

Achieving a Harmonized Society with Nature

Hitachi's Approach

The ecosystem furnishes humankind with a range of benefits, not only supplying the natural resources required for people's food, clothing, and shelter and for economic activity but also reducing damage from natural disasters and absorbing greenhouse gases. Human economic activity, though, is resulting in the consumption of natural resources at a faster pace than can be restored through nature's recuperative powers, and this is having a serious impact on ecosystem services.

Hitachi not only promotes ecosystem preservation but also undertakes thoroughgoing management of chemical substances that may affect the ecosystem and seeks to achieve a harmonized society with nature that minimizes impact on natural capital. We have created an Ecosystem Preservation Activities Menu covering the entire value chain to guide our preservation initiatives and are promoting design and production activities that reduce the burden on the ecosystem throughout the product life cycle, in addition to carrying out environmental conservation activities as needed. In managing chemical substances, we adhere to laws and regulations in all countries and regions where we do business, as well as establishing our own in-house criteria to enable stringent and high-level management. These efforts are aimed at minimizing the burden our activities place on natural capital.

Chemical Substances

Managing Chemical Substances

In fiscal 2005, Hitachi formulated the Regulations for Environmental CSR-Compliant Monozukuri to manage the chemical substances contained in its products at all stages—from development and design, procurement, and production to quality assurance and sales. With regard to chemical substances used in our business operations, we manage risk by assigning three ranks to the use of such substances: prohibition, reduction, and control. We also reduce risk by educating chemical substance handlers and managers on laws and regulations and on proper risk assessment.

Managing Chemical Substances in Our Products

To ensure compliance with Europe's REACH*¹ and other regulations, we continuously revise the list of chemical substances in our products that are to be managed. In October 2015, we modified the list of Voluntarily Controlled Chemical Substances so that 18 prohibited substances (Level 1) and 27 controlled substances (Level 2) are now listed.

Hitachi reviewed its Green Procurement Guidelines to reflect our new Environmental Vision, and in October 2016 we issued a revised edition. Furthermore, as a result of the amendment of China's RoHS*² in July 2016, we conducted an explanatory meeting in China, and 37 employees from 10 business units and Group companies participated in the event.

*1 REACH: The European Union regulation on Registration, Evaluation, Authorization, and Restriction of Chemicals.

*2 China's RoHS: The Administrative Measures for the Restriction of the Use of Hazardous Substances in Electrical and Electronic Products, which is similar to Europe's RoHS directive, is China's regulation to restrict the use of these substances in electrical and electronic products.

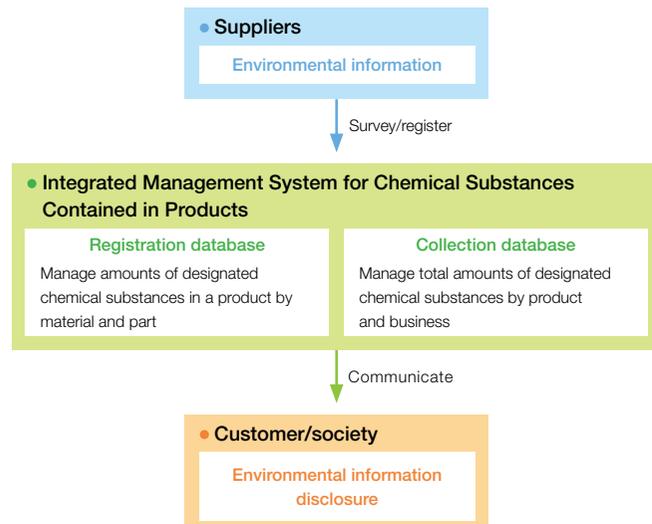


Hitachi Group's Voluntarily Controlled Chemical Substances

► Working with the Supply Chain to Manage Chemical Substances

Working closely with suppliers and customers, we gather and make available information on chemical substances across the supply chain via the Integrated Management System for Chemical Substances Contained in Products, which has been in operation since fiscal 2005. As of March 31, 2017, chemical substance information for more than 1.31 million parts and products was registered under this integrated management system. In fiscal 2016, we upgraded our system to respond to the shared information transmission scheme (chemSHERPA) on chemical substances contained in products.

