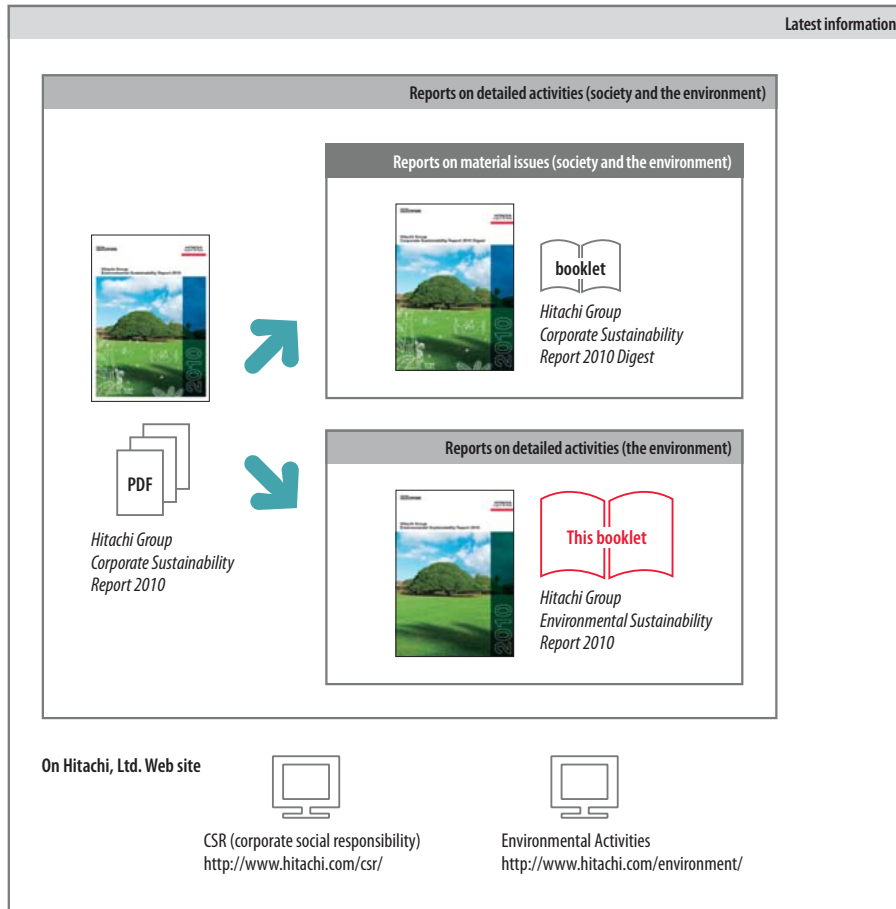


# Hitachi Group Environmental Sustainability Report 2010



2010

## Environmental Activity Reporting Policy



The Hitachi Group discloses information on CSR activities according to reader interest: the *Hitachi Group Corporate Sustainability Report 2010 Digest* presents important management issues that are of particular social interest and the *Hitachi Group Environmental Sustainability Report 2010* is for stakeholders tracking environmental activities. The Hitachi Web site discloses more detailed information and the latest activities as well as the full *Hitachi Group Corporate Sustainability Report 2010*, published in PDF format, complementing the above reports.

### Related Reports

We report on the financial performance of Hitachi, Ltd. in the "Financial Highlights" and Annual Report.

#### [Period]

The main period covered is fiscal 2009 (April 1, 2009 through March 31, 2010)

#### [Companies]

Hitachi, Ltd. and 900 consolidated subsidiaries (including modified entities to which the equity method of consolidated reporting applies): total 901 companies

#### [Scope of data]

**Environmental data** Hitachi, Ltd. and 900 consolidated subsidiaries (including modified entities to which the equity method of consolidated reporting applies): total 901 companies. However, for environmental load data generated through business operations, companies that cover 90% of the load (based on Hitachi calculations)

**Financial data** Hitachi, Ltd. and 900 consolidated subsidiaries (including modified entities to which the equity method of consolidated reporting applies) and 157 affiliated companies that use the equity method

#### Guidelines Referred to in Preparing This Report

"Environmental Reporting Guidelines" (2007), Ministry of the Environment, Japan

"Environmental Reporting Guidelines 2001—With Focus on Stakeholders," METI, Japan

GRI Sustainability Reporting Guidelines (G3), Global Reporting Initiative

\*This environmental sustainability report is published annually.

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Targets and Results

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Conservation of Resources  
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Major Fields of Business and Products

### Initiatives That We Participate in

A member of the United Nations Global Compact since February 2009



WE SUPPORT

A member of the World Business Council for Sustainable Development since 1995




World Business Council for Sustainable Development

### External Evaluations

We were selected in September 2009 for the Dow Jones Sustainability World Indexes (DJSI World), one of the world's leading social responsibility investment fund indexes. We were also awarded the Silver Class in the Sustainable Asset Management (SAM) *Sustainability Yearbook 2010*.



### Symbol Marks Used in This Booklet

- † Technical terms, proper nouns, etc., in the text requiring explanation
  - \* Additional explanation of terms, etc., in tables or diagrams
  -  Indicates the title and URL of the Web page related to the article  
All pages can be accessed from <http://www.hitachi.com/environment/data/>
-

# A More Sustainable Society through Our Actions, Products and Services

## Environmentally Conscious Management

The Hitachi Group's environmental management aims to mitigate climate change, resource depletion, ecosystem destruction and other increasingly serious global-scale threats to the environment. Pursuing our Environmental Vision based on three pillars—*prevention of global warming, conservation of resources, and preservation of ecosystem*—we are providing the world with products and services that contribute to environmental conservation, while conducting business globally in ways that reduce our environmental burden.

In a major management restructuring in October 2009, we introduced an in-house company system that gives business groups and subsidiaries the same responsibilities and authority as listed Group companies. Under the new structure, each in-house company and Group company is putting its own strengths to work, with the Hitachi, Ltd. Group corporate divisions exercising leadership, as we take environmentally conscious corporate action.

Sustainable corporate management cannot be achieved by our efforts alone. It can only be realized by building a solid partnership with our stakeholders. Through dialogue and collaboration with stakeholders, we are discovering what is expected of the Hitachi Group, and we are working to propose and provide the best solutions globally.

## Our Achievements in 2009

Undaunted by the difficult economic situation during fiscal 2009, we combined the strengths of the Group to realize our Environmental Vision, as outlined below.

## Contributing to Environmental Conservation through Business

In November 2009, China's National Development and Reform Commission (NDRC) and the Hitachi Group signed a memorandum of agreement on "friendly collaboration for the establishment of a low-carbon society and resource recycling." Hitachi will cooperate with China in such areas as power generation, smart grids, water treatment and recycling, and urban transportation, to help China with its energy-saving and environmental conservation initiatives. In the UK in December, Hitachi's aluminum rolling stock—achieving high energy efficiency through reduced weight and other improvements—went into operation on a high-speed railway line. Also, we reached an agreement with a Canadian electric power company in February 2010 for research and development, cooperating with them on carbon capture and storage (CCS) and other low-carbon technologies. These are a few examples of how we are providing environmental solutions for our customers.

## Promoting Sustainable Corporate Activities

We have achieved all the targets in our Environmental Action Plan for fiscal 2009. Sales of environmentally conscious Eco-Products were 53 percent of all sales, bettering the 48 percent target. We reduced the levels of CO<sub>2</sub> emissions from our corporate activities by 21 percent in Japan (from fiscal 1990 levels) and by 5 percent outside of Japan (per unit of production, compared with fiscal 2003 levels). We are also improving the effectiveness of global environmental management by

holding working-level regional environmental conferences in Europe and China.

### **Centennial Year Emphasis: Social Innovation Business**

The year 2010 is our centennial year. As we take the initial steps toward the next 100 years, we would like to make major contributions to society through our social infrastructure projects and our technology, in keeping with the original purpose of the company. This year will see the global deployment of what we call “social innovation business,” or providing environmentally conscious, highly advanced public infrastructure based on information and communication systems technology.

In October 2010, the 10th Conference of Parties (COP 10) to the Convention on Biological Diversity will meet in Nagoya; while the 16th COP on the United Nations Framework Convention on Climate Change (COP 16) will meet in Mexico later in the year. The discussions at these conferences will focus on global initiatives and goals for preserving biological diversity, as well as the international framework and targets for reducing CO<sub>2</sub> emissions in 2013 and after.

Ever mindful of these international concerns, we will finalize our third environmental strategy during fiscal 2010 and draw up environmental action plans for the five years from fiscal 2011. Based on our Environmental Vision, we pledge to renew our commitment to implementing world-leading, assertive plans for managing the environment.

July 2010



Takashi Hatchoji  
Executive Vice President, Hitachi, Ltd.  
Hitachi Group Chief Environmental Strategy Officer

Toward the Resolution of Global Environmental Issues

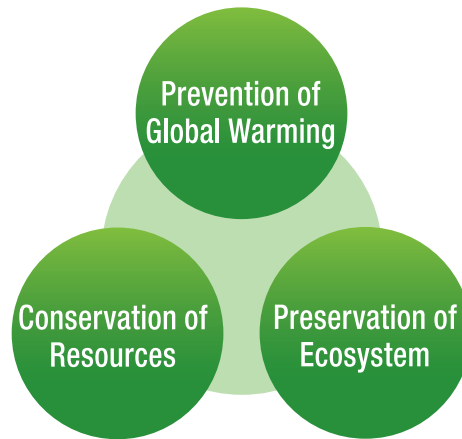
# Three Environmental Pillars of Our Vision: Prevention of Global Warming, Conservation of Resources, and Preservation of Ecosystem

The quest for a comfortable life has led humankind to create a society based on convenience. However, environmental problems have surfaced, such as climate change, resource depletion, and ecosystem destruction. To realize a material-cycle society in harmony with the earth, we must share our vision and promote environmental conservation.

We have created an environmental vision to achieve a more sustainable society by promoting global production that reduces the environmental burden of a product throughout its life cycle. We have formulated Environmental Vision 2025, a long-term plan placing priority on preventing global warming, and we are conducting our business activities accordingly.

The Hitachi Environmental Vision

Reduce CO<sub>2</sub> emissions in energy production  
Enhance energy efficiency of our products



Collect products for reuse or recycling

Reduce negative effect on air, water and soil

## Towards a Sustainable Society

Standards of Corporate Conduct—Fundamental Credo

Adopted June 1983



CSR Policy of the Hitachi Group

Adopted March 2005



Hitachi Action Guidelines for Environmental Conservation (Summary)

1. Assist to realize a sustainable society as a management priority.
2. Contribute to society through technologies and products taking into account the prevention of global warming, conservation of resources, and preservation of the ecosystem.
3. Members of the board in charge of environmental conservation are responsible for promoting appropriate environmental conservation activities.
4. Promote globally applicable *monozukuri* with the aim of reducing environmental burdens.
5. Introduce excellent technologies and materials useful for safeguarding the environment, i.e. in terms of energy and resource saving, recycling, consideration for the ecosystem, etc.
6. Conserve the environment by observing environmental regulations and implementing voluntary environmental standards.
7. Regarding globally applicable *monozukuri* activities, consider the environmental impact on the local community.
8. Educate employees regarding global environmental conservation activities.
9. Evaluate potential environmental problems and prevent them from occurring.
10. Make efforts to disclose information on environmental conservation activities to stakeholders.

Adopted March 1993 (revised July 2010)

To realize our Environmental Vision, we promote activities in accord with the Hitachi Action Guidelines for Environmental Conservation. These guidelines are based on the corporate credo of contributing to society through the development of superior, original technology and products as stated in the Standards of Corporate Conduct.

Standards of Corporate Conduct—Fundamental Credo

CSR Policy of the Hitachi Group

Hitachi Action Guidelines for Environmental Conservation

## Environmental Vision 2025

We will help reduce annual CO<sub>2</sub> emissions by 100 million tonnes by 2025 through Hitachi products and services for the prevention of global warming.

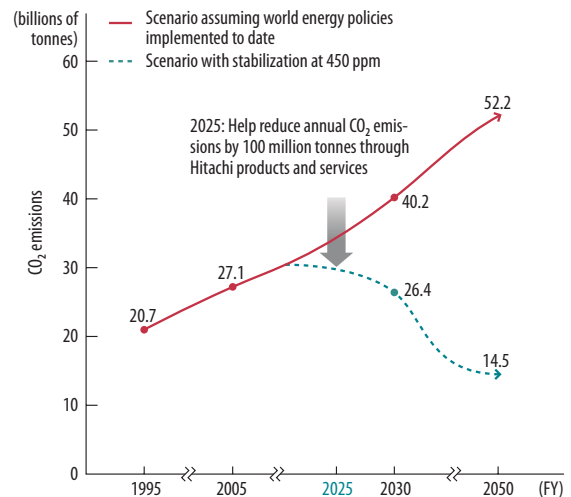
### Philosophy of Environmental Vision 2025

The Fourth Assessment Report of the IPCC<sup>†1</sup> states that it is necessary to maintain greenhouse gas emissions at about 450 ppm (parts per million) to keep global temperatures from rising two degrees or higher than before the Industrial Revolution. To meet this goal, the International Energy Agency has presented a scenario for halving CO<sub>2</sub> emissions by 2050 compared with 2005 levels and stabilizing them at 450 ppm.

To contribute to the prevention of global warming, we created Environmental Vision 2025 as a long-term plan for our business activities. With 2005 as the base fiscal year, our goal is to help reduce annual CO<sub>2</sub> emissions by 100 million tonnes by 2025 through Hitachi products and services. To this end, we will boost the environmental efficiency of Hitachi Group products and aim to make them all Hitachi Eco-Products (see page 21).

†1 Intergovernmental Panel on Climate Change

### Concept behind Hitachi's Fiscal 2025 CO<sub>2</sub> Emission Reduction Goal



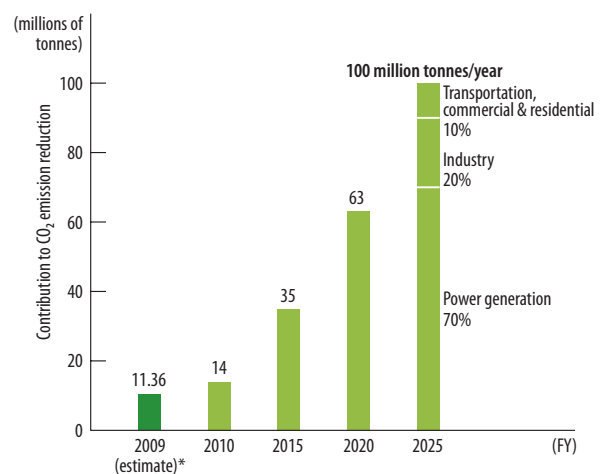
Based on energy-related CO<sub>2</sub> emissions in the International Energy Agency's World Energy Outlook 2009

### Reducing CO<sub>2</sub> Emissions through Products and Services

To help reduce annual CO<sub>2</sub> emissions by 100 million tonnes, we will cut emissions by 70 million tonnes in the power sector by building nuclear power plants, improving the efficiency of coal-fired power generation, and promoting more renewable energy. For industries, we will reduce emissions by 20 million tonnes by introducing products such as high-efficiency inverters and transformers and by conserving energy such as in data centers. For the transportation, commercial, and residential sectors, we will reduce emissions by 10 million tonnes by developing lithium batteries for industry and cars and by reducing the energy used by home appliances.

In fiscal 2009, we formulated a calculation policy to reliably measure reduced CO<sub>2</sub> emissions within the Hitachi Group. Also, we received third-party reviews on our methods for calculating reduced CO<sub>2</sub> emissions and their results for 10 products, such as nuclear, coal-fired, and hydroelectric power generation products, servers, and energy-saving services using inverters (see page 39).

