Industries, Ltd.

Versys 1000

2018
Kawasaki
Green Product
Initial registration: 2015

Kawasaki Heavy Industries, Ltd.





Environmental Data

Kawasaki's Environmental Data (Fiscal 2018)

			Unit	Amount	Change from fiscal 2017
INPUT		Total energy consumption (crude oil conversion)	kl	160,664	102%
		Purchased electricity	MWh	387,537	103%
		Fuel	TJ	2,452	101%
		Renewable energy	MWh	1,643	99%
		Materials	10,000 t	14	100%
		Water	1,000 m^3	6,160	101%
OUTPUT	Air	CO_2 emissions from energy sources	t	327,877	102%
		SOx	t	3	66%
		NOx	t	165	107%
		Soot and dust	t	4	139%
		PRTR regulated substance	t	867	107%
	Water	Wastewater	1,000 m^3	4,554	119%
		COD	t	7	78%
		Nitrogen	t	26	70%
		Phosphorus	t	Under 1	106%
		PRTR regulated substance	t	5	250%
	Waste	Total emitted	t	51,476	101%
		Recycled	t	50,240	101%
		Others	t	1,237	104%
		PRTR regulated substance in above total	t	255	102%
	Others	CO_2 emissions during transport	t	4,026	95%

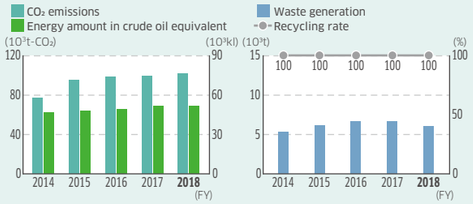
Environmental Data by Business Site (Fiscal 2018) 1/2

			Unit	Gifu Works	Nagoya Works 1	Kobe Works	Hyogo Works	Nishi-Kobe Works
INPUT		Total energy consumption (crude oil conversion)	kl	39,055	12,644	11,788	6,048	23,456
		Purchased electricity	MWh	80,636	48,925	29,190	18,640	85,313
		Fuel	TJ	729	14	173	53	79
		Renewable energy	MWh	0	818	23	28	548
		Water	1,000 m^3	4,361	81	294	79	257
OUTPUT	Air	CO_2 emissions from energy sources	t	77,599	24,425	23,574	11,999	45,941
		SOx	t	Under 1	Under 1	3	0	0
		NOx	t	36	Under 1	69	Under 1	Under 1
		Soot and dust	t	Under 1	Under 1	Under 1	Under 1	Under 1
		PRTR regulated substance	t	93	1	65	84	75
	Water	Wastewater	1,000 m^3	3,153	19	118	79	80
		COD	t	6	Under 1	Under 1	Under 1	Under 1
		Nitrogen	t	24	Under 1	Under 1	Under 1	Under 1
		Phosphorus	t	Under 1	Under 1	Under 1	Under 1	Under 1
		PRTR regulated substance	t	1	0	0	0	0
	Waste	Total emitted	t	4,995	1,025	8,038	4,837	5,960
		Recycled	t	4,995	1,025	8,034	4,834	5,960
		Other (incineration/reclamation)	t	0	0	4	3	0
		PRTR regulated substance in above total	t	61	0	18	84	52

Gifu Works and Nagoya Works 1

Location 1, Kawasaki-cho, Kakamigahara, Gifu 504-8710, Japan
20-3, Kusunoki 3-chome, Yatomi, Aichi 498-0066, Japan

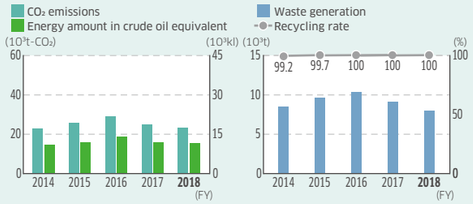
Main products Transport airplanes, helicopters, spacecraft, component parts for airplanes



Kobe Works

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

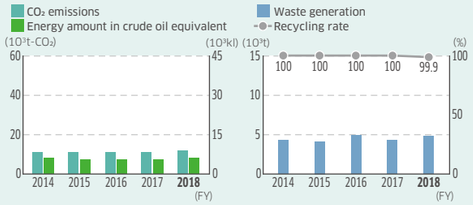
Main products Ships & maritime application equipment, steam turbines for ground and maritime applications, diesel engines