Integrated Management System for Chemical Substances Contained in Products



Managing Chemical Substances in Our Business Operations

We have been cutting emissions of chemical substances from our factories and other sites through stricter management, such as by expanding the number and scope of controlled chemical substances. Initiatives in fiscal 2016 to reduce emissions of volatile organic compounds (VOCs) included switching from VOC-containing paints to water-soluble and powder paints as well as expanding their use, changing to material components that require no coating, and altering washing processes. These efforts enabled us to successfully achieve our targets. Information on our efforts has been translated into English and Chinese and shared globally with Hitachi Group members. We also monitor and manage emissions of sulfur oxides (SOx) and nitrogen oxides (NOx),*1 which are required to be measured under the laws and regulations applicable at our business locations.

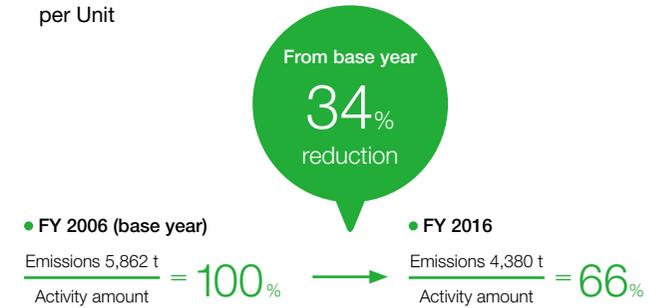
We comply with Japan's Pollutant Release and Transfer Register (PRTR) Law*2 through Group-wide monitoring of chemical substances released into the atmosphere or into public waters, removed outside our plants as waste, or discharged into sewage systems, reporting the results to local governments for each office or plant. Although some substances are exempt from reporting due to their small quantities, our policy is to keep data on the handling, emission, and transfer of all PRTR substances totaling 10 kilograms or more per year, recognizing the need to control these substances as well.

*1 Emissions of SOx and NOx: Calculated by multiplying their concentration and exhaust volume.

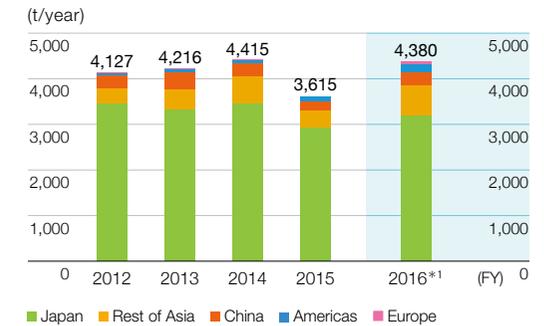
*2 PRTR Law: Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof.

Key Indicators

Reduction in Atmospheric Emissions of Chemical Substances per Unit



Reducing Atmospheric Emissions of Chemical Substances



Breakdown by Region (t/year)

	(FY)				
	2012	2013	2014	2015	2016*1
Europe	6	8	12	9	57
Americas	53	76	66	113	187
China	273	372	281	199	291
Rest of Asia	346	447	604	373	662
Japan	3,449	3,313	3,452	2,921	3,183
Total	4,127	4,216	4,415	3,615	4,380

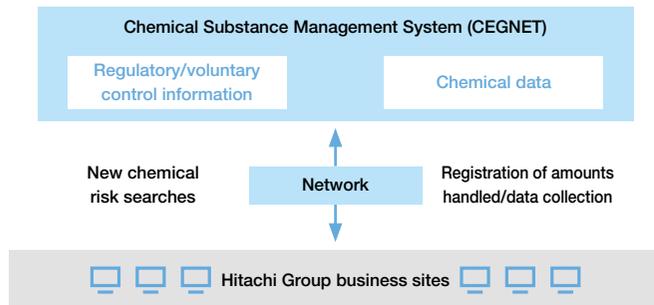
*1 In fiscal 2016, the scope of controlled chemical substances was expanded from 41 to 50 substances.

Note: Atmospheric emissions of VOCs and other chemical substances are calculated from the content rate included in the ingredients.

The CEGNET Chemical Substance Management System

To ensure the proper management of chemical substances used in its business operations, Hitachi has operated a database for chemical substance management called CEGNET since 1998 to keep track of the latest laws and regulations and the company's own voluntary regulations.

CEGNET also collects and aggregates data on the amount of chemical substances handled, emitted, and transferred in our operations, helping to reduce the volume of chemicals that we handle.



Managing Storage of Equipment Containing PCBs

Equipment that uses polychlorinated biphenyls (PCBs) and PCB waste materials are systematically disposed of within the time limit established by the national government of Japan. The storage and disposal of PCBs within the Group are monitored every year to promote efficient disposal. In fiscal 2016, disposal was completed for PCB waste materials stored at 55 business sites.