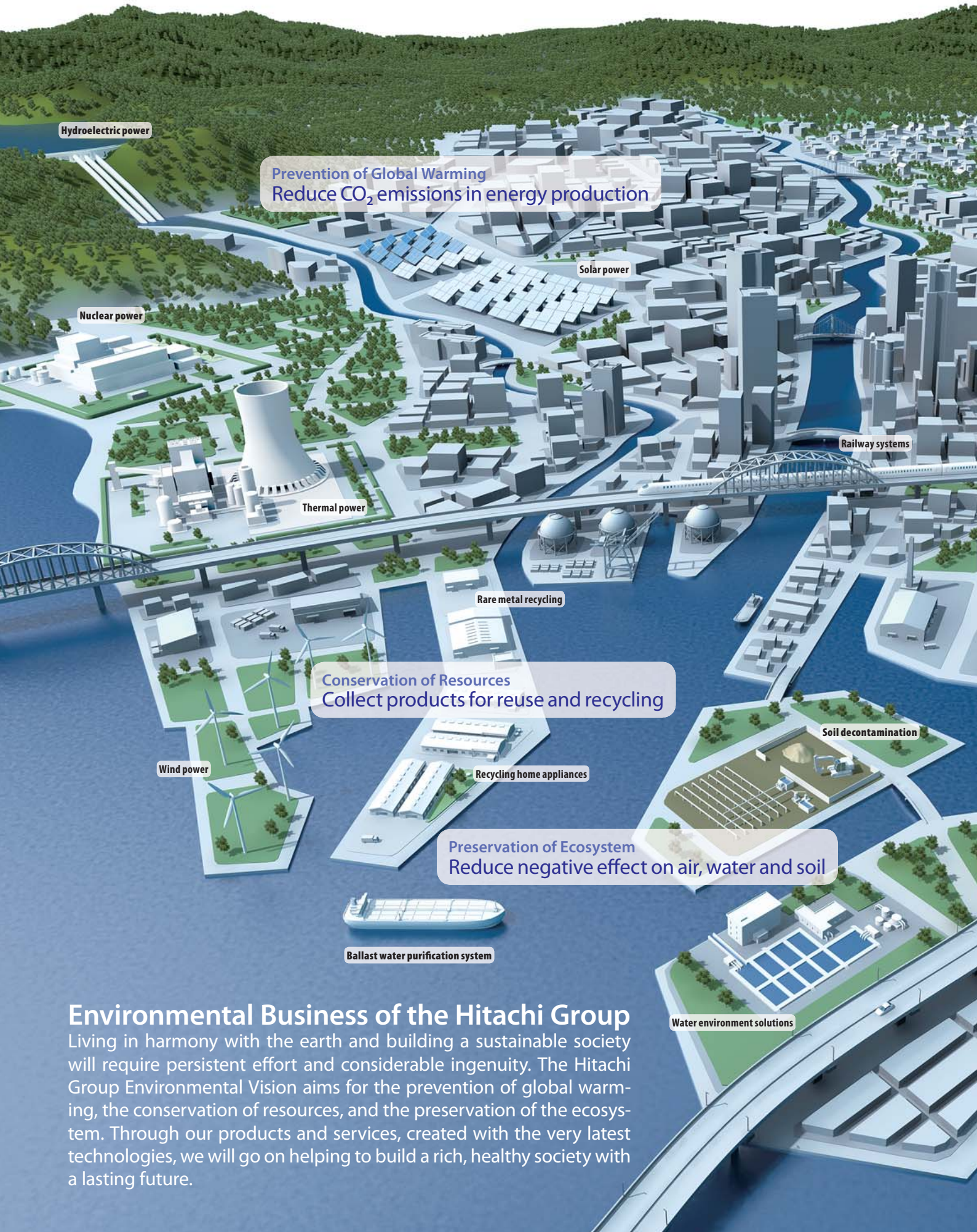
### Contributions to CO<sub>2</sub> Emission Reduction (Base: FY 2005)



\* CO<sub>2</sub> emission coefficients were calculated using 2007 figures from the International Energy Agency's CO<sub>2</sub> Emissions from Fuel Combustion Highlights (2009 Edition)

◆ Highlights ◆

# Contributing to Environmental Conservation



Prevention of Global Warming  
Reduce CO<sub>2</sub> emissions in energy production

Conservation of Resources  
Collect products for reuse and recycling

Preservation of Ecosystem  
Reduce negative effect on air, water and soil

## Environmental Business of the Hitachi Group

Living in harmony with the earth and building a sustainable society will require persistent effort and considerable ingenuity. The Hitachi Group Environmental Vision aims for the prevention of global warming, the conservation of resources, and the preservation of the ecosystem. Through our products and services, created with the very latest technologies, we will go on helping to build a rich, healthy society with a lasting future.



# through Business



Prevention of Global Warming  
Enhance energy efficiency of our products

## Prevention of Global Warming

**Nuclear power**  
→ Page 8



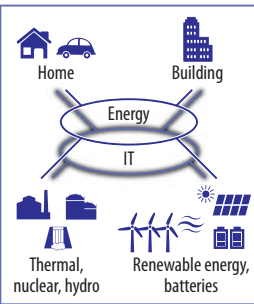
Chugoku Electric Power Company's  
Shimane Nuclear Power Station Unit 3

**Thermal power**  
In addition to building supercritical and ultra-supercritical pressure thermal power plants with improved generating efficiency, we are developing CO<sub>2</sub> capture and storage (CCS) and other low-carbon technologies



Evonik Steag GmbH  
Walsum Power Station Unit 10 (Germany)

**Smart grids**  
Building next-generation power transmission and distribution systems (smart grids) that use information technology to monitor power demand and supply, enabling effective use of renewable energy sources regardless of weather conditions



**Renewable energy**  
Involved in wind, solar, and hydro power generation equipment to control systems for stable distribution  
→ Page 8



Tokyo Electric Power Company  
Oghshima Solar Power Plant (tentative name)  
Artist rendering of completed plant

**Railway systems**  
→ Page 9



Class 395 (UK)

**Batteries**  
Batteries, including lithium-ion batteries for hybrid vehicles and lead batteries used for both industry and renewable energy applications



Lithium-ion battery  
for hybrid vehicles

**IT platforms**  
→ Page 9



Modular data center

**Consumer Products**  
Creating high value-added products—from consumer appliances to digital media products—with energy-saving and environmental technologies at the core



Front-loading washer-dryer

## Conservation of Resources

**Rare metal recycling**  
→ Page 10



Magnetic parts after dismantling

**Home appliance recycling**  
End-of-life appliances are dismantled and recycled to reuse resources



Air conditioner recycling

**Water environment solutions**  
→ Page 11



Bunus sewage treatment plant in Malaysia

**Ballast water purification system**  
→ Page 11



Test device onboard a tanker

**Soil decontamination**  
Cleaning contaminated sites using microorganisms to decompose hazardous substances naturally or using additives for a chemical reaction



Soil excavation

## Preservation of Ecosystem

# Prevention of Global Warming

Helping to reduce annual CO<sub>2</sub> emissions by 100 million tonnes by 2025 through products and services

## Nuclear Power

Generating electricity by nuclear power results in far fewer CO<sub>2</sub> emissions than burning fossil fuels at thermal power plants, proving nuclear power to be effective at preventing global warming. Using technologies accumulated from our involvement in nuclear power projects since 1957, we are taking part in the building and preventive maintenance of highly safe, reliable nuclear power plants in and outside Japan.

In fiscal 2009, we delivered a reactor pressure vessel and turbine to Chugoku Electric for Shimane Nuclear Power Station Unit 3. At the J-POWER Ohma Nuclear Power Station, set to begin operating in 2014, we are laying the foundations and making other preparations to install a reactor pressure vessel. We are also developing nuclear fuel cycle technology: recovering usable fuel from spent fuel and reusing it.



Chugoku Electric Power Company's Shimane Nuclear Power Station Unit 3

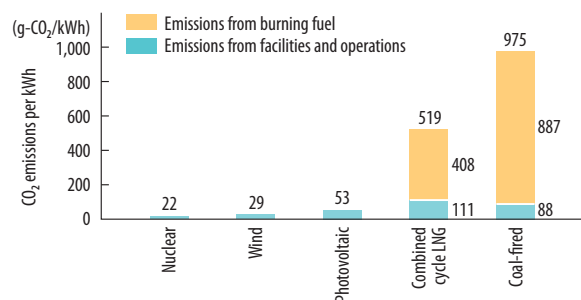
## Wind Power

Wind power is widely seen as clean, since it generates electricity without emitting CO<sub>2</sub>. To take advantage of terrain updrafts, we developed the world's largest downwind turbines. Also, our technology has more stable output in variable winds. Our strengths include having a wide range of technologies and equipment, as well as being a system integrator, to use these in products and services. In fiscal 2009, we delivered seven turbines for Wind Power Kamisu, an offshore wind farm owned by Wind Power Ibaraki Co., Ltd.



Wind Power Ibaraki Co., Ltd's Wind Power Kamisu

### CO<sub>2</sub> Emissions from Main Power Generation Methods



Sources: Central Research Institute of Electric Power Industry and others



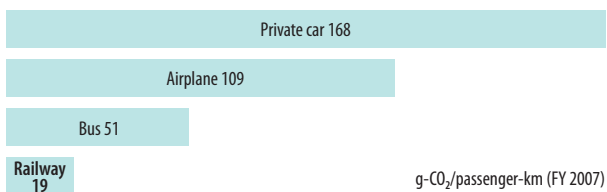
Class 395 high-speed train operating in the UK

## Railway Systems

Railways will continue to be seen as an environmentally important means of transportation. As a total railway systems integrator, we operate in a wide range of railway system businesses from rolling stocks and traction system to traffic management, signaling, and power supply, as well as information services.

Railway companies in and outside Japan have praised our hybrid traction system—combining a diesel engine with storage batteries to improve fuel efficiency and reduce harmful emissions—and our A-train, which uses aluminum to reduce weight and save energy. In fiscal 2009, toward more global operations, a Hitachi high-speed train based on the A-train began running in the UK; while in China, among other developments, we are delivering a train control system.

## CO<sub>2</sub> Emissions from Various Forms of Transportation



Source: Ministry of Land, Infrastructure, Transport and Tourism (Japan), *Reducing Global Warming in Transportation* (in Japanese)

## IT Platforms

With the increase in IT equipment, energy use by data centers has skyrocketed. We are tackling this issue in various ways: Our Harmonious Green Plan aims to reduce CO<sub>2</sub> emissions by 330,000 tonnes<sup>t1</sup> over the five years from fiscal 2008 by making IT equipment more energy efficient. Furthermore, the CoolCenter50 Project seeks to reduce data center power use by as much as 50 percent from 2007 levels by 2012. As part of these initiative, we have developed a modular data center that optimizes the layout of air conditioners and IT equipment for both cooling efficiency and space savings. Power use by air conditioners that cool servers is cut by up to 67 percent<sup>t2</sup> and CO<sub>2</sub> emissions are reduced. After completing test operations in fiscal 2009, we have started marketing this new data center solution to corporate customers.



Modular data center

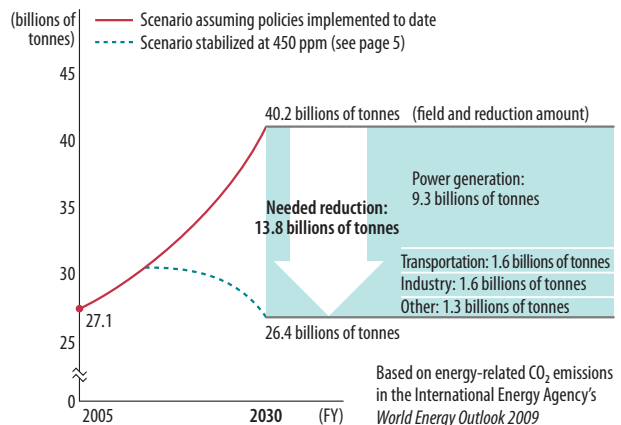
- <sup>t1</sup> This calculation is based on the assumption that the annual number of IT appliances that Hitachi will ship is equal to the actual figure for fiscal 2007 every year, staying unchanged over the five-year period from fiscal 2008. This figure shows the difference in the amount of CO<sub>2</sub> emissions from the total amount that would be emitted if this plan were not implemented.
- <sup>t2</sup> Calculations are based on survey data in the Japan Electronics and Information Technology Industries Association (JEITA), Survey Report on IT Trends (June 2009) (in Japanese)

## Present State of the Environment

### Curbing Global Warming

In tandem with the economic development of nations and regions around the world, CO<sub>2</sub> emissions—a major cause of global warming—have been increasing. According to the International Energy Agency (IEA), these emissions are on pace to reach 40.2 billion tonnes annually by 2030. Global warming can cause drought, severe heat, floods and other problems. If it worsens, abnormal weather patterns may lead to rising disease and death rates. To avoid these consequences, technological innovation is needed to reduce energy-related CO<sub>2</sub> emissions in such fields as the power generation and transportation systems that support everyday life.

### Scenarios for World Energy-Related CO<sub>2</sub> Emissions

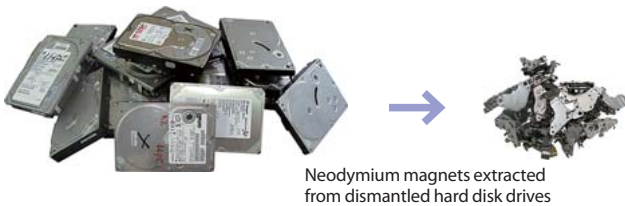


# Conservation of Resources

Reinforcing recycling of rare metals and other mineral resources as well as R&D for alternative materials

## Rare Metals Recycling

Among rare metals, rare earths<sup>f1</sup> are widely used in high-tech and energy-saving products—such as electric motors in hybrid cars and hard disk drives—due to their ability to generate strong magnetic power; they can also be used at very high temperatures. Today, stable supply of rare earths is becoming a problem: China produces approximately 97 percent of these and demand continues to grow. We manufacture products such as home appliances and medical equipment that use the rare earth neodymium (Nd). In fiscal 2009, with assistance from METI,<sup>f3</sup> we began developing technology for separating and recovering rare earth magnets from end-of-life products. Following feasibility tests, we hope to start full recycling operations by 2013.



- f1 **Rare earths:** 17 elements including lanthanum and scandium. Rare earth magnets are magnetic alloys of rare earth elements such as neodymium and dysprosium.
- f2 Calculated using data from U.S. Geological Survey, *Mineral Commodity Summaries 2010*
- f3 Japan's Ministry of Economy, Trade and Industry launched a project to promote recycling of resources in fiscal 2009. The project's goal is to find technology for recycling rare earth metals from "urban mines," such as high-performance magnets from motors.
- f4 Permanent magnet motor

## Hitachi Group Products That Use Neodymium Magnets



Air conditioners\* (compressor)



Washing machines (drum motor)



Refrigerators\* (compressor)



Hard disk drives (voice coil motor, spindle motor)



Industrial motors (PM motor<sup>f4</sup>)



Permanent magnet open MRI scanner (gantry: ring where magnetic field is generated)

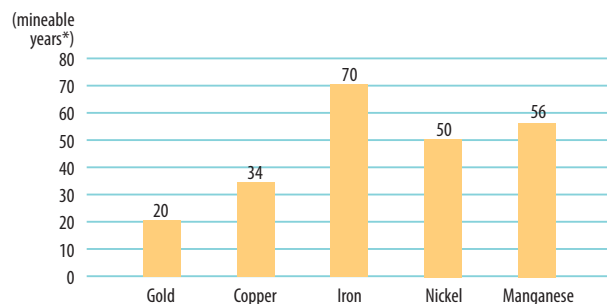
Parts in ( ) use magnet materials  
\* Not all models

## Present State of the Environment

### Risk of Resource Depletion

Reserves of metals, which are natural resources, are limited. Given their increasing use due to global economic development, shortages are likely to get worse in the near future. The inability to obtain stable supplies of resources will affect industry in many ways, including price hikes, making resource recycling all the more important.

### Mineable Years of Metal Resources (based on fiscal 2009 data)



Based on data from U.S. Geological Survey, *Mineral Commodity Summaries 2010*  
\* Mineable years = reserves/annual production

# Preservation of Ecosystem

Helping preserve the ecosystem by cleaning air, water, and soil



Bunus sewage treatment plant in Malaysia



ClearBallast system being tested on an oil tanker

## Water Environment Solutions

Conserving the water environment is essential for protecting the ecosystems that can be affected by human water use and disposal. In addition, since many countries face severe water shortages, providing water and sewage facilities, as well as water treatment is an international issue. As a comprehensive water environment solution provider, we work on the wider availability of sewage treatment systems—restoring water to its natural state—as well as circulating systems for water regeneration. Examples include participating in large sewage treatment plants in Malaysia, helping improve their water supply, and working on a pilot water circulation project in the United Arab Emirates. Our water solutions extend to local flood control and water treatment systems for removing toxic substances.

## Ballast Water Purification System

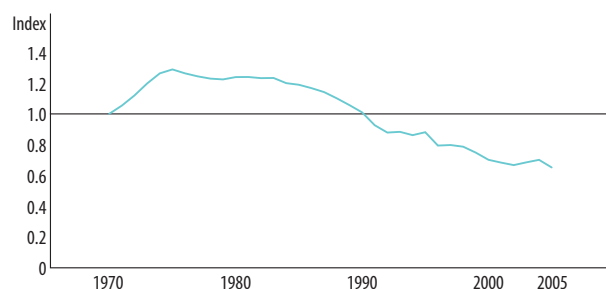
Ballast water—seawater that keeps ships stable—contains plankton and other organisms. They are transported by ships and can harm the local ecosystem when discharged in a port. For this problem, the International Maritime Organization adopted an international convention on ballast water in 2004. (Conditions for putting it into effect are unmet, as of June 2010). According to the convention, ballast water treatment equipment should be installed on all ocean-going vessels by 2017. We developed technology in this area early on, and in 2009, Hitachi Plant Technologies' non-sterilization system ClearBallast became the first in Japan to win IMO approval. Only about ten companies in the world have received approval. ClearBallast's coagulation and magnetic separation are attracting wide attention.

## Present State of the Environment

### Threat of Ecosystem Destruction

Populations of freshwater animal species that live in lakes, rivers, marshes and other inland waters are said to have declined by approximately 35 percent between 1970 and 2005. The causes include over-fishing, invasive non-native species, and water pollution. Among these reasons, water pollution by industry is especially serious as a direct cause of destruction of ecosystems. One of the "ecosystem services" that nature provides is water purification, but its capacity is limited. Effective treatment of wastewater is necessary to help preserve ecosystems.