Hyogo Works

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

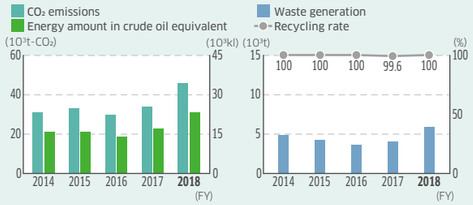
Main products Rolling stock, automated guideway transit systems, platform screen doors



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



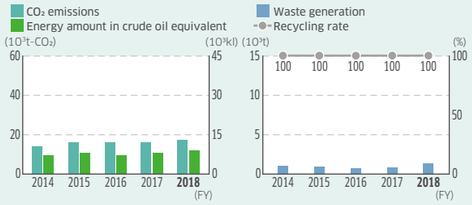
Environmental Data by Business Site (Fiscal 2018) 2/2

			Unit	Seishin Works	Akashi Works	Kakogawa Works	Harima Works	Sakaide Works
INPUT		Total energy consumption (crude oil conversion)	kl	8,935	44,676	3,885	3,931	9,654
		Purchased electricity	MWh	27,902	43,678	8,534	12,361	35,266
		Fuel	TJ	75	1,307	68	32	31
		Renewable energy	MWh	0	157	0	5	62
		Water	1,000 m^3	96	845	12	77	491
OUTPUT	Air	CO_2 emissions from energy sources	t	17,414	89,158	7,510	7,756	20,433
		SOx	t	0	0	0	0	0
		NOx	t	2	10	0	Under 1	34
		Soot and dust	t	0	3	0	Under 1	Under 1
		PRTR regulated substance	t	14	58	0	66	411
	Water	Wastewater	1,000 m^3	57	546	4	26	471
		COD	t	-	-	Under 1	0	Under 1
		Nitrogen	t	-	-	Under 1	Under 1	Under 1
		Phosphorus	t	-	-	Under 1	Under 1	Under 1
		PRTR regulated substance	t	4	0	0	0	0
	Waste	Total emitted	t	1,718	6,276	1,314	4,725	12,513
		Recycled	t	1,718	6,268	1,302	4,725	11,303
		Other (incineration/reclamation)	t	0	8	12	0	1,210
		PRTR regulated substance in above total	t	0	58	0	7	15

Seishin Works

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

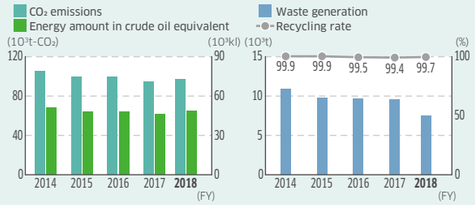
Main products Component parts for jet engines and gas turbines



Akashi Works and Kakogawa Works

Location 1-1, Kawasaki-cho, Akashi, Hyogo 673-8666, Japan
170, Yamanoue Mukohara, Hiraoka-cho, Kakogawa, Hyogo 675-0112, Japan

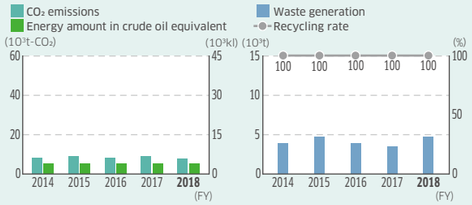
Main products Motorcycles, general-purpose gasoline engines, industrial robots, jet engines, industrial gas turbines



Harima Works

Location 8, Niijima, Harima-cho, Kako-gun, Hyogo 675-0180, Japan

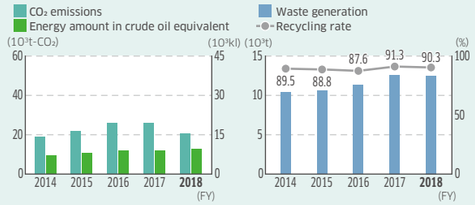
Main products Industrial & environmental plants, boilers, construction machinery, rolling stock