Next Steps

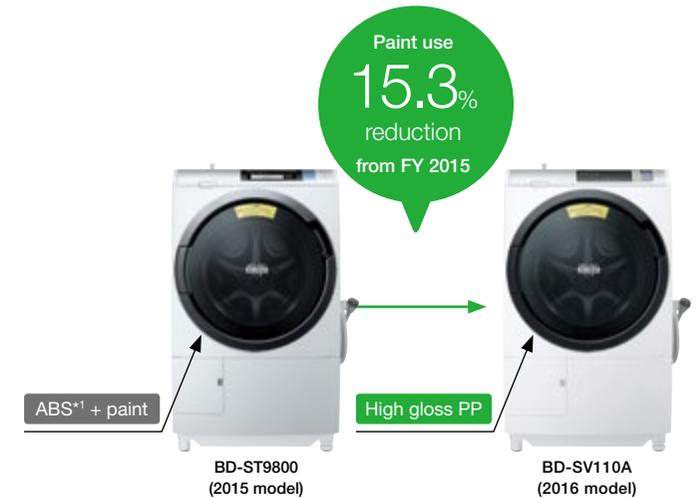
In connection with Europe's REACH regulation, we will continue our checks and preparations in the lead-up to the next round of notification deadlines. As in fiscal 2016, we will continue our initiatives to reduce the release of regulated chemical substances.

Reducing Chemical Substances in Our Business Activities

▶ Promoting Paintless Parts by Switching to New Materials (Hitachi Appliances, Inc.)

Hitachi Appliances' Taga Works manufactures washing machines, vacuum cleaners, microwave ovens, rice cookers, and other home appliances; IH cooking heaters and other all-electric appliances; and products in new environmental fields, such as LED lighting and residential photovoltaic power generation systems.

The Taga Works is currently promoting paintless parts for design accents, such as by switching to high gloss polypropylene (PP) for the design elements on its front load washing machines. This has reduced the amount of paint used in painting by 15.3% (9.6 t/year) compared with fiscal 2015, contributing to a reduction in the release of chemical substances.



Paintless Parts for the Design Elements of Front Load Washing Machines

*1 Acrylonitrile butadiene styrene.

Preserving Ecosystems

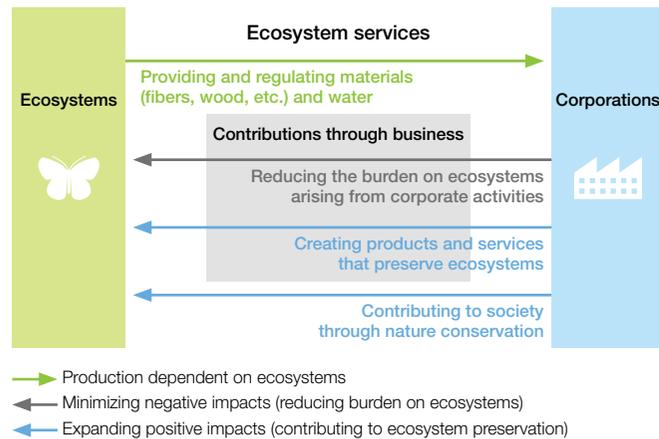
Corporate Relationship with Ecosystems

Corporations depend on "ecosystem services," including the natural supply of materials like fibers and wood, and the ability of ecosystems to maintain the quality and quantity of air, water, and soil. Contributing to ecosystem preservation through both business and social activities enables companies to continue receiving these benefits and to restore ecosystems.

Through its business activities, Hitachi is promoting designs and production methods that reduce the impact on ecosystems throughout the product life cycle. We are also increasing the number of products and services that directly help preserve

ecosystems, such as water purification measures. We view chemical substance management as part of ecosystem preservation and continually ensure that it is carried out correctly. To contribute to society, we encourage employee volunteer programs, such as tree planting and ecological surveys of rare plants and animals, as well as other programs that preserve ecosystems.

Corporations and Ecosystems



Initiatives to Preserve Ecosystems

In fiscal 2016 Hitachi created an Ecosystem Preservation Activities Menu citing the specific activities to be undertaken to promote the preservation of the ecosystem. We are encouraging each business site to advance their own initiatives. This menu was created by adding the pioneering activities of other corporations and organizations to the list of items that had already been subject to assessment since fiscal 2010. It consists of 116 items covering all aspects of our business operations, including the value chain. Each business site selects those

activities it plans to launch from the menu, and the total number of initiatives becomes Hitachi's target for ecosystem preservation. In fiscal 2016, 144 new initiatives were launched, far in excess of our initial goal of 30.