### Trends in Populations of Freshwater Animal Species\*



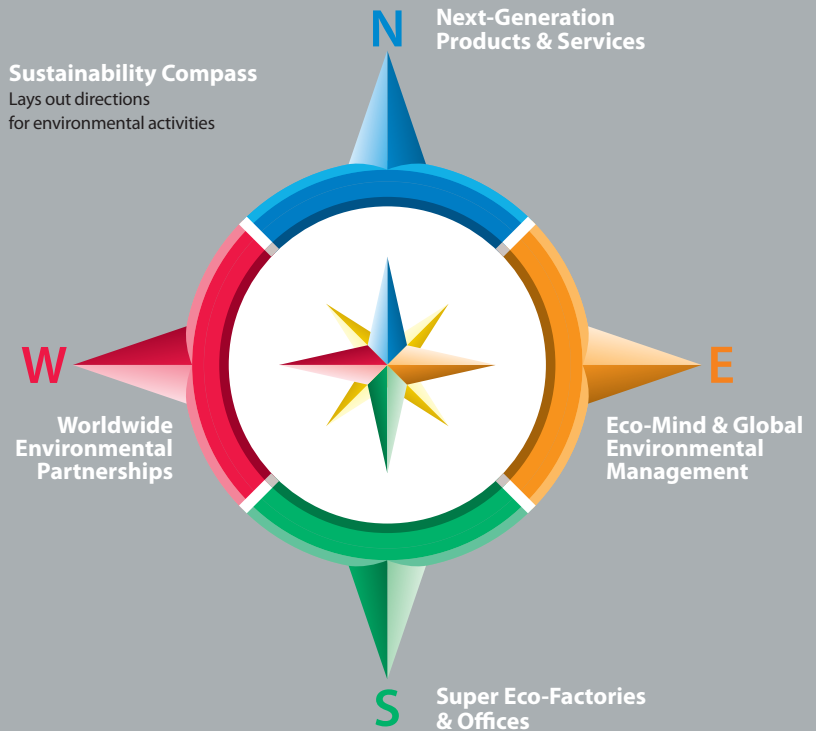
\* An index showing changes in populations of more than 300 species living in inland waters, with the 1970 level as 1.0.

Source: World Wildlife Foundation (WWF) *Living Planet Report 2008*

## Environmental Action Plan

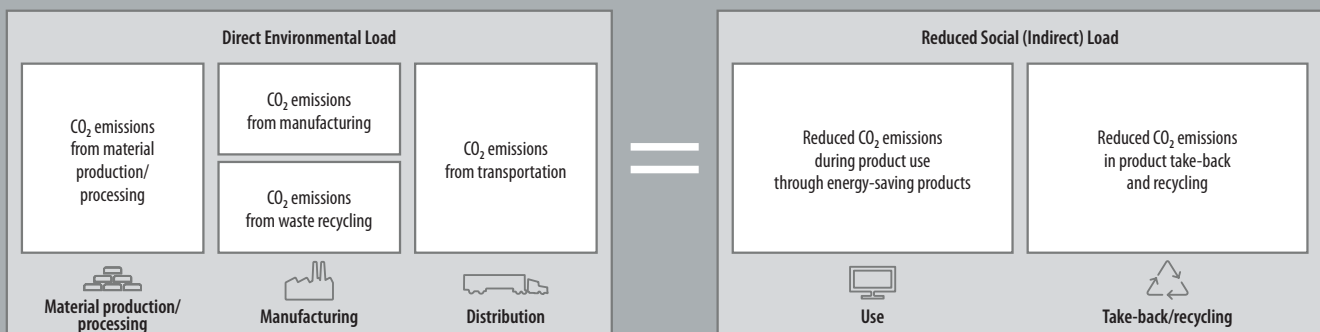
# Promoting Environmental Action; Setting Targets for every Fiscal Year

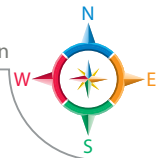
The four directions for our environmental activities are depicted in the Sustainability Compass. The specific action items and the targets for each direction are outlined in the Environmental Action Plan, for which the final year is fiscal 2010. The achievement level of each year's target is evaluated and continual improvements are made. The Environmental Action Plan is also optimized by adding action items and reviewing targets in response to, for example, changes in the global environment, requests from stakeholders, or early target achievement. By implementing the Environmental Action Plan and promoting *monozukuri* through which we reduce the environmental burden of a product throughout its life cycle, we intend to achieve *emission neutral* status by fiscal 2015.



### The Concept of *Emission Neutral*

*Emission neutral* means making the direct environmental load and the reduction of the social environmental load equal. Direct environmental load includes material production/processing, manufacturing, and transportation, while the reduction of the social environmental load is the amount reduced through energy- and resource-saving products compared with the base year of fiscal 2005.





## Hitachi Group Fiscal 2009 Environmental Action Plan: Targets and Results

Item	Page(s)	Action goal	Index	Fiscal 2009 target	Fiscal 2009 results	Achievement level	Fiscal 2010 target	
<b>Eco-Mind &amp; Global Environmental Management</b>								
Establish environmental management systems (EMSs)	pp. 15–16	Set up an integrated environmental management system in every in-house company/ Group company	Integrated EMS certification	Promotion/expansion	Certification acquisition in five companies	◆◆◆	Integrated EMSs certified	
Nurture environmental literacy	p. 18	Boost percentage of employees receiving Hitachi Group-wide training (environmental e-learning)	Percentage of employees receiving training	85%	93%	◆◆◆	90%	
Green purchasing	p. 18	Purchase products such as environmentally conscious office products	Green purchasing percentage	86%	89%	◆◆◆	90%	
<b>Next-Generation Products &amp; Services</b>								
Promote Eco-Products	pp. 21–22	Expand Eco-Product lineup	Percentage of sales	48%	53%	◆◆◆	55%	
			Percentage of registered products	ICT systems, digital media, consumer products, etc.	98%	98%	◆◆◆	100%
				Power systems, social/industrial systems, high functional materials & components, etc.	80% or more	85%	◆◆◆	80% or more
			Percentage of Super Eco-Products	22%	22%	◆◆◆	30%	
<b>Environmentally Conscious Factories &amp; Offices</b>								
Promote Super Eco-Factories & Offices	p. 27	Build industry's most advanced factories and offices	Certification of Super Eco-Factories & Offices	24 production facilities (total)	32 production facilities (total)	◆◆◆	30 production facilities (total)	
Prevent global warming	pp. 28–29	Reduce CO <sub>2</sub> emissions from energy sources	CO <sub>2</sub> emission reduction rate (base: FY 1990, Japan)	12%	21%	◆◆◆	12%	
	p. 29		Rate of reduction in CO <sub>2</sub> emissions per unit production (base: FY 2003, outside Japan)	4%	5%	◆◆◆	5%	
		Reduce energy used in transportation	Rate of reduction in energy for shipping per real unit output (base: FY 2006, Japan)	10%	26%	◆◆◆	11%	
Use resources efficiently	pp. 30–31	Reduce waste	Rate of waste volume reduction (base: FY 2000)	24%	33% (total reduction) 24% (per unit production reduction)	◆◆◆	25%	
	pp. 30–31	Promote resource recycling	Resource recycling rate (base: FY 2005, Japan)	8%	19%	◆◆◆	10%	
	p. 31	Use water effectively	Rate of reduction in water used (base: FY 2005, outside Japan)	8%	20%	◆◆◆	10%	
Chemical substance management	p. 32	Reduce chemical substance emissions	Rate of reduction in VOC emissions into the atmosphere (base: FY 2000, Japan)	49%	68%	◆◆◆	50%	
			Rate of reduction in VOC emissions into the atmosphere (base: FY 2005, outside Japan)	8%	14%	◆◆◆	10%	
<b>Worldwide Environmental Partnerships</b>								
Environmental communication	pp. 35–38	Enhance environmental activities through more two-way communication	Improve dissemination of environmental action	Planned implementation	Environmental communication through media mix of TV commercials, newspaper advertisements, advertorials, Internet, etc.	◆◆◆	Continue to improve dissemination	
			Participate in eco-product exhibitions		Participation in Eco-Products Tokyo	◆◆◆	Continue to participate in exhibitions	

◆◆◆ Achieved  
◆◆ Partially achieved

## Eco-Mind & Global Environmental Management

# Implementing environmental programs consistently

Under a system for global corporate management, we use environmental management systems to meet the targets of our Environmental Action Plan, while working hard to instill "Eco-Mind" in all our employees

### Targets and FY 2009 Results

	Target	Result	Further info
1	Build EMSs and improve the quality of activities	5 companies were certified for integrated EMSs	p.15
2	Instill "Eco-Mind" in employees through environmental education	93% of employees completed environmental e-learning courses	p.18





# Environmental Management Structure

Building a global network to put our environmental strategies to work

## Environmental Management Framework

The Hitachi Group is made up of Hitachi, Ltd.'s in-house companies and Group companies. We are building a global environmental management system to support environmental decision making and action at Hitachi, Ltd., 900 consolidated subsidiaries, and 157 equity-method affiliates.

The Hitachi, Ltd. Environmental Strategy Office is responsible for developing Group-wide environmental policies. It drafts basic management policies and action plans that are deliberated on and approved by the Senior Executive Committee for Environmental Policy, chaired by the president. The Environmental Strategy Officers Meeting, made up of representatives from in-house companies and major Group companies, ensures that environmental strategies are implemented throughout the Group. We also have an Environmental Committee and subcommittees of working level employees in each policy area who develop specific targets and measures for achieving them.

Outside Japan, we are building networks to promote environmental action. Regional environmental committees promote understanding and disseminate Group policies, while seeking solutions to local environmental issues.

In fiscal 2009, we held regional environmental meetings in Shanghai and Belgium. Participants discussed the latest environmental regulations and exchanged views on environmental issues. We will continue to use these regional networks to improve our global activities—with the special character of each region in mind.

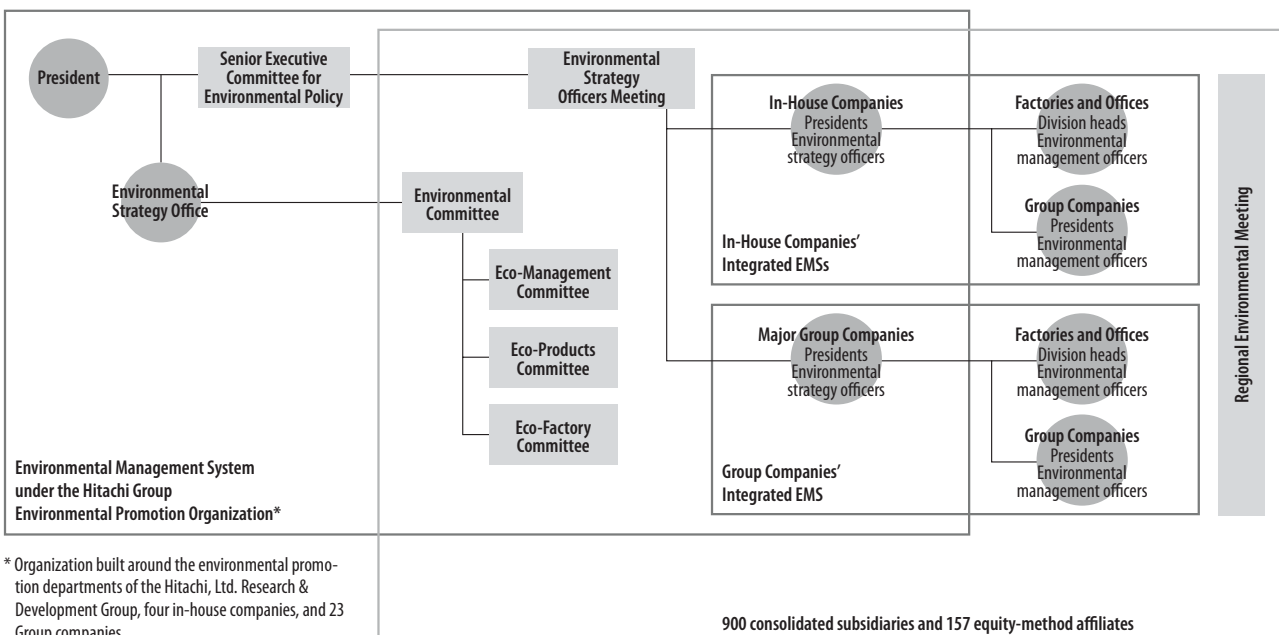
## Building Environmental Management Systems

The criteria for environmental management at each business site are determined by the environmental load. Approximately 300 sites meet these criteria, and the 28 business units to which these sites belong—the R&D Group, four in-house companies, and 23 Group companies—have together developed and implemented the Hitachi Group Environmental Promotion Organization

### Criteria for Environmental Management Level (major items)

<b>Employees</b>	≥ 500
<b>Electric power consumption</b>	≥ 6,000 MWh/year
<b>Waste generated</b>	≥ 500 tonnes/year
<b>Water used</b>	≥ 600 m <sup>3</sup> /day
<b>Paper purchased</b>	≥ 50 tonnes/year

## Environmental Management System (EMS)



\* Organization built around the environmental promotion departments of the Hitachi, Ltd. Research & Development Group, four in-house companies, and 23 Group companies

## Environmental Management Structure

EMS to consistently promote the implementation of environmental policies.

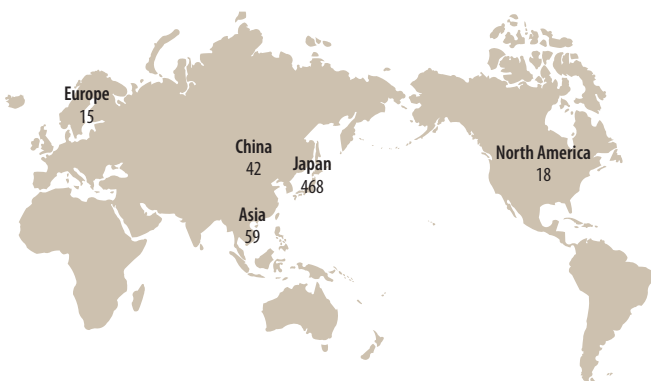
In fiscal 2009, the Hitachi Group Environmental Promotion Organization EMS had its first audit for renewal of ISO 14001 certification. No corrective action was required, and renewal was granted.

Also, the in-house companies and Group companies of the Hitachi Group Environmental Promotion Organization EMS are each working on their own EMSs to improve environmental activities and to streamline management. In fiscal 2009, one in-house and four Group companies carried out EMS integration of their business sites.

At the same time, every business site meeting the criteria for environmental management continues to maintain ISO 14001 certification. We also extended the EMS campaign to sites that do not meet the criteria. As of March 2010, 602 Hitachi Group business sites were certified.

### Status of ISO 14001 Certifications (As of March 2010) <sup>WEB</sup>

	Japan		Outside Japan		Total
	Production Sites	Non-Production Sites	Production Sites	Non-Production Sites	
No. of certified sites	240	228	111	23	602



### Monitoring Environmental Performance Data

For effective environmental management, we collect environmental performance data on business operations using the Environmental Load Evaluation System. This system collects environmental load data from 300 Hitachi business sites worldwide on such items as energy use, CO<sub>2</sub> emissions, and waste generated, together with

information on outside complaints, honors received, and other items. By analyzing this information, we identify environmental management issues and share instructive examples within the Group. We are expanding this system to keep pace with new laws and policies. For example, we added a new function for registration to the electronic manifest (see page 30) promoted by the government to prevent inappropriate disposal of wastes. Also, in fiscal 2009, we upgraded our system to collect and analyze energy-use data from all domestic sites in response to Japan's amended Energy Saving Law.<sup>†1</sup>

## Managing Environmental Risk

In the Hitachi Group, we go the extra mile in environmental management by considering the environmental burden of all our business activities and setting voluntary management criteria that exceed regulations. At every business site, we monitor water quality and noise, for example, and work to minimize environmental risk. We also share information on environmental regulations and violations to prevent recurrences and to strengthen management.

In fiscal 2009, four incidents exceeded statutory environmental standards and there were five noise complaints, and all were promptly resolved. We will continue to audit and monitor data to prevent recurrences.

To prevent soil and groundwater contamination caused by chemical leaks, we inspect underground tanks ultrasonically and replace underground pipes, pits, and tanks with ones above ground. At the end of fiscal 2009, approximately 90 percent of all sites where chemical substances were used had completed soil and groundwater decontamination or were contamination free. At the remaining sites, cleanups are taking place, and monitoring will continue.

### Violations of Statutory Standards

	Water quality	Air	Total
Japan	0	0	0
Outside Japan	2	2	4

(Fiscal 2009)

<sup>†1</sup> The Act on the Rational Use of Energy

<sup>WEB</sup> List of ISO 14001-certified sites



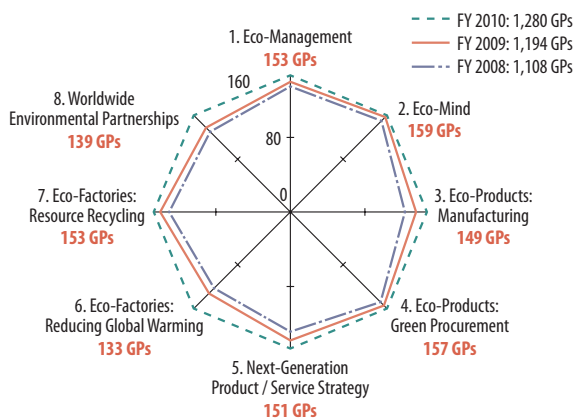
# Improving on Environmental Initiatives

Working hard to meet the targets of our Environmental Action Plan through continuous improvement and education

## Environmental Activity Evaluation System

Our environmental activities are based on the action items and targets in our Environmental Action Plan. To enhance the level and quality of these activities, we use

### Green Point Average: Results and Targets



### Categories and Evaluation Items

1. Environmental management action plan, environmental accounting, risk management, and statutory compliance
2. Environmental training and education for employees (general education, specialized education, auditor training)
3. Ecodesign, Eco-Products, management of chemical substances in products
4. Green procurement, green purchasing
5. Next-generation Eco-Product strategy, sustainable business
6. Energy conservation at business sites, environmentally responsible transportation
7. Waste reduction, chemical substance management
8. Stakeholder-oriented information disclosure, communications, global citizenship activities

our own evaluation system, GREEN 21. It divides environmental activities into eight categories and evaluates achievements and progress toward Action Plan targets by rating 55 items from one to five, then visualizing the results on radar charts. For any category, a perfect score is 200 green points (GPs). Interim evaluations are made during the year to identify weaknesses and make improvements in categories with low scores. The annual evaluations are also reflected in business performance evaluation of Group and in-house companies. In fiscal 2009, the Group achieved a score of 1,194 GPs, surpassing the target of 1,152. For fiscal 2010, the target is 1,280 GPs, or a Group average of four points or more on all 55 items.