Sakaide Works

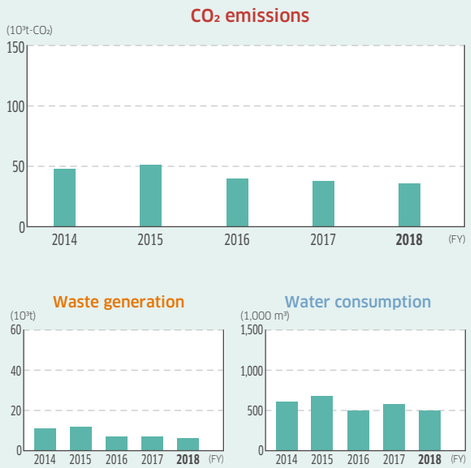
Location 1, Kawasaki-cho, Sakaide, Kagawa 762-8507, Japan

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

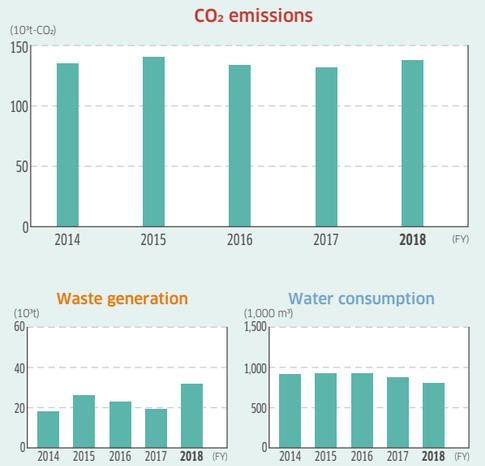


Environmental Data of Subsidiaries (Fiscal 2018)

Total for Domestic Subsidiaries

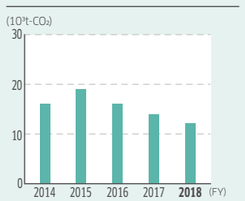


Total for Overseas Subsidiaries

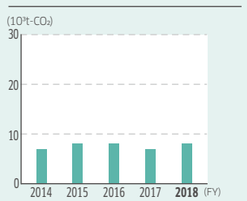


CO_2 Emissions of Domestic Major Subsidiaries

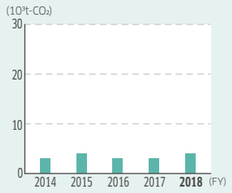
NIPPI Corporation



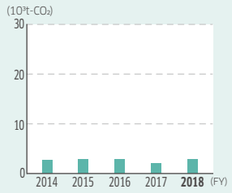
EarthTechnica Co., Ltd.



Technica Corp.

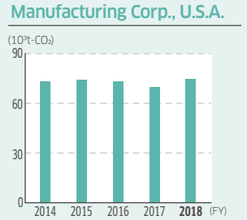


Kawasaki Thermal Engineering Co., Ltd.

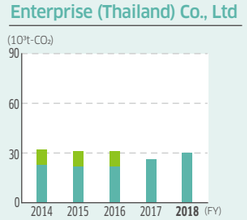


CO_2 Emissions of Overseas Major Subsidiaries

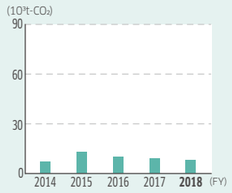
Kawasaki Motors Manufacturing Corp., U.S.A.



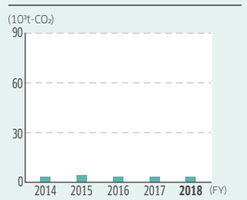
Kawasaki Motors Enterprise (Thailand) Co., Ltd



PT. Kawasaki Motor Indonesia



Kawasaki Precision Machinery (UK) Ltd.



*Totals displayed after the merger with KHITKAN Co., Ltd. in fiscal 2017.
- KHITKAN Co., Ltd
- Kawasaki Motors Enterprise (Thailand) Co., Ltd