In the long term, we seek to minimize the impact on natural capital and realize a harmonized society with nature by minimizing the burden (negative impact) on the ecosystem caused by business activities and maximizing the positive impact, such as by undertaking social contribution activities to protect nature and providing products and services that preserve the ecosystem.

Regarding impact and other ecosystem preservation assessments, we are deliberating the matter not only within the Group but also through our participation in activities outside the company, such as the biodiversity working group of four Japanese electrical and electronic industry associations*1 and the Japan Business Initiative for Biodiversity (JBIB).

*1 The Japan Electrical Manufacturers' Association (JEMA), Japan Electronics and Information Technology Industries Association (JEITA), Communications and Information Network Association of Japan (CIAJ), and Japan Business Machine and Information System Industries Association (JBMA).



Ecosystem Preservation Activities Menu

Category	Activities Taken	Number of Items	
Business sites	Production	Reducing use of resources that cannot be reused	4
	Transportation	Using packaging that takes ecosystem into consideration	7
	Collection, disposal, and recycling	Reducing hazardous materials in products	2
	Product planning, development, and design	During R&D, estimating impact on biodiversity during a product's life cycle and implementing, if needed, mitigation measures	3
	Site management	Using native species, setting up biotopes	17
	Water use	Using rainwater	1
Value chain	Investment and acquisition	Confirming impact on biodiversity when investing in or acquiring a business, and implementing measures to minimize such impact	1
	Market entry and expansion	Including biodiversity as an investment criterion	1
	Business development	Developing products and services to purify water, air, and soil and expanding such businesses	1
	Procurement	Preferentially procuring paper and other office supplies that take biodiversity into consideration	17
	Transportation	Implementing ballast water measures during marine transportation	2
	Sales	Implementing sales expansion of products that take biodiversity into consideration	9
	Collection, disposal, and recycling	Reusing and recycling components	7
	Entire value chain	Promoting the use of renewable energy	1
	Community	Engagement	Promoting employee activities outside the company
Social contribution		Implementing desert greening and afforestation activities	12
Water use that takes watershed ecosystem into consideration	Water intake	Observing and collecting biota information (impact on ecosystem depending on intake volume)	14
	Water discharge	Setting up biota management indicators and making observations (species and numbers of inhabiting organisms)	14

Next Steps

For fiscal 2017, we have set a target of implementing 150 new initiatives in accordance with the Ecosystem Preservation Activities Menu and will continue to further promote ecosystem preservation activities throughout the Group.

Ecosystem Preservation Activities

Hitachi Group Forestation Activities

Working together with employees and their families, the Hitachi Group participates in the Japanese Forestry Agency's Corporate Forest Program to preserve forests in several locations.

► Yuyu Forest (Hitachi Power Solutions Co., Ltd.)

Hitachi Power Solutions has been conducting tree-planting activities since 2007 in the Yuyu Forest in the city of Takahagi in northern Ibaraki Prefecture. Each year employees and their families gather to plant trees, clear underbrush, prune, and perform other forest maintenance activities under the guidance of the Ibaraki District Forest Office and Takahagi's forestry cooperative. These events also include environmental education, handicraft classes using pruned materials, and other activities that employees' families can enjoy together as they create healthy forests.

- Tree-planting area: 10 ha
- Number of trees planted: 31,510
- Total number of participants: 2,016



► Yasato Forest (Hitachi High-Technologies Corporation)

Hitachi High-Technologies embarked on a 60-year plan in 2005 to cultivate trees in the Hitachi High-Tech Yasato Forest in the city of Ishioka in southern Ibaraki Prefecture. Employees and their families participate in the work of pruning and thinning to grow a healthy forest.

- Tree-planting area: 2.32 ha
- Number of trees planted: 5,600
- Total number of participants: 1,387



Mangrove Seed Collection and Tree-Planting (Hitachi Terminals Mechatronics Philippines Corporation)

In June 2016 Hitachi Terminals Mechatronics Philippines (HTMP) planted 883 seedlings grown from mangrove seeds collected in advance to protect and grow the mangroves remaining in the Subic Bay special economic zone where its factory is located.

Mangrove forests are a valuable part of the natural ecosystem in the Philippines, but at the same time the mangrove ecosystem is fragile and requires protection. HTMP has conducted tree-planting activities for some time, but in fiscal 2016 it expanded its activities to collecting seeds from mangrove plants and raising seedlings. HTMP will continue to be actively involved in ecosystem preservation.



Collecting seeds from mangrove plants.