### GREEN 21 Awards

The GREEN 21 Award program was set up to encourage environmental activities and disseminate best practices. It honors the best environmentally conscious products and technologies as well as activities that have yielded outstanding results, based on the combined scores for overall environmental activities (using GREEN 21) and outstanding individual achievements. In fiscal 2009, a grand prize winner, four division awards, and four honorable mentions were selected from 35 entries, including nine from outside Japan.

### Fiscal 2009 Green 21 Awards

Category	Recipient	Achievement
<b>Grand Prize</b>	Hitachi Works, Power Systems Co. (Hitachi, Ltd.)	Contributing to CO <sub>2</sub> emission reduction by joint development and marketing (with Kansai Electric Co.) of adjustable-speed pumped storage system enabling regulation of input power according to demand; winner of 2009 Minister of the Environment Award for Activities to Prevent Global Warming, technology and product development division
<b>Division Awards</b>	Eco-Mind & Global Environmental Management Hitachi Global Storage Technologies (Thailand) Ltd.	Forming an energy conservation team and reducing electricity and fuel consumption; winner of Prime Minister Industry Award
	Next-Generation Products & Services Alaxala Networks Corp.	Developing dynamic energy-saving system for networks (see page 23)
	Worldwide Environmental Partnerships Hitachi Global Storage Technologies Philippines Corp.	Activities to raise environmental awareness and preserve the environment
	Super Eco-Factories & Offices Kasado Works, Industrial & Social Infrastructure Systems Co. (Hitachi, Ltd.)	Making production process more energy efficient, using recycled water, promoting waste recycling (see page 27)
<b>Honorable Mentions</b>	Toyama Works, Hitachi Kokusai Electric Inc.	Improving quality in management of chemical substances in products; ongoing afforestation activities
	Kansai Area Operation, Hitachi, Ltd.	Developing and marketing environmental information management system in partnership with customers
	Hitachi Software Engineering Co., Ltd.	Activities to promote community relations, biodiversity
	Tohoku Rubber Co., Ltd.	Boosting efficiency of energy use in production processes (see page 27)

## Improving on Environmental Initiatives

### Participating in the Development of International Standards

We work with the following international standards organizations for environmental issues and environmentally conscious product technology: the International Organization for Standardization (ISO), Ecma International, the International Telecommunications Union (ITU-T), the World Business Council for Sustainable Development (WBCSD), and the International Electrochemical Commission (IEC). This helps us discover global business opportunities and ensure our products' competitiveness. On the IEC's technical committee 111, we served as international project leader for IEC 62430—generic procedural standards for environmentally conscious design—published in fiscal 2008. In fiscal 2009, Ecma International began working on standards for collaborative control of IT equipment and facilities for energy-efficient data centers, a project that we proposed.



An IEC meeting in the Netherlands

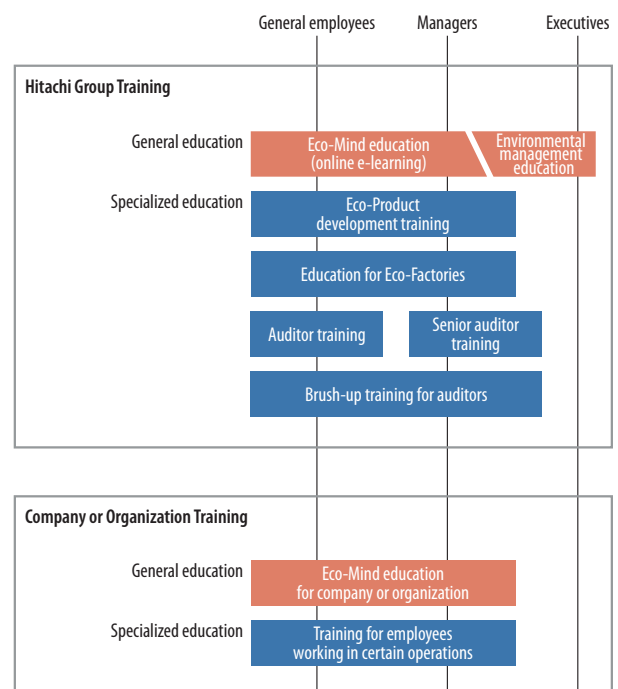
### Environmental Education

For better employee understanding and awareness of the environment, we developed Hitachi Group Training, a Group-wide environmental education program. It is divided into general education—covering subjects such as Hitachi's Environmental Vision and environmental strategies—and specialized expert training.

For all employees, a general Internet-based e-learning course is offered in three languages: Japanese, English, and Chinese. By connecting our global production sites to the Internet, 163,894 Group employees took the course in fiscal 2009, a completion rate of 93 percent.

Specialized training includes advanced education for staff directly engaged in product development, factory management, and other areas. In addition to Hitachi Group Training, individual companies and units provide special education and training tailored to their own business area. <sup>WEBP</sup>

### Hitachi Group Education and Training System



### Promoting Green Purchasing

We are improving our green purchasing rate—the ratio of environmentally conscious products purchased to total office supplies—by using a Group-wide online purchasing system, the e-sourcingMall. This system has a range of recyclable products and goods made with recycled materials. It promotes purchasing by clearly labeling environmentally conscious products. For fiscal 2009, our green purchasing rate reached 89 percent. In fiscal 2010, we plan to both lower costs and increase purchasing of environmentally conscious products through Group-wide bulk purchasing of office supplies, with the goal of reaching 90 percent green purchasing.

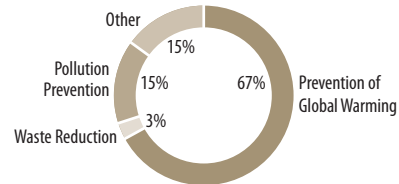
<sup>WEBP</sup> Required and actual numbers of legally certified staff



## Environmental Accounting

We have adopted, and are making public, environmental accounting conforming to Japan's Environmental Accounting Guidelines. The results help us to raise the efficiency of environmental investments and activities.

### Investment Ratio by Countermeasure



## Environmental Protection Costs

Item	Costs (billions of yen)			Overview
	FY 2007	FY 2008	FY 2009	
<b>Expenses</b>				
Business area	39.72	33.31	28.2	Costs of maintenance of equipment with low environmental burden, depreciation, etc.
Upstream/downstream	2.79	1.97	1.70	Green procurement expenses, recovery and recycling of products and packaging, recycling expenses
Management activities	11.30	11.20	8.92	Labor costs of environmental management, implementation and maintenance of environmental management system
Research and development	46.63	50.25	52.81	R&D for the reduction of environmental burden caused by products and production processes, product design expenses
Social activity	0.48	0.35	0.25	Planting, beautification, and other environmental improvement expenses
Environmental damage	0.80	0.99	0.68	Environmental mitigation costs, contributions, and assessments
<b>Total</b>	<b>101.72</b>	<b>98.06</b>	<b>92.56</b>	
<b>Total investment</b>	<b>15.38</b>	<b>10.17</b>	<b>7.95</b>	Investment in energy-saving equipment and equipment that directly reduces environmental load

Equipment depreciation costs are calculated using the straight-line method over five years.

## Environmental Protection Effects

Economic Effects <sup>*1</sup>				Major FY 2009 Activities
Item	Costs (billions of yen)			
	FY 2007	FY 2008	FY 2009	
Net income effects	14.50	10.90	8.30	Finding value from waste by sorting and recycling
Reduced expenses effects	22.02	18.24	15.00	Reducing resource costs through resource and energy conservation; reducing waste disposal costs through waste reduction
<b>Total</b>	<b>36.52</b>	<b>29.14</b>	<b>23.30</b>	

Physical Effects				Major FY 2009 Activities
Item	Amount Reduced (parentheses: equivalent number of households) <sup>*2, *3</sup>			
		FY 2007	FY 2008	FY 2009
Reduction in the amount of energy used during production	161 million kWh (34,000)	158 million kWh (33,000)	191 million kWh (40,000)	Reviewing clean room operating conditions; consolidating worksites and facilities (relocation of production bases); limiting the number of refrigerator units and switching to inverter technology; partnering with electric supply companies to save energy
Reduction in the amount of final waste disposal	7,361 t (53,000)	6,752 t (48,000)	5,955 t (43,000)	Switching to PRF (solid waste fuel); recycling grinding sludge and slag; reducing effluent volumes; reducing packaging materials for goods received

Benefits on equipment investment are calculated using the straight-line method over five years, as with costs.

\*1 Economic effects include the following items:

- Net income effects: benefits for which there is real income, including income from the sale of resalable material and income from environmental technology patents
- Reduced expenses effects: reduction in electricity and waste treatment expenses arising from environmental load reduction activities

\*2 Calculation for household-number equivalent for energy-use reduction: decrease in energy used during production (or during product use) ÷ total annual power consumption per household. Source: The Energy Conservation Center, Japan, *Survey on Standby Power Consumption* (FY 2008). (only in Japanese)

\*3 Calculation for household-number equivalent for final-waste disposal reduction: decrease in final waste generated during production ÷ (total annual volume of non-industrial final waste ÷ number of households). Sources: Ministry of the Environment, *Annual Report on the Environment in Japan 2009*; Statistics Bureau, *2005 Population Census*.

## Efficiency of Environmental Load Reduction<sup>\*4</sup>

Item	FY 2007	FY 2008	FY 2009
Reduction in energy used during production (million kWh/billion yen)	28	33	42
Reduction in amount of waste for final disposal (t/billion yen)	2,000	1,940	2,290

\*4 This is an indicator of the efficiency of environmental load reduction, calculated as the amount of environmental load reduction divided by expenses needed for the reduction.

## Next-Generation Products & Services

# Providing products with a reduced environmental burden

We are committed to preventing global warming and recycling resources, and helping to protect the global environment through our products and services. To reduce the environmental burden across the product life cycle, we are developing Eco-Products that meet rigorous requirements.

### Targets and FY 2009 Results

	Target	Result	Further info
1	To help reduce annual CO <sub>2</sub> emissions by 100 million tonnes by 2025 through Hitachi products and services	Contributing to <b>11.36</b> million fewer tonnes of emissions	p.5
2	To develop and promote environmentally conscious products and services	Eco-Products achieved a <b>53%</b> sales ratio	p.22



# Developing Environmentally Conscious Products

We develop and design products that minimize the environmental burden

## Environmentally Conscious Design

In 1999, we introduced a Design for Environment (DfE) assessment system that sets specific environmentally conscious criteria for the design and development of products and services—at all stages, from material procurement to production, distribution, use, and disposal. This system helps reduce the environmental burden throughout the life cycle of products and services. We designate those products that meet DfE requirements as Eco-Products.

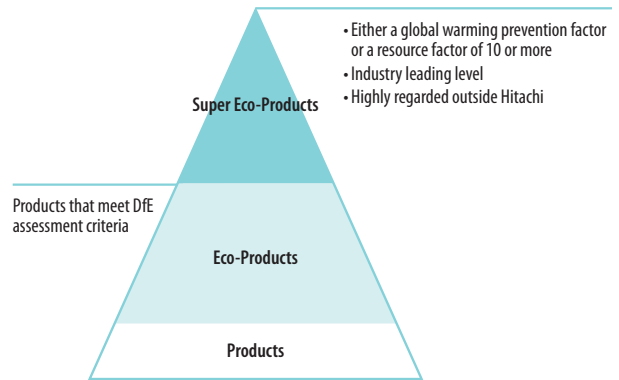
Where DfE assessment initially focused on consumer electronics, industrial machinery and other hardware, we have now widened the scope of DfE by developing methods that apply to software and IT-based services. In fiscal 2009, we developed assessment methods for plant products such as wind power generation systems, as well as housing. This assessment has also been tailored to comply with the European Eco-design Directive<sup>+1</sup> and other environmental product regulations. We aim to make all Group products Eco-Products by fiscal 2025.

## Development of Super Eco-Products

Eco-Products that meet even more demanding requirements are designated Super Eco-Products. Aiming to minimize the environmental burden, the global warming prevention efficiency or resource efficiency (see pages

23–24) of these products must be at least ten times more than reference products (factor 10), or they must be leaders in their industry for their energy efficiency standard achievement rate<sup>+2</sup> or other similar factors, or must be highly rated outside the company. As of March 2010, 539 models, or 22 percent of Eco-Products sales, had been registered as Super Eco-Products.

## Hitachi's Eco-Product System



## Disclosure of Environmental Information

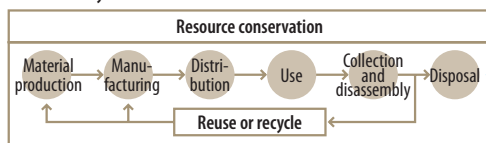
In 1999, Hitachi introduced an environmental information labeling system that uses symbols and data sheets to provide environmental information on environmentally conscious products. The mark in page 22 indicates

## How a DfE Assessment Is Performed

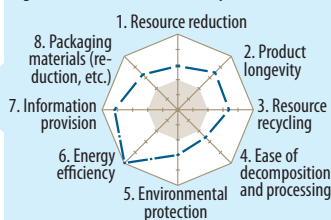
During product design, the environmental load is assessed quantitatively for each product life cycle stage using the eight DfE assessment criteria. If a product scores at least equal to or more than level 2 (the reference level before the latest major model change) in all eight criteria and its average over all the criteria is level 3 or more, it is designated an Eco-Product.



### Product Life Cycle




### Eight assessment criteria (example)



The environmental burden is quantitatively assessed at each product life cycle stage.

- DfE assessment criteria (examples):
1. Size and weight reduction, resource reduction
  2. Durability, reliability
  3. Use of materials that can be reused and recycled
  4. Ease of disassembly and material separation
  5. Environmentally conscious parts and units
  6. Energy efficiency in production, distribution and use
  7. Provision of suitable environmental information
  8. Reduced packaging and recycling

## Developing Environmentally Conscious Products

that a DfE assessment has found the product to be an Eco-Product, letting stakeholders know that the product's environmental burden has been highly improved. We also use our Web site to disclose environmental information, such as data sheets for each environmentally conscious product and case studies of products that helped improve environmental efficiency. 



### Management of the Whole Development Process

We drew up the Hitachi Group Ecodesign Management Guidelines to establish environmentally conscious design procedures for the development of both products and services. Based on the IEC 62430 international standard on generic procedures for environmentally conscious design, the guidelines require divisions, such as business planning, design, procurement, manufacturing, and quality control, to be environmentally conscious and keep records on processes and results. Divisions then incorporate these guidelines into their environmental management and quality control management systems based on the ISO 14001 and ISO 9001 international standards, pursuing product and service development in a PDCA (plan-do-check-act) cycle. First, legal and stakeholder requirements are analyzed and specifications created for products with a minimal environmental burden (plan). This is followed by environmentally conscious development and design using Hitachi's DfE assessment system (do), and then review and ongoing improvement (check and act).

<sup>t1</sup> **Eco-design Directive:** A framework directive on the ecodesign of energy-related products (EU Directive)

<sup>t2</sup> **Energy efficiency standard achievement rate:** Based on the Act on the Rational Use of Energy (also known as the energy saving law), this value indicates the rate of achievement for energy efficiency targets of certain home appliances. The target values are defined using the most energy efficient products available at the time.

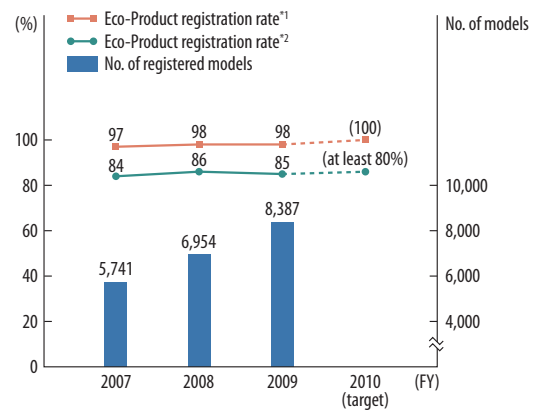
 Environmental Efficiency of Hitachi Products based on Factor X

### Goal & Performance

#### Eco-Product Increase

**Goal 100%<sup>t1</sup>/at least 80%<sup>t2</sup> in fiscal 2010**

**Performance** In fiscal 2009, the Eco-Product registration rate was 98 percent for product categories of information and telecommunications systems, and consumer products; 85 percent for product categories of power systems, high functional materials and components and others. Both categories cleared their goals for the fiscal year (98 percent and at least 80 percent, respectively).



Registration rate is the ratio of Eco-Product sales to sales of all products for which ecodesign is applicable.