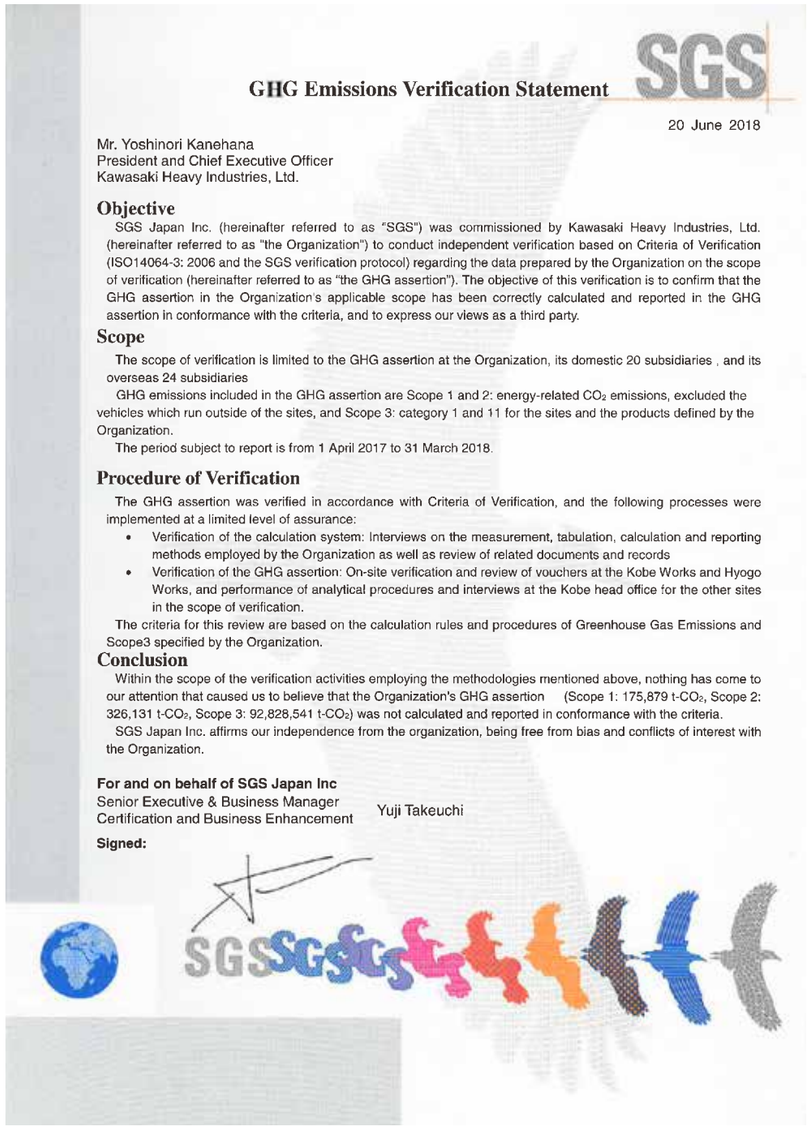
Third-Party Verification of Greenhouse Gas Emissions

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 2018

- Scope 1 and 2 greenhouse gas emissions associated with business activities at Kawasaki and 20 domestic and 24 overseas subsidiaries
- 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



GHG Emissions Verification Statement SGS

20 June 2018

Mr. Yoshinori Kanehana
President and Chief Executive Officer
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 Criteria of Verification (ISO14064-3: 2006 and the SGS verification protocol) regarding the data prepared by the Organization on the scope of verification (hereinafter referred to as "the GHG assertion"). The objective of this verification is to confirm that the GHG assertion in the Organization's applicable scope has been correctly calculated and reported in the GHG assertion in conformance with the criteria, and to express our views as a third party.

Scope

The scope of verification is limited to the GHG assertion at the Organization, its domestic 20 subsidiaries , and its overseas 24 subsidiaries

GHG emissions included in the GHG assertion are Scope 1 and 2: energy-related CO_2 emissions, excluded the vehicles which run outside of the sites, and Scope 3: category 1 and 11 for the sites and the products defined by the Organization.

The period subject to report is from 1 April 2017 to 31 March 2018.

Procedure of Verification

The GHG assertion was verified in accordance with Criteria of Verification, 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 GHG assertion: On-site verification and review of vouchers at the Kobe Works and Hyogo Works, and performance of analytical procedures and interviews at the Kobe head office for the other sites in the scope of verification.

The criteria for this review are based on the calculation rules and procedures of Greenhouse Gas Emissions and Scope3 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 GHG assertion (Scope 1: 175,879 t-CO_2, Scope 2: 326,131 t-CO_2, Scope 3: 92,828,541 t-CO_2) was not calculated and reported in conformance with the criteria.

SGS Japan Inc. affirms our independence from the organization, being free from bias and conflicts of interest with the Organization.

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

Signed: