

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

① 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

② 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

③ 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 will emphasize greater efficiency in painting and metal processing and treatment, and also introduce alternatives to current paints and chemical substances.

In fiscal 2017, we achieved our reduction targets for major VOCs. Although we reduced hazardous heavy metals, use of dichloromethane increased, so we were not able to reach our target.

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).

Responding to the ELV Directive¹, the RoHS Directive², and the REACH Regulation³

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

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

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

Kawasaki practices CSR procurement and responds to requests from customers to gather chemical substance information. In addition, the Motorcycle & Engine Company has created the Kawasaki Material Data System II⁴ to collect data about chemical substances and respond to REACH and other applicable chemical substance regulations.

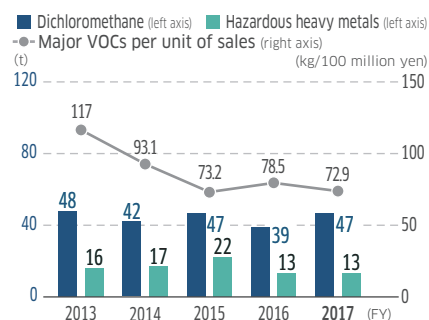


Figure 13: Emissions and Handling Volume of Managed Chemical Substances

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.

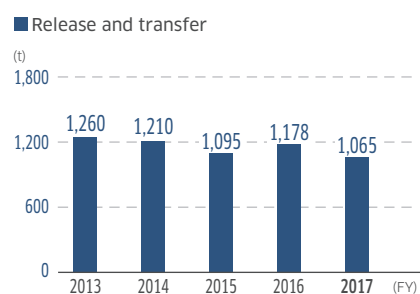


Figure 14: Release and Transfer of Chemical Substances Designated under the PRTR Law*

*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/guideline.html>

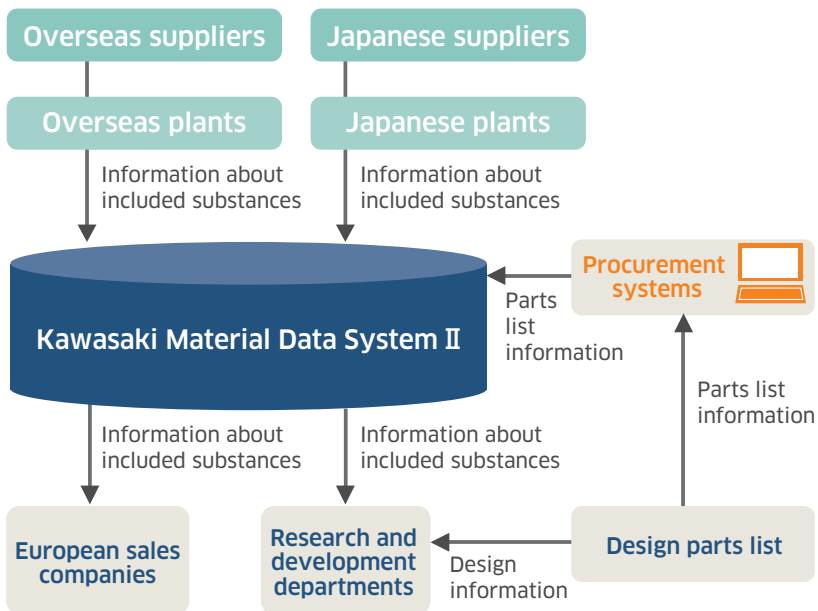


Figure 15: Response to REACH by the Motorcycle & Engine Company

*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 2017, we began sales in Europe of Z900, a model that exemplifies our efforts to achieve cleaner exhaust gas from motorcycles on a world-caliber level.

In addition to securing the top level of output in its class, this model realizes the world's highest level of environmental performance by achieving both top results in fuel performance and low exhaust emissions. By maintaining low levels of exhaust emissions, such as CO and NOx, it is compliant with both EUROIV, European emission regulations, and R41-04, Europe's new noise emission regulations, it becomes part of our efforts toward enhanced environmental performance.



Figure 16: Z900 (overseas model)

Promoting the 3Rs

Since October 2004, we have operated an independent motorcycle recycling system in cooperation with three other motorcycle manufacturers and 12 importers in Japan. In fiscal 2017, we achieved a recycling rate of 97.5%. Since October 2011, the user burden of recycling costs has become completely free of charge.

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

Reducing and Eliminating Environmental Substances of Concern

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

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

Conserving Water

Kawasaki has set reduction targets on a per unit of sales basis for the effective use of water. In fiscal 2017, while we made progress on measures to repair leaks at factories, water consumption per unit of sales increased 2.3% year on year due to an increase in usage, mainly for hydrostatic testing of tanks.

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 1,700 people, and approximately 2,600 trees consisting of 45 varieties, including Japanese red pine, konara oak, and mountain cherry have been planted.

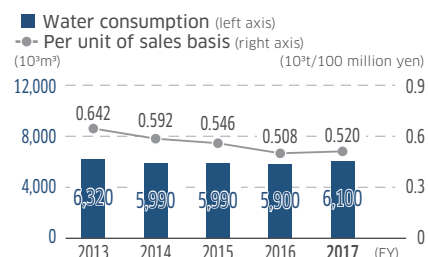


Figure 17: Water Consumption and Per Unit of Sales Basis

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



Figure 18: Number of Planted Trees by Fiscal Year

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.

Table 5: Fiscal 2017 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 (275 people)	Employees and others (69 people)
Achievements	Area: 1.0ha CO ₂ absorbed: 2.20t/CO ₂ Trees planted: 317	Area: 0.3ha CO ₂ absorbed: 16.5t/CO ₂
Number of events	Three times a year	Once a year

Biodiversity-Friendly Society

In addition to activities for creating corporate forests, we have embraced collaborative opportunities with local groups from the perspective of biodiversity, including cleanup events and greening programs around our business locations.

In fiscal 2017, we conducted aquatic life habitat surveys on idle land in Nishi-ku, Kobe, in Hyogo Prefecture, as a new initiative. As a result, we observed the habitats of five species of fish, including *pseudorasbora parva* and the important species, *misgurnus anguillicaudatus*, *oryzias latipes*, and *rhinogobius sp. BF*. It is believed that these species are already reproducing (breeding) at that location.

As there are no specific introduced species such as bluegill, this pond was confirmed to be functioning as a living environment for rare fish in accordance with the local ecosystem. Going forward, we are planning to conduct surveys on benthic animals and plants, in order to assess the current state of biodiversity at the site. Through such efforts, we are considering how to achieve environmental harmony in local communities.



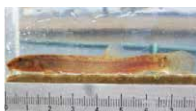
Figure 19: Pond where the surveys were conducted



Figure 20: Casting a net for the survey



Pseudorasbora parva



Misgurnus anguillicaudatus



Oryzias latipes



Rhinogobius sp. BF

Figure 21: Representative species found

Table 6: Applicability of Important Species Selection Criteria

Species Name	Red List of the Ministry of the Environment	Red Data Book of Hyogo Prefecture
<i>Misgurnus anguillicaudatus</i>	✓	✓
<i>Oryzias latipes</i>	✓	✓
<i>Rhinogobius sp. BF</i>	✓	✓