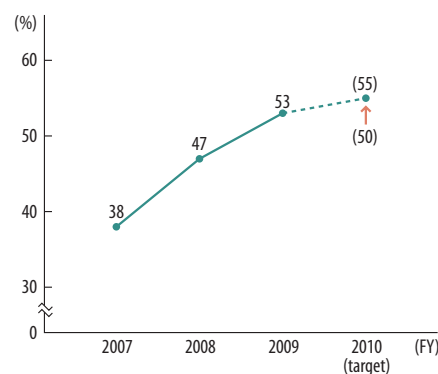
\*1 Product categories: Information and telecommunications systems, digital media and consumer products

\*2 Product categories: Power systems, social infrastructure and industrial systems, high functional materials and components and others

#### Increase in Eco-Product Sales

**Goal 50%→55% in fiscal 2010**

**Performance** In fiscal 2009, the sales ratio rose to 53 percent, clearing the fiscal 2009 goal of 48 percent. As it also topped the fiscal 2010 goal of 50 percent, the fiscal 2010 goal was raised to 55 percent.







# Prevention of Global Warming

Looking for greater energy conservation and energy efficiency in our products

## Making Products More Energy Efficient

The energy used to power our products is an indirect cause of greenhouse gas emissions. We are helping to prevent global warming by cutting the amount of energy used during product manufacturing and distribution. As well, we are saving indirect energy by making our products more efficient and by reducing their power consumption by, for example, adding a power-saving mode. We use DfE assessments (see page 21) for product and service development and design. In this way, we make improvements at all stages of the product life cycle, including manufacturing, shipping, and use.

## Improving the Efficiency of Global Warming Prevention

To measure how effectively energy is used during a product's life cycle, we introduced *efficiency of global warming prevention*. This measurement is based on the concept of environmental efficiency that balances the value of products contributing to the quality of life and the reduction of their environmental load. We gauge the improvement

in product value by function and life span, using the amount of greenhouse gases emitted over the product life cycle to calculate the reduced environmental load. By raising the *efficiency of global warming prevention*, we increase a product's value and reduce greenhouse gas emissions. In addition, the *factor of global warming prevention* indicates the amount of improvement in *efficiency of global warming prevention* compared with a reference product. Products with a factor of ten or more, or at least ten times greater efficiency than reference products (fiscal 2000 products), are designated Super Eco-Products.

## Global Warming Prevention Factor Calculation

Definition of efficiency of global warming prevention

Efficiency of Global Warming Prevention

Product function × Product life span

Volume of greenhouse gas emissions throughout the product life span

Definition of factor of global warming prevention

Factor of Global Warming Prevention

Efficiency of global warming prevention of evaluated product

Efficiency of global warming prevention of reference product

## Energy Savings in Telecommunication Equipment



- **Product:** Dynamic Power Saving System (AX6700S series, AX6600S series and AX1240S series LAN switches<sup>\*1</sup>)  
ALAXALA Networks Corporation
- **Environmentally conscious feature:** A power-saving function dynamically regulates energy used by networks
  - Controls performance and cuts the amount of power used
  - Cuts power to areas not in use without affecting communications
- **Environmental load reduction:** Power consumption is deliberately reduced when network traffic is low (at night, on holidays, etc.)
- **Third-party evaluation:** Japan's Ministry of Economy, Trade and Industry (METI) Commerce and Information Policy Bureau Director-General's Awards at Green IT Award 2009<sup>\*2</sup>

\*1 A communication device that exchanges multiple data simultaneously based on destination information within local area networks

\*2 Awarded to IT products and services with outstanding energy savings (organized by the Green IT Promotion Council, backed by METI)



## Hybrid Drive Systems: Energy Savings for Train Engines



- **Product:** Hybrid Active Shift Transmission (HAST drive) for train engines  
Hitachi Nico Transmission Co., Ltd.  
(jointly developed with Hokkaido Railway Company)
- **Environmentally conscious feature:** Regenerative braking captures the energy from braking and stores it to be later fed back through the transmission to assist the engine, saving energy and boosting performance
- **Environmental load reduction:** Recovered energy is used when the train accelerates, cutting fuel consumption
  - The engine stops running when the train stops, and the train uses only the electric motor to start moving again, reducing noise
- **Third-party evaluation:** Environmental Award at 36th Environment Prize<sup>\*1</sup>

\*1 Awarded for outstanding achievements in R&D, studies, and other research related to sustainable development that reduces the environmental load (organized by the Hitachi Environment Foundation and Nikkan Kogyo Shimbun, Ltd., and backed by the Ministry of the Environment)

# Conservation of Resources

We are recycling resources and making products more resource efficient

## Recycling Resources and Making Products More Resource Efficient

Most natural resources not consumed as energy or food are used as materials for products and services, and later discarded.

To conserve resources, we reduce the amount used during production by making smaller and lighter products (resource reduction) and reduce waste by lengthening product life cycles (longevity). At the same time, we use recycled resources or parts and materials that can be reused or recycled (recyclability), and make products so that materials and parts can be easily reused or recycled (ease of disassembly and disposal). We use DfE assessments (see page 21) to monitor and improve conservation during all stages of the product life cycle, including manufacturing, shipping, and use. <sup>WEB</sup>

## Boosting Resource Efficiency

We measure *resource efficiency* to evaluate how effectively resources are being used during the product life cycle. This measurement is based on the concept of environmental efficiency that balances the value of products contributing to the quality of life and the reduction

of their environmental load. This measure also guides us to improve product value by function and life span; we gauge the amount of resources used over the product life cycle<sup>+1</sup> to calculate the reduced environmental load. By working to boost *resource efficiency*, we increase product value while promoting resource conservation. In addition, a *resource factor* is used to indicate the amount of improvement in *resource efficiency* compared with a reference product. Products with a factor of ten or more, or at least 10 times greater efficiency than reference products (fiscal 2000 products), are designated Super Eco-Products.

### Resource Factor Calculation

Definition of resource efficiency

$$\text{Resource Efficiency} = \frac{\text{Product function} \times \text{Product life span}}{\sum (\text{life cycle resource use} \times \text{value coefficient of each resource})}$$

Definition of resource factor

$$\text{Resource Factor} = \frac{\text{Resource efficiency of evaluated product}}{\text{Resource efficiency of reference product}}$$

<sup>+1</sup> Amount of resource use over life cycle: Newly used resource amount + discarded resource amount  
<sup>WEB</sup> Product and package recycling

## Reducing the Environmental Load of Small Batteries

- **Product:** Small batteries (alkaline and lithium-ion batteries, etc.) Hitachi Maxell, Ltd.
- **Environmentally conscious features:** Developing innovative small battery technologies opens the way for products with a lower environmental load
  - Silver oxide batteries
    - A battery with no mercury or lead that is made using anti-corrosion technology based on a corrosion-resistant zinc alloy and a new electrolyte solution
  - Alkaline batteries
    - Expiry date is extended—from two to five years—by a proprietary additive and conductive agent
    - An anti-leak design<sup>\*1</sup> boosts AA and AAA battery reliability
  - Lithium-ion batteries
    - A proprietary electrode technology and new materials cut size by around 33 percent (compared with similar batteries in 2000)
    - A new electrode uses less lithium and cobalt
- **Environmental load reduction:** Reducing a battery's size and extending its life cuts down on resources used and reduces waste
- **Third-party evaluation:** Minister of Economy, Trade and Industry Award at the 19th Global Environment Awards<sup>\*2</sup>



<sup>\*1</sup> Overdischarge electrolyte leak-proof design using patented technology  
<sup>\*2</sup> Awarded for the development of products, services, and technologies that contribute to a sustainable material-cycle society, environmental protection, and business (organized by Fujisankei Communications Group, and backed by METI; the Ministry of the Environment; the Ministry of Education, Culture, Sports, Science and Technology; and the Ministry of Land, Infrastructure, Transport and Tourism)



# Preservation of Ecosystem

We are determined to control and reduce the amount of harmful chemical substances contained in products

## Controlling Chemical Substances Contained in Products

As one corporate initiative to protect the ecosystem and maintain biodiversity, we need to both consider the impact of manmade chemicals on biodiversity and manage the risks.

To control the chemical substances contained in products, we created Regulations for Environmental CSR-Compliant *Monozukuri* in 2005. This helps us to manage chemical substances—across the product life cycle from development and design to procurement, production, use, and disposal. To voluntarily control chemical substances, we defined 13 prohibited substances (Level 1) and 12 controlled substances (Level 2) and created guidelines for their control and handling.

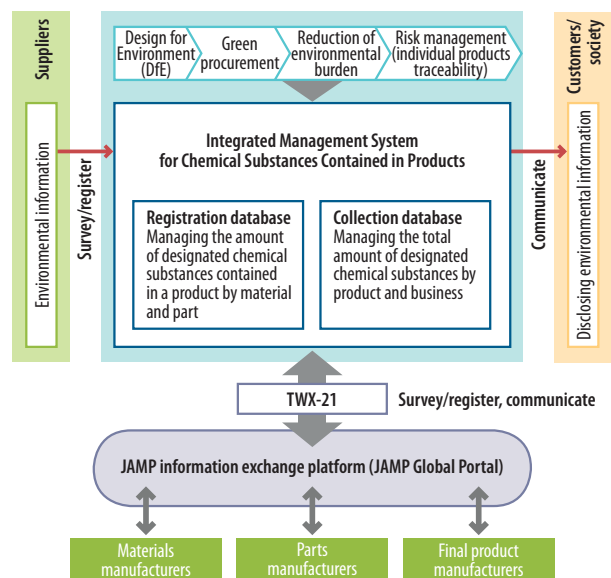
To manage the risks, we comply with REACH,<sup>†1</sup> a chemical substance regulation in Europe, and we revised our regulations and product information gathering procedures in 2008. In fiscal 2009, we added potential REACH SVHC<sup>†2</sup> to our voluntarily controlled chemical substances, strengthening our management structure. We identified chemical substances used in the Hitachi Group, from raw materials to end products, that should be controlled, and created a mechanism to collect, examine, and communicate information across the supply chain from procurement to production, shipping, and sales, in and outside Japan.

## Covering the Entire Supply Chain

Working closely with suppliers and customers, we have been using and improving the Integrated Management System for Chemical Substances Contained in Products, created in 2005, as a way to gather and send out information about chemical substances across the supply chain.

In July 2009, we linked this management system to the cross-industry JAMP<sup>†3</sup> information exchange platform via Hitachi's enterprise cloud service TWX-21.<sup>†4</sup> The direct connection between customer and supplier databases has opened the way for fast, efficient information gathering and communication across the entire supply chain. At the end of March 2010, chemical substance information for 740,000 parts and products was registered in our integrated management system.

## Integrated Management System for Chemical Substances Contained in Products



Linking our integrated management system with the JAMP Global Portal enables a more efficient exchange of chemical substance information over the supply chain

- †1 **REACH regulation:** Registration, Evaluation, Authorisation and Restriction of Chemicals (EU)
- †2 **Potential REACH SVHC:** More than 2,000 substances that are persistent and bio-accumulative or that have toxic or endocrine-disrupting properties
- †3 **JAMP:** Joint Article Management Promotion-consortium
- †4 **TWX-21:** Cloud-based business service providing an intercompany e-marketplace

## Hitachi Group's Voluntarily Controlled Chemical Substances

Classification	Application	Substance (Group) Names
Level 1 Prohibited substances	Chemical substances that the Hitachi Group prohibits from being included in procured products (chemical substances banned or restricted for use in products (including packing materials) by domestic or foreign regulations and potentially used for procured products for the Hitachi Group)	Cadmium and its compounds, hexavalent chromium compounds, lead and its compounds, mercury and its compounds, bis (tributyltin) oxide (TBTO), polybrominated biphenyls (PBB), polybrominated diphenyl ethers (PBDE), polychlorinated biphenyls (PCB), polychlorinated naphthalene (with 3 or more chlorines), short-chain chlorinated paraffin, asbestos, azo dyes/pigments, and ozone layer depleting substances
Level 2 Controlled substances	Substances that are not restricted for inclusion in procured products but for which monitoring and control are required by domestic or foreign regulations, or for which special consideration for recycling or appropriate disposal is required	Antimony and its compounds, arsenic and its compounds, beryllium and its compounds, bismuth and its compounds, nickel and its compounds (excl. alloys), selenium and its compounds, brominated flame retardants, polyvinyl chloride (PVC), phthalate esters, tributyltins (TBT) and triphenyltins (TPT), ozone layer depleting substances (HCFC), radioactive materials, and potential REACH SVHC

## Super Eco-Factories & Offices

# We are reducing the environmental burden created by our business activities

We are working hard to reduce the burden on the global environment created by our own business activities.

We are rigorously cutting CO<sub>2</sub> emissions to help prevent global warming, reducing the amount of waste generated, using water resources more effectively, and sharply decreasing emissions from chemical substances.

### Targets and FY 2009 Results

	Target	Result	Further info
1	Reduce CO <sub>2</sub> emissions	Reduced <b>21%</b> in Japan and <b>5%</b> outside Japan* <sup>1</sup>	p.28
2	Reduce waste volume	<b>30%</b> reduction* <sup>2</sup>	p.30
3	Reduce chemical substance emissions	Reduced <b>68%</b> in Japan and <b>14%</b> outside Japan* <sup>3</sup>	p.32

\*1 Total emission reduction rate for Japan (from fiscal 1990), reduction rate per unit of production for outside Japan (from fiscal 2003)

\*2 Total reduction rate obtained from the sum of both groups: total-waste reduction group (33% cut from fiscal 2000) and waste-per-unit-production reduction group (24% cut from fiscal 2000)

\*3 Reduction rate of total VOC emissions for Japan (from fiscal 2000), reduction rate of VOC emission ratio (emissions/total volume of VOCs handled) for outside Japan (from fiscal 2005)



# Super Eco-Factories & Offices

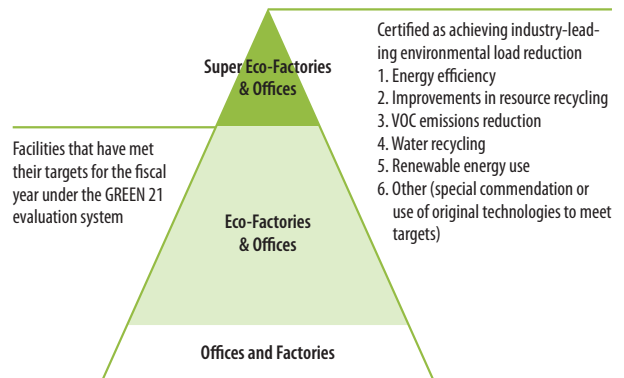
We promote the creation of pioneering facilities that reduce the environmental burden

## Promoting Super Eco-Factories & Offices

To reduce the environmental burden of business activities, a Super Eco-Factory & Office certification is given to facilities that show a high level of environmental consciousness and take pioneering steps in this area. We certify those facilities as Eco-Factories & Offices that have met their targets for the fiscal year under our GREEN 21 system for comprehensively evaluating environmental action (see page 17). Facilities that have achieved an industry-leading environmental load reduction based on criteria such as energy efficiency, improvements in resource recycling, and chemical substance emission reduction are designated Super Eco-Factories & Offices. In fiscal 2009, seven more facilities were named Super Eco-Factories & Offices, bringing the total to 32.

Information on initiatives and environmental technologies at Super Eco-Factories & Offices are shared within the Group to encourage environmental activities.

## Super Eco-Factory & Office Certification Criteria



## Examples of Super Eco-Factories



Energy conservation and resource recycling in train car manufacturing and shipping

### Kasado Works, Industrial & Social Infrastructure Systems Company, Hitachi, Ltd.

Kasado Works in Kudamatsu City, Yamaguchi Prefecture, develops and manufactures train and bullet train bodies for Japanese and international customers. By adopting friction stir welding technology for assembling train cars, this plant has cut the amount of power used for welding by more than 40 percent. The introduction of a high-speed cutting technology led to less oil-based paint being used, as well as reduced VOC emissions. In addition, all the water used during train car waterproof testing—about 120 tonnes a month—is recycled. Since fiscal 2004, all the plant's waste is being recycled in some way.

### Main Works, Tohoku Rubber Co., Ltd.

A manufacturer of escalator handrails, rubber sheets and other synthetic rubber products in Sendai City, Miyagi Prefecture, Japan, Tohoku Rubber's Main Works has been conserving energy by, for example, installing solar power generation equipment and introducing ice thermal storage for air conditioning. In particular, boilers using emulsion fuel—heavy oil, water, and emulsifiers combined—to boost fuel efficiency, have cut the plant's heavy oil consumption by 80 kiloliters per year from fiscal 2005. The plant's final waste disposal rate has also been trimmed to 0.7 percent through practices such as the thermal recycling of rubber waste.



Solar power (maximum output 10 kW) is used at the plant



Designated an Environmentally Friendly Enterprise by Tianjin City, China in 2006

### Hitachi Building Equipment Manufacturing (Tianjin) Co., Ltd.

Hitachi Building Equipment Manufacturing (Tianjin) makes elevators in Tianjin City, China. In 2006, the Baodi District Environmental Protection Bureau in Tianjin City named the company an Environmentally Friendly Enterprise, a designation given to model companies that achieve a balance between the environment and the economy. The company has reduced VOC emissions by using water-based paint for large parts and has upgraded the painting process. They have also switched from liquefied petroleum gas to natural gas, improving plant energy use per unit of production by 9 percent in fiscal 2009.

# Prevention of Global Warming

We are working to curb greenhouse gas emissions in plants and offices and in transportation

## Reducing Greenhouse Gas Emissions

Our sustained investment promotes energy conservation, and we employ highly effective CO<sub>2</sub> emission reduction measures in Group operations worldwide. For energy conservation diagnoses, Group engineers with advanced, broad knowledge of equipment (air conditioning and boilers, for example) diagnose energy use and propose improvements. We are also cutting greenhouse gas emissions other than CO<sub>2</sub> by switching to gases with low global warming coefficients and installing scrubbers. And we participated in a government program—Experimental Introduction of an Integrated Domestic Market for Emissions Trading—meeting fiscal 2008 targets and helping to identify issues.

### Trend in Energy Conservation Investment in Japan

FY 2007	FY 2008	FY 2009
6.4	7.7	5.2

(billions of yen)

## Renewable Energy

We are introducing wind and solar power, and other renewable energy sources. In fiscal 2009, the Narashino Division of Hitachi Industrial Equipment Systems installed a 100-kW solar power generator. Now, Group solar power has risen to 1,156 MWh and wind power to 81.7 MWh. We also buy Certification of Green Power for 1,000 MWh of natural energy every year from Japan Natural Energy Company, using this power for general shareholders meetings, fairs, and some offices.



Green Power symbol on Certification of Green Power

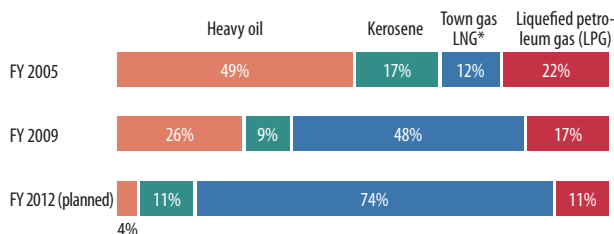
## Introducing Energy Efficient Systems

Since we build transformers, air compressors, lighting, and other plant equipment, we are making them energy efficient and introducing them into our plants. We also use our environmental businesses to cut CO<sub>2</sub> emissions, collaborating with our energy service company (ESCO) division, a provider of comprehensive energy conservation services, to promote co-generation systems.<sup>†1</sup>

## Fuel Switching Initiative

We have been switching to natural gas (town gas, LNG) for materials processing, where heavy fuel oil was used. This will cut CO<sub>2</sub> emissions by around 30 percent by fiscal 2012, and we plan to reduce heavy oil use to below 10 percent (from fiscal 2005).

### Trends in Fuel Use Ratios

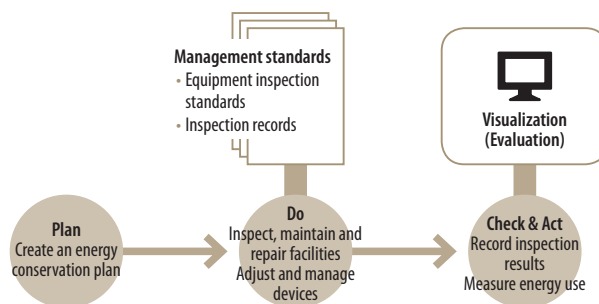


\* Liquefied Natural Gas

## Reducing the Energy Used in Offices and Other Business Operations

We have business operations, such as design offices, data centers, business offices, and hospitals, that together account for around 13 percent of our total CO<sub>2</sub> emissions. We are promoting rational energy use—to comply with Japan's amended Act on the Rational Use of Energy, in effect in fiscal 2009—by developing common management standards for the 10 operation types subject to regulation. A newly built database system also collects data on energy use for each type. These steps enable us to gauge energy use in each operation type, to analyze inspection results, and to make improvements.

## Energy Management System



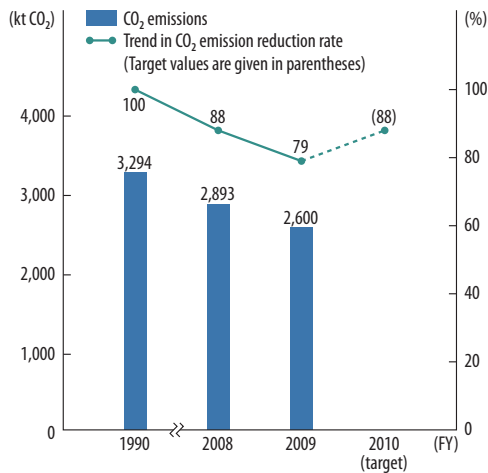


**Goals & Results**

**Reducing CO<sub>2</sub> Emissions in Japan**

**Goal 12% reduction in fiscal 2010** (from fiscal 1990 levels)

**Result** In fiscal 2009, we reduced CO<sub>2</sub> emissions by 21 percent from the fiscal 1990 level, clearing the year's goal of 12 percent. This was achieved through steps such as switching from heavy fuel oil to natural gas and by making furnaces more energy efficient.



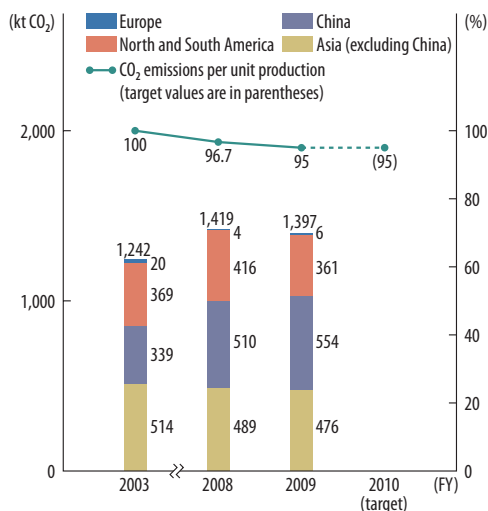
Emissions were calculated using CO<sub>2</sub> emission coefficients for each electric power company, as published by the Ministry of the Environment

**Reducing CO<sub>2</sub> Emissions outside Japan**

**Goal 5% reduction in fiscal 2010**

(per unit of production from fiscal 2003 levels)

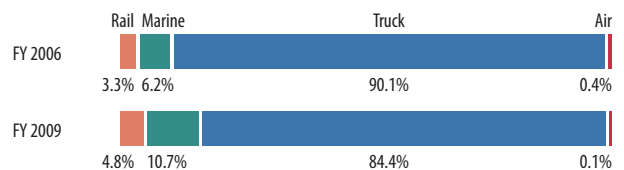
**Result** In fiscal 2009, we reduced CO<sub>2</sub> emissions by 5 percent from fiscal 2003 levels, clearing the year's goal of 4 percent. Building a new plant in China pushed up emissions, but energy-saving diagnoses helped to improve overall energy efficiency.



**Reducing CO<sub>2</sub> Emissions from Transportation**

Since we manufacture and ship a variety of products—ranging from large power plants to mass-produced items such as home appliances, we are improving transportation effectiveness by reducing size, weight, and packaging to improve truck load efficiencies. We also have made modal shifts: utilize more railways than road transportation for heavy products such as dry cells, and ships for large products assembled at the plant that were trucked in lots before.

**Trends in Transportation Mode Ratios in Japan**



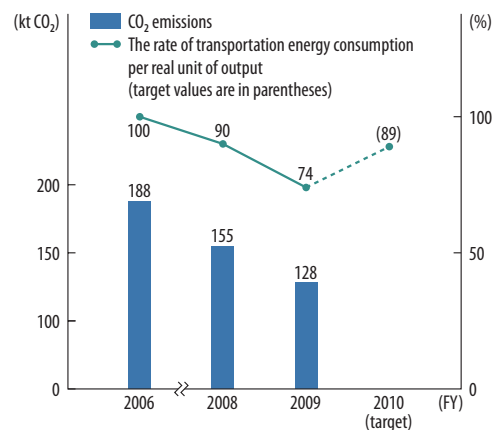
**Goals & Results**

**Reducing CO<sub>2</sub> Emissions from Domestic Transportation**

**Goal 11% reduction in fiscal 2010**

(Rate of transportation energy consumption per real unit of output from fiscal 2006 levels)

**Result** In fiscal 2009, we improved CO<sub>2</sub> emissions per unit from domestic transportation by 26 percent over 2006 levels, clearing the year's goal of 10 percent. The effect of a modal shift to ship-borne transportation in particular helped to reduce CO<sub>2</sub> emissions.



†1 Co-generation system: Energy-saving system making effective use of waste heat for power generation

# Conservation of Resources

We promote the efficient use of waste and water

## Using Waste and Valuable Resources Efficiently

The Hitachi Group is reducing and recycling waste materials generated during manufacturing, including valuable resources (reusable resources with residual value).

To use resources without generating waste, we are reusing resources from the manufacturing process by recycling material residue as raw resources or filtering cleaning oil for reuse. These technologies and measures are shared across the Group to reduce the amount of waste.

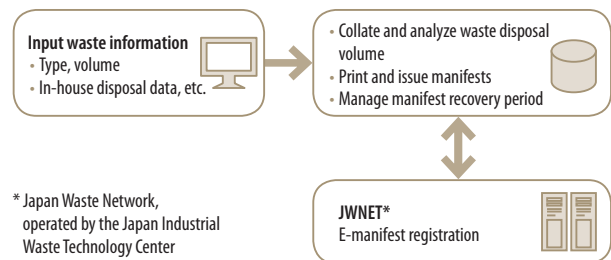
We also aim to recycle waste into resources rather than disposing of it in landfills. Using the Group's 3R load index to assess the environmental load incurred in waste disposal, we are developing technologies and applications to promote reuse and recycling. Our initiative to boost the number of zero emission<sup>+1</sup> sites that have minimized landfill disposal now has 163 facilities achieving that status in fiscal 2009 (up 14 from the previous year). <sup>WEB</sup>

## Promoting Appropriate Disposal

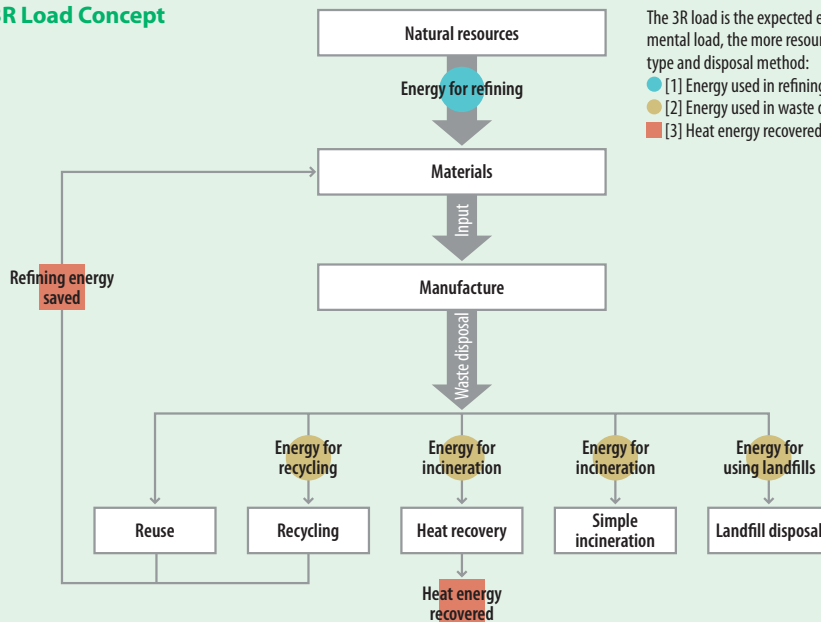
We have developed a waste management system that electronically records information from manifests<sup>+2</sup> on

waste type, disposal method and disposal completion, and that can also register the e-manifests<sup>+3</sup> promoted by the government to prevent inappropriate disposal. We have bolstered our mechanisms for ensuring appropriate waste disposal, with the system now issuing a warning if there are mistakes in a manifest or if disposal completion cannot be completed. A function has been added for collating data on waste volume, disposal methods, and disposal volume from electronic manifest information to boost operational efficiency and promote resource recycling. We are also working to increase e-manifest use within the Group.

## Waste Management System



## 3R Load Concept



The 3R load is the expected environmental load from waste disposal. The smaller the environmental load, the more resources are being recycled. The following are totaled for each waste type and disposal method:

- [1] Energy used in refining natural resources into materials
- [2] Energy used in waste disposal
- [3] Heat energy recovered through waste recycling and reduction in refining energy



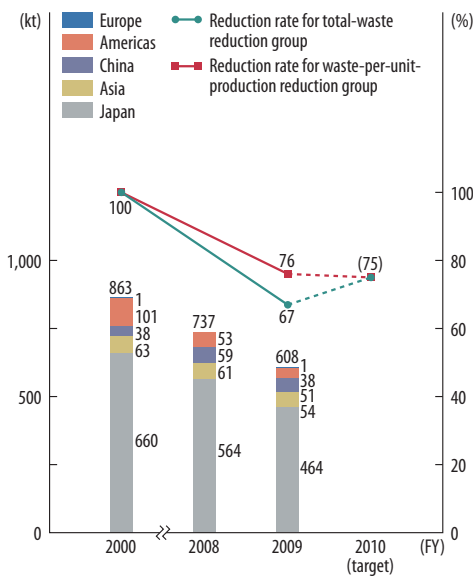


Goals & Results

Reducing Waste Generated

**Goal 25% reduction in fiscal 2010** (from fiscal 2000)

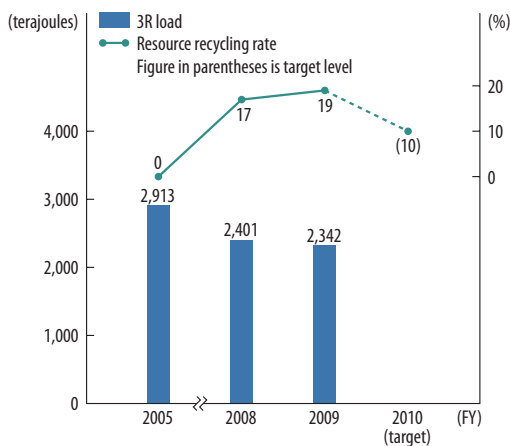
**Result** In fiscal 2009, the total-waste reduction group achieved a 33 percent reduction from fiscal 2000 in the amount of waste generated, and the waste-per-unit production reduction group achieved a 24 percent reduction, meeting the year's goal of a 24 percent reduction.



Boosting the Resource Recycling Rate<sup>†4</sup> in Japan

**Goal 10% improvement in fiscal 2010** (from fiscal 2005)

**Result** In fiscal 2009, we boosted our resource recycling rate in Japan by 19 percent from fiscal 2005, clearing the year's goal of an 8 percent increase. Waste generation reduction was a major contributor to the higher rate.



Water Resource Conservation

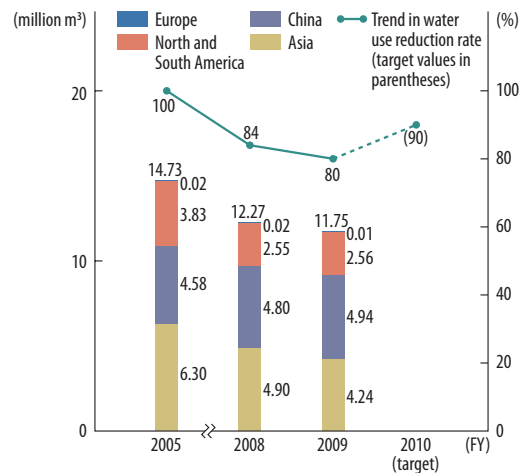
To reduce our water consumption, we are recovering and recycling water used during manufacturing or reusing it for non-technical use. A particular focus is the application of the Group's reduction initiatives to outside Japan where water resource conservation is an issue.

Goals & Results

Reducing Water Use outside Japan

**Goal 10% reduction in fiscal 2010** (from fiscal 2005)

**Result** In fiscal 2009, we cut our water use outside Japan by 20 percent from fiscal 2005, clearing the year's goal of 8 percent. Particularly in China, recycling and reuse efforts reduced water use, despite the rise in production volume.



- †1 **Zero emission:** Defined as a final disposal rate (landfill disposal/waste) of no more than 1 percent and less than 5 tonnes of final waste in any given year
- †2 **Manifest:** An evidence document for industrial waste management issued by waste generators and relayed along the waste stream to ensure appropriate disposal
- †3 **Electronic manifest (e-manifest):** Mechanism for centralized management of digital manifests, with waste generators and waste disposal companies sharing relevant information
- †4 **Resource recycling rate:** Calculated as (base year 3R load minus subject year 3R load) divided by base year 3R load

Zero emission sites

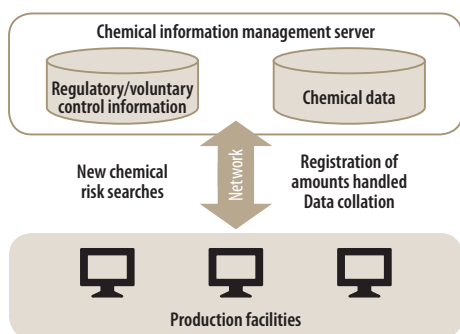
# Preservation of Ecosystem

We are managing chemical risk and reducing emissions

## Effective Chemical Risk Management

To deal with chemical risk and comply with laws and regulations, we assess chemical substances, managing risk in three ways: prohibition, reduction, and control. We operate an online database for chemical substance management called CEGNET, using it to check on applicable laws and regulations and our own voluntary regulations. We collect and aggregate data on chemical substances: amount used, emitted or transferred. This information helps to reduce chemical emissions. We also regularly educate chemical substance managers.

## The CEGNET Chemical Substance Management System



## Reducing Chemical Substances

To prevent air pollution, we cut emissions of 41 volatile organic compounds (VOCs) based on a program of the Ministry of the Environment. We improve manufacturing processes to introduce VOC alternatives and install equipment to recover and render them harmless. We comply with Japan's PRTR Law<sup>†1</sup> through Group-wide monitoring of chemical substances released into the atmosphere or into public waters, or transferred outside our plants as waste, or discharged into sewage systems, reporting this to local Japanese governments. Although very small quantities need not be reported, our policy is to keep data on all PRTR substances, provided the amount is 10 kilograms or more per year, so that we can control these substances as well.

†1 PRTR Law: Pollutant Release and Transfer Register Law

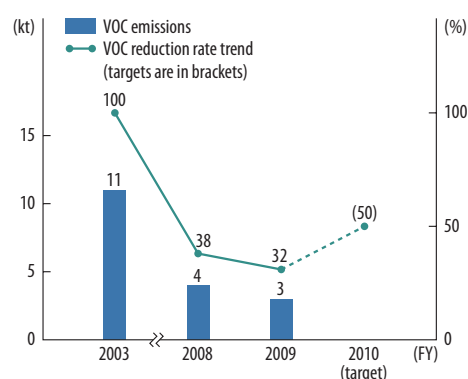
†2 Reduction in emission ratio: The percent difference between the 2005 emission ratio and the emission ratio in the subject year. The emission ratio is calculated as VOC emissions divided by total volume of VOCs handled.

## Goals & Results

### Reducing VOC Emissions in Japan

**Goal Reduction of 50% in fiscal 2010** (from fiscal 2000 levels)

**Result** In fiscal 2009, we reduced VOC emissions by 68 percent from fiscal 2000, exceeding the year's goal of 49 percent. Hitachi Cable's Tsuchiura Works installed equipment to adsorb, recover, and reuse VOCs emitted during its copper product cleaning process, cutting emissions into the atmosphere by 53 percent over the previous year.

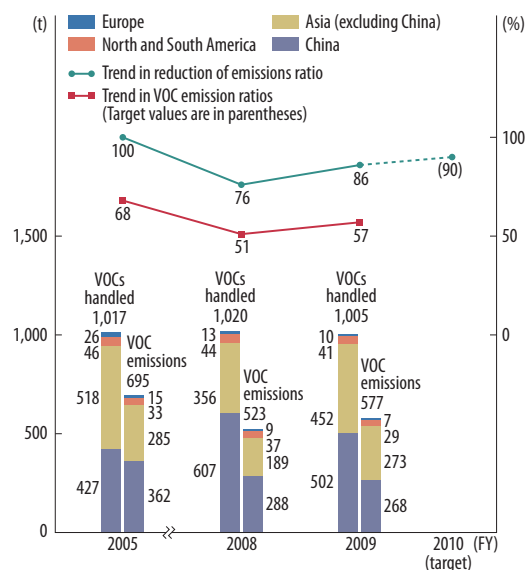


### Reducing VOC Emissions outside Japan

**Goal Reduction of 10% in fiscal 2010**

(Rate of reduction of emissions into the atmosphere<sup>†2</sup> from fiscal 2005 levels)

**Result** In fiscal 2009, we cut the VOC emissions ratio by 14 percent from fiscal 2005, surpassing the year's goal of 8 percent. In China, we installed VOC recovery equipment in new plants to reduce the emissions ratio there.



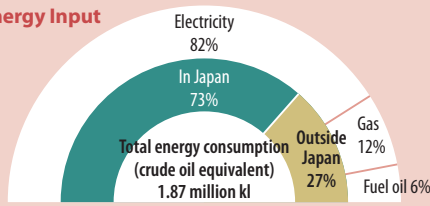


# Environmental Load Data Generated through Business Operations

This chart shows resource inputs and the environmental load for Hitachi Group business activities in fiscal 2009.

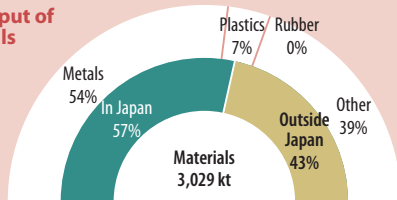
## Total Input of Resources

### Total Energy Input



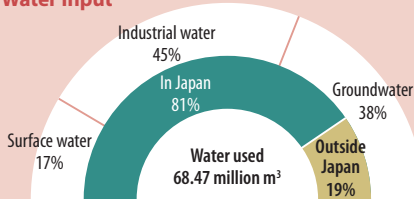
	In Japan	Outside Japan
Electricity	4.4 billion kWh	1.7 billion kWh
Gas		
Town gas, LNG	100 million m <sup>3</sup>	24 million m <sup>3</sup>
LPG	38,000 t	25,000 t
Fuel oil (heavy oil, kerosene, etc.)	95,000 kl	14,000 kl

### Total Input of Materials

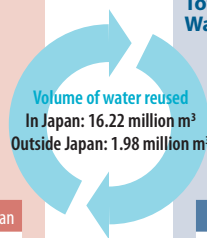


	In Japan	Outside Japan
Metals	1,087 kt	529 kt
Plastics	165 kt	49 kt
Rubber	8 kt	1 kt
Other materials	461 kt	729 kt
Chemical substances		
Handling volume for chemical substances covered under the PRTR Law†2	142 kt	17 kt
Handling volume for ozone-depleting substances	7.1 t	-
Handling volume for greenhouse gases	1,311 t	-

### Total Water Input



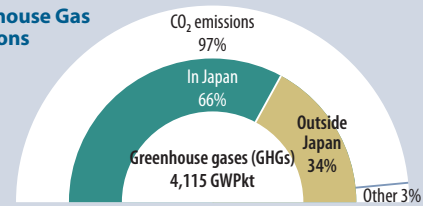
	In Japan	Outside Japan
Surface water	6.29 million m <sup>3</sup>	5.07 million m <sup>3</sup>
Industrial water	26.91 million m <sup>3</sup>	3.94 million m <sup>3</sup>
Groundwater	23.52 million m <sup>3</sup>	2.74 million m <sup>3</sup>



## Total Output of Environmental Load

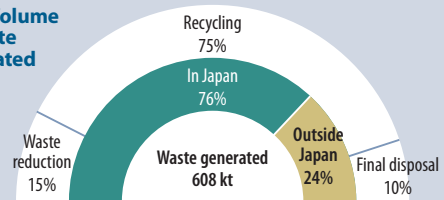
Total volume of products manufactured: 2,796 kt (in Japan); 488 kt (outside Japan)

### Greenhouse Gas Emissions



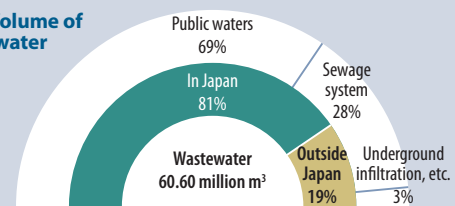
	In Japan	Outside Japan
CO <sub>2</sub> emissions	2,600 GWPkt†1	1,397 GWPkt
Other GHGs		
SF <sub>6</sub> (sulfur hexafluoride)	75 GWPkt	0
PFCs (perfluorocarbons)	23 GWPkt	0
HFCs (hydrofluorocarbons)	16 GWPkt	4 GWPkt

### Total Volume of Waste Generated



	In Japan	Outside Japan
Waste reduction	30 kt	51 kt
Recycling	409 kt	55 kt
Volume reused	64 kt	-
Volume of material recycled	315 kt	-
Volume of thermal (heat) recycled	30 kt	-
Final disposal	25 kt	38 kt
Chemical substances		
Discharge or transfer volume of chemical substances covered under the PRTR Law	2.5 kt	0.8 kt
SO <sub>x</sub> (sulfur oxides)	45 t	11 t
NO <sub>x</sub> (nitrogen oxides)	460 t	29 t
Volume of discharge for ozone-depleting substances	6 t	-
	(0.3 ODPt†3)	

### Total Volume of Wastewater



	In Japan	Outside Japan
Public water	39.18 million m <sup>3</sup>	2.8 million m <sup>3</sup>
Sewerage system	8.55 million m <sup>3</sup>	8.41 million m <sup>3</sup>
Underground infiltration, etc.	1.45 million m <sup>3</sup>	0.21 million m <sup>3</sup>
Water quality		
BOD (biological oxygen demand)	263 t	308 t
COD (chemical oxygen demand)	193 t	693 t

†1 Global Warming Potential: Coefficient derived by converting the global warming potential into CO<sub>2</sub> equivalent tonnes

†2 The 354 chemical substances covered under Japan's PRTR Law

†3 Ozone Depletion Potential: Coefficient derived by converting the global depletion potential into trichlorofluoromethane (CHC-11) equivalent tonnes

## Worldwide Environmental Partnerships

# Hitachi pursues open environmental activities

We disclose information on our environmental activities to deepen stakeholders' understanding and use two-way communication to enhance that action, while working to protect the environment through our business operations

### Targets and FY 2009 Results

	Target	Result	Further info
1	Widely communicate information on environmental activities	Communicate through a media mix, including our <i>Web site, advertising, and exhibitions</i>	p.35
2	Build environmental partnerships	Promote environmental protection in <i>partnership</i> with <i>suppliers</i> and <i>local residents</i>	p.37



# Environmental Communication

We use information disclosure and dialogue to build two-way communications

## Communicating Environmental Information

We publish reports every year on our environmental protection initiatives, their results, and our plans. From 2008, in addition to the *Hitachi Group Corporate Social Responsibility Report*, we issue the *Hitachi Group Environmental Sustainability Report* to enhance environmental information disclosure. The various Hitachi business sites and Group companies also issue reports. <sup>WEB</sup> Our Web site has information on environmental exhibitions, TV commercials, newspaper advertisements, and environmental awareness in key Group products, as well as the ideas of their developers.



In fiscal 2009, our TV commercial on next-generation smart grids won the outstanding performance prize in the environmental TV commercials category of the 13th Environmental Communication Awards.

Environmental Activities page on Hitachi's Web site

## Promoting Dialogue

Our dialogues with stakeholders not only deepen their understanding of our environmental activities but also give us opportunities to listen to their opinions and concerns about improving that action.

## Participation at Exhibitions

We have participated in the Eco-Products Exhibition—the largest on environmentally conscious products in Japan—every year since the first one in 1999. In fiscal 2009, we featured 20 environmentally conscious products and services in the energy, mobility, IT, home, and material zones based on achieving a sustainable society through social innovation business.

Around 2,300 visitors, or about 81 percent, responding to a questionnaire said that their opinion of our environmental activities had risen since viewing the exhibition. They also called for action and for initiative in realizing a low-carbon society.

Outside Japan, Hitachi participated in the World Energy Engineering Congress 2009, one of the largest U.S. expositions on saving energy and new energy sources, as well as the Business on Rails Exhibition & Conference in Brazil, focusing on environmentally conscious urban transportation. <sup>WEB</sup>



Eco-Products 2009 (December 2009, Japan)

We exhibited a model of a power generation system with less CO<sub>2</sub> emissions, as well as hybrid rail and other cutting-edge technologies and services. About 20,000 people visited our booth over three days.



WEEC 2009 (November 2009, U.S.A.)

Featuring a wind power generator, a factory energy management system, and air conditioners with outstanding energy-saving performance, our booth received many government and corporate visitors.

## Dialogue with Stakeholders

We held a dialogue meeting with stakeholders in Belgium in September 2009 on our European environmental business, briefing participants on our environmental strategy, as well as our rail and thermal power plant businesses in Europe. We also exchanged views on stakeholders' expectations, which included a clear indication of the social benefits and the costs of environmental technologies and a demonstration of environmental leadership by Hitachi.

### Responding to External Evaluations

To ensure that stakeholders receive the information that they require, we cooperate with socially responsible investment<sup>†1</sup> ratings and other environmental surveys. We also apply for awards as a means of energizing our activities. <sup>WEB</sup>

#### Selection as a DJSI World Component

The Dow Jones Sustainability Index World (DJSI World) is a stock index created by U.S.-based Dow Jones and Swiss-based Sustainable Asset Management (SAM) to assess the sustainability of 2,500 companies around the world based on their economic, social and environmental performance. In fiscal 2009, Hitachi was one of the 317 companies (including 32 Japanese) selected as a DJSI World component. We were rated particularly highly for environmental initiatives, outscoring other companies with a high 85 (against an average of 38).



DJSI logo

#### CDP Evaluation and Selection

Backed by 475 institutional investors with 55 trillion dollars in combined assets under management, the Carbon Disclosure Project (CDP) assesses the potential risks and opportunities that climate change poses for around 3,700

of the world's leading companies. We participate in the CDP, submitting environmental strategies and greenhouse gas emission data. In fiscal 2009, we were selected out of 500 Japanese companies assessed by the CDP as one of the 31 components of the Carbon Disclosure Leadership Index for our outstanding information disclosure.

### Boosting the Reliability of Environmental Information

In April 2009, one of our group companies was found to have misrepresented facts concerning its refrigerators. To prevent such incidents from recurring, our procedures for handling product environmental information have been clarified and checking systems were improved. Moreover, an advisory group on the product environmental information and expression was established in July 2009, including two external eminent figures. <sup>WEB</sup> This group regularly audits product environmental information by checking the procedures at Group companies, and discusses improvements to product catalogs from a consumer perspective. Through these initiatives, we will continue to boost the reliability of Hitachi Group environmental information.

†1 An approach to investing where shares are selected partly on the basis of criteria relating to CSR  
<sup>WEB</sup> CSR/environmental reports published by Hitachi Group companies  
<sup>WEB</sup> List of environmental exhibitions  
<sup>WEB</sup> External environment awards

### Enhancing Environmental Communication

**External Advisors, Advisory Group on the Product Environmental Information and Expression**  
 Yukiko Furuya, Board Member, Nippon Association of Consumer Specialists  
 Hideto Kawakita, CEO, International Institute for Human, Organization and the Earth



Corporate communication must be sufficiently clear to avoid misunderstandings, and must represent corporate philosophies and activities in a way that responds to consumer expectations and wishes. We urge the Hitachi Group to go beyond the proposal and provision of new environmentally conscious social structures and lifestyles to also demonstrate

leadership in communications, and to empower individual stakeholders to become part of realizing a sustainable society.



# Building Environmental Partnerships

Cooperating with stakeholders to realize a sustainable society

## Environmental Conservation Activities with Suppliers

Procuring materials with a low environmental load in cooperation with suppliers is an essential element of developing environmentally conscious products. We drew up the *Green Procurement Guidelines* to gain suppliers' understanding and cooperation on environmental conservation and for developing and supplying products with a lower environmental load.

Specifically, we ask suppliers to (1) conserve resources, (2) conserve energy, (3) aggressively pursue the three Rs,<sup>†1</sup> (4) reduce the amount of packaging, (5) manage chemical substances used in products, and (6) provide clear information. For (1) to (4), we encourage conservation by presenting case studies and by exchanging proposals for cutting costs and improving quality. For (5), we promote sharing of detailed information (see page 25).

To encourage environmental conservation by suppliers, we recognize suppliers which established environmental management systems with third-party certifications as green suppliers. In fiscal 2009, we launched the New MMM Club,<sup>†2</sup> exchanging information with the green suppliers on advanced environmental technologies and environmental regulations. We will continue to refine these environmental management techniques in cooperation with suppliers.



*Green Procurement Guidelines*

## Contributing to Environmental Education

We promote environmental education, in and outside Japan, to raise children's eco-awareness and to help them better understand our environmental activities.

Since fiscal 2007, Hitachi Plant Technologies, Ltd. has held an environment and science class, "Community Partnership Academy of Wisdom," on themes such as water management. In fiscal 2009, they held the first environment and science classes outside Japan, mainly organized by their Middle East Regional Headquarters. Instructors visited two Japanese and three elementary schools in the United Arab Emirates, holding classes for

333 children on the themes of learning about the buoyancy of air from hot-air balloons and using magnets to clean water. Meanwhile, in Shanghai and Beijing, since fiscal 2008, Hitachi (China) Ltd. employees have visited kindergartens and elementary schools. The students learned about global warming and putting environmental awareness into practice in their daily lives. As well, we are creating learning opportunities for children throughout Japan with hands-on demonstrations and classes, and the themes are being chosen by the schools.




Employees in the United Arab Emirates hold a hands-on class, using experiments to teach about water purification (Hitachi Plant Technologies, Ltd.)



Explaining environmental activities to local children at a plant that has wind and solar power generation facilities (Onuma Works, Hitachi Engineering & Services Co., Ltd.)

†1 **Three Rs:** reduce, reuse, and recycle

†2 **New MMM Club:** An organization for exchanging information on environmental management with small and medium-sized suppliers who have acquired third-party certification in environmental management systems

 **Green Procurement Guidelines**

## Building Environmental Partnerships

### Environmental Cooperation with Local Communities

To conserve the environment as a global citizen, we promote environmental beautification and natural conservation in and outside Japan by cooperating with employees, their families, and local residents. We also support local environmental conservation projects by

working with NGOs and NPOs that specialize in local environmental situations and activities.

To help protect biological diversity around the world, we have been conducting, among other activities, surveys of the butterfly Reverdin's Blue, an endangered species found near Mount Fuji, as well as planting trees to aid in the recovery of ecosystems.



In cooperation with the NGO Earthwatch Japan and guided by researchers, we have made annual surveys of the larvae and adult stages of the Reverdin's Blue butterfly since 2007.



In cooperation with the NPO G-Net, every year since fiscal 2005 we have assisted with afforestation and other greening projects in the Horqin Desert in the Inner Mongolia Autonomous Region of China.

### Activities to Protect Ecosystems

The United Nations Millennium Ecosystem Assessment published in March 2005 states that the people of the world depend on ecosystem services such as clean water and oxygen, marine and other food resources, and a stable climate. However, as a result of rapid development, ecosystems are being quickly degraded. To protect ecosystems and maintain biological diversity, society must reduce the environmental burden on ecosystems and promote their recovery.

To protect ecosystems as a corporation, we consider it necessary to conduct our activities through business, through environmental management, and through conservation mindful of the natural environment. We are promoting activities in these three areas in an integrated way.

As a member of the World Business Council for Sustainable Development (WBCSD), Hitachi Chemical Co., Ltd. has taken part in the development of Corporate Ecosystem Services Review (ESR) guidelines and is participating in the promotion of worldwide efforts to protect ecosystems.

#### Contribution through business

Supply products and services that protect the ecosystem through air, water, and soil purification.

See page 11

- Water treatment (ballast water purification systems, advanced sewage treatment systems, etc.)
- Air purification (denitrification catalyst systems, etc.)
- Soil treatment projects
- Product chemical substance control systems

#### Contribution through environmental management

Understand and reduce our burden on ecosystems through business activities.

See pages 25 and 32

- Controlling wastewater, controlling/reducing the use of chemical substances
- Using biological raw materials
- Controlling greenhouse gas emissions, promoting resource recycling

#### Conservation activities

Help ecosystem recovery through afforestation, etc.

See page 38

- Employees participate in tree planting
- Protecting endangered species
- Using trees and greenery at production sites to their best advantage



# Independent Review

To enhance the reliability of the data disclosed in this report, we have received the review by Bureau Veritas Japan Co., Ltd.\* on our fiscal 2009 performance.

\* A certification agency providing inspection, audit and certification services in areas such as marine; building compliance; health, safety and the environment; systems; and consumer products

The standards, guidelines and calculation methods used in collecting data appear on our Web site.

 Calculation methods for environmental load data

## Hitachi Group Environmental Sustainability Report 2010 Independent Review Report

To: Hitachi, Ltd.



BUREAU  
VERITAS

June 15, 2010

Bureau Veritas Japan Co., Ltd.  
System Certification Services Headquarters



Bureau Veritas Japan Co., Ltd. (Bureau Veritas) has been engaged by Hitachi, Ltd. (Hitachi) to conduct an independent review of its environmental data selected by Hitachi for inclusion in the Hitachi Group Environmental Sustainability Report 2010, issued under the responsibility of Hitachi. Our responsibility is to make a statement from an independent position; it is not to provide verification on the accuracy of reported data.

### 1. Review Outline

#### 1) Environmental load data generated through business operations in FY2009

Data Reviewed	Site Visited	Review Methodology
90%(*1) of Environmental load data generated through business operations of Hitachi and 900 consolidated companies (*1) based on Hitachi calculations.	Hitachi Head Office	- Review of documentary evidence produced by Hitachi Head Office and the Mito division - Interviews with relevant personnel of Hitachi Head Office and the Mito division
Environmental load data reported by the Mito division to Hitachi Head Office	Hitachi Mito division	- Site inspection about data monitoring procedure - Comparison between the reported data and the supporting documentary evidences

#### 2) Eco-Products registration data

Data Reviewed	Site Visited	Review Methodology
Data used for registration of: - 1 product in FY2008 - 4 products in FY2009	Hitachi Head Office	- Review of documentary evidence produced by Hitachi Head Office - Interviews with relevant personnel of Hitachi Head Office - Comparison between the data used for the registration and the supporting documentary evidences
- The percentage of products registered as Eco-Products, the number of registered models, and the sales ratio of Eco-Products in FY2007, 2008, and 2009 - The percentage of Super Eco-Products and the number of registered models in FY2009		

#### 3) Amount of contribution to CO2 emission reduction through the use of Hitachi products and services delivered to market by the end of FY2009

Data Reviewed	Site Visited	Review Methodology
The amount of contribution to CO2 emission reduction through the use of 10 different products and services	Hitachi Head Office	- Review of documentary evidence produced by Hitachi Head Office and the companies in charge of the relevant products and services - Interviews with relevant personnel of Hitachi Head Office and the companies in charge of the products and services - Comparison between the data used in the calculation of emissions reduction and the supporting documentary evidences (GHG Accounting and Reporting Principles in GHG Protocol Corporate Standard were used as review references.)

### 2. Findings

#### 1) Environmental load data generated through business operations in FY2009

- According to the environmental load data that Bureau Veritas reviewed, the information stated in the Hitachi Group Environmental Sustainability Report 2010 is consistent with the data collected and consolidated by Hitachi Head Office.
- No significant error was detected in the environmental load data reported by the Mito division to Hitachi Head Office.

#### 2) Eco-Products registration data

- The criteria applied in the registration of Eco-Products are consistent with the criteria prepared by Hitachi Head Office for the purpose.
- No significant error was detected in original data and evaluation results for Eco-Products registration..
- No significant error was detected in the percentage of products registered as Eco-Products, the number of registered models, and the sales ratio of Eco-Products.
- No significant error was detected in the percentage of Super Eco-Products and the number of registered models.

#### 3) The amount of contribution to CO2 emission reduction through the use of Hitachi products and services delivered to market by the end of FY2009

- The criteria used in the calculation of CO2 emissions reduction are consistent with the calculation criteria prepared by Hitachi Head Office for the purpose.
- No significant error was detected in the original data and the calculation results for CO2 emissions reduction.

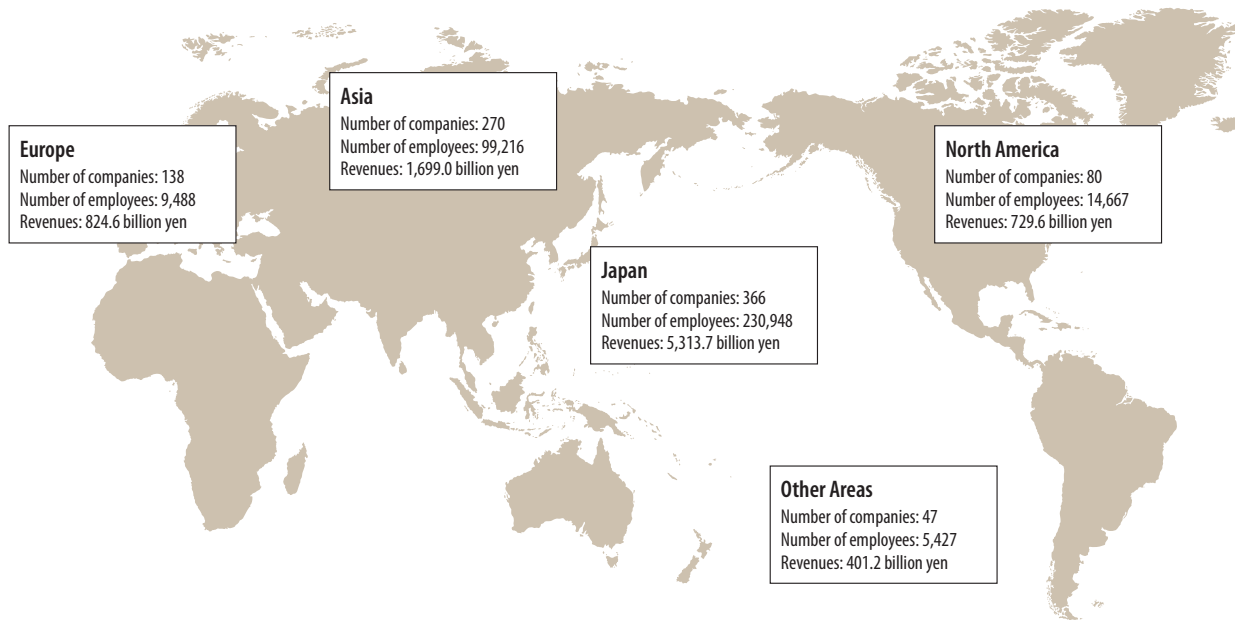
Bureau Veritas Japan review report

## Company Profile

Corporate Name	Hitachi, Ltd.
Incorporated	February 1, 1920 (founded in 1910)
Head Office	1-6-6 Marunouchi, Chiyoda-ku, Tokyo 100-8280, Japan
Representative	Hiroaki Nakanishi, Representative Executive Officer and President

## Hitachi Group Profile

Hitachi, Ltd. and the Hitachi Group make up a corporate group consisting of 1,058 companies: 365 consolidated subsidiaries within Japan and 535 outside Japan, as well as 71 equity-method affiliates in Japan and 86 outside Japan. For business activities, there are eleven business units, as indicated on the next page, with total revenues of about 9 trillion yen. The Group employs about 360,000 employees.



## Economic Performance

### As of March 31, 2010

Common Stock	408,810 million yen
Number of employees (unconsolidated basis)	31,065
Number of employees (consolidated basis)	359,746
Number of consolidated subsidiaries	900
	(Japan: 365, outside Japan: 535)
Number of equity-method affiliates	157
	(Japan: 71, outside Japan: 86)

### Period: Fiscal year ending March 31, 2010

(consolidated basis)

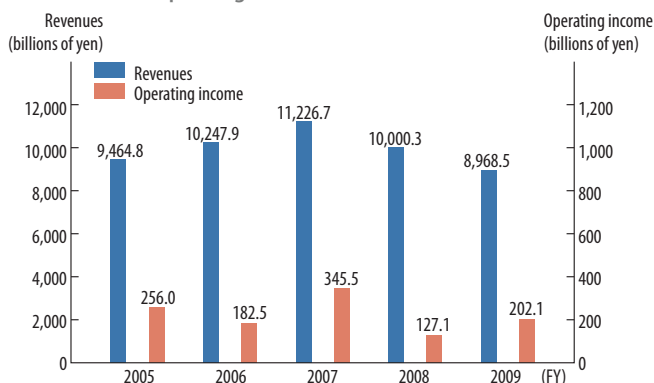
Revenues	8,968.5 billion yen
	(90% compared with the previous year)
Operating income	202.1 billion yen
	(159% compared with the previous year)
Capital investment	546.3 billion yen
	(69% compared with the previous year)
R&D expenditures	372.4 billion yen
	(89% compared with the previous year)
Overseas output as a percentage of consolidated net sales	24%

See Web site for economic performance reports.

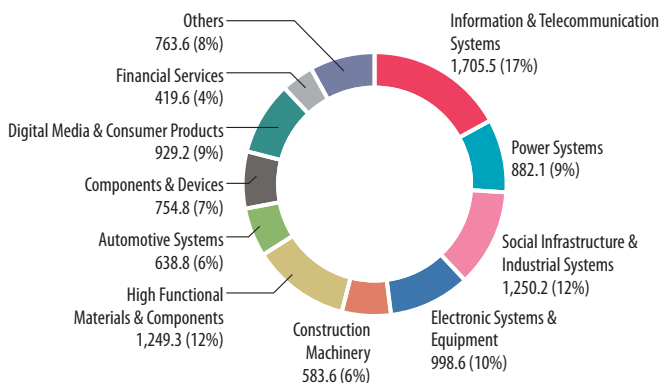
<http://www.hitachi.com/IR-e/>

## Financial Results (consolidated basis)

### Revenues and Operating Income



### Revenues by Industry Segment in Fiscal 2009 (billions of yen)



Total Sales by Industry: 10,175 billion yen  
Consolidated Net Sales: 8,968 billion yen

## Major Fields of Business and Products

<p><b>Information &amp; Telecommunication Systems</b></p> <ul style="list-style-type: none"> <li>● Systems integration, outsourcing services, software, disk array subsystems, servers, mainframes, telecommunications equipment, ATMs</li> <li>■ Hitachi-Omron Terminal Solutions, Corp., Hitachi Computer Products (America), Inc., Hitachi Computer Products (Europe) S.A.S., Hitachi Electronics Services Co., Ltd., Hitachi Information &amp; Control Solutions, Ltd., Hitachi Information Systems, Ltd., Hitachi Software Engineering Co., Ltd., Hitachi Systems &amp; Services, Ltd., Hitachi Data Systems Holding Corp. (U.S.A.), Hitachi Information &amp; Telecommunication Systems Global Holding Corporation</li> </ul>	 <p>Large disk array subsystem*</p>
<p><b>Power Systems</b></p> <ul style="list-style-type: none"> <li>● Thermal, nuclear, hydroelectric, and wind power generation systems</li> <li>■ Babcock-Hitachi K.K., Hitachi-GE Nuclear Energy, Ltd., Hitachi Engineering &amp; Services Co., Ltd., Hitachi Power Europe GmbH, Hitachi Power Systems America, Ltd.</li> </ul> <p>Construction of Electric Power Development Company's Ohma Nuclear Power Plant*</p> 	<p><b>Social Infrastructure &amp; Industrial Systems</b></p> <ul style="list-style-type: none"> <li>● Industrial machinery and plants, elevators, escalators, railway vehicles and systems</li> <li>■ Hitachi Industrial Equipment Systems Co., Ltd., Hitachi Elevator (China) Co., Ltd., Hitachi Building Systems Co., Ltd., Hitachi Plant Technologies, Ltd.</li> </ul>  <p>VX series escalator*</p>
<p><b>Electronic Systems &amp; Equipment</b></p> <ul style="list-style-type: none"> <li>● Semiconductor and LCD manufacturing equipment, testing and measurement equipment, medical electronics equipment, power tools, electronic part processing equipment</li> <li>■ Hitachi High-Technologies Corporation, Hitachi Koki Co., Ltd., Hitachi Kokusai Electric Inc., Hitachi Medical Corporation, Hitachi Via Mechanics, Ltd.</li> </ul>  <p>Hitachi High-Technologies' device characterization system</p>	<p><b>Construction Machinery</b></p> <ul style="list-style-type: none"> <li>● Hydraulic excavators, wheel loaders, mining dump trucks</li> <li>■ Hitachi Construction Machinery Co., Ltd.</li> </ul>  <p>Hitachi Construction Machinery's hydraulic excavator</p>
<p><b>High Functional Materials &amp; Components</b></p> <ul style="list-style-type: none"> <li>● Wires and cables, copper products, semiconductor and display-related materials, circuit boards and materials, specialty steels, magnetic materials and components, high-grade casting components and materials</li> <li>■ Hitachi Cable, Ltd., Hitachi Chemical Co., Ltd., Hitachi Metals, Ltd.</li> </ul>  <p>Neodymium-iron-boron permanent magnet NEOMAX®</p>	<p><b>Automotive Systems</b></p> <ul style="list-style-type: none"> <li>● Engine management systems, electric powertrain systems, drive control systems, car information systems</li> <li>■ Clarion Co., Ltd., Hitachi Automotive systems, Ltd., Hitachi Automotive Products (USA), Inc., Hitachi Auto Parts &amp; Service Co., Ltd.</li> </ul>  <p>Hitachi Automotive Systems' inverter for hybrid vehicles</p>
<p><b>Components &amp; Devices</b></p> <ul style="list-style-type: none"> <li>● Hard disk drives, LCDs, information storage media, batteries</li> <li>■ Hitachi Displays, Ltd., Hitachi Maxell, Ltd., Hitachi Display Device (Suzhou) Co., Ltd., Hitachi Global Storage Technologies Netherlands B.V.</li> </ul>  <p>Hitachi Vehicle Energy's lithium-ion battery for plug-in hybrid electric vehicles</p>	<p><b>Digital Media &amp; Consumer Products</b></p> <ul style="list-style-type: none"> <li>● Optical disk drives, flat-panel TVs, LCD projectors, mobile phones, room air conditioners, refrigerators, washing machines, air-conditioning equipment</li> <li>■ Hitachi Appliances, Inc., Hitachi Consumer Electronics Co., Ltd., Hitachi Media Electronics Co., Ltd., Hitachi Consumer Products (Thailand), Ltd., Hitachi Consumer Marketing, Inc., Hitachi-LG Data Storage Korea, Inc.</li> </ul>  <p>FLEXMULTI, Hitachi Appliances' multi-split air-conditioning systems for buildings</p>
<p><b>Financial Services</b></p> <ul style="list-style-type: none"> <li>● Leasing, loan guarantees</li> <li>■ Hitachi Capital Corporation</li> </ul>  <p>Hitachi Capital's multifunctional IC card</p>	<p><b>Others</b></p> <ul style="list-style-type: none"> <li>● General trading, logistics, property management</li> <li>■ Chuo Shoji, Ltd., Hitachi Life, Ltd., Hitachi Transport System, Ltd., Nikkyo Create, Ltd., Hitachi America, Ltd., Hitachi Asia Ltd., Hitachi (China) Ltd., Hitachi Europe Ltd.</li> </ul>  <p>Hitachi Transport System's Keihin Distribution Center, equipped with Hitachi security systems</p>

● Major Products & Services ■ Major Consolidated Subsidiaries (as of March 31, 2010) The products marked with an asterisk (\*) in the table above are those of Hitachi, Ltd.

(Notes) 1. Hitachi, Ltd. separated out the automotive systems segment to form Hitachi Automotive Systems, Ltd. on July 1, 2009.

2. Hitachi Mobile Co., Ltd. changed its name to Hitachi Auto Parts & Service Co., Ltd. as of April 1, 2009.

3. Hitachi, Ltd. separated out the consumer business, mainly digital media-related products such as flat-panel TVs, to form Hitachi Consumer Electronics Co., Ltd. on July 1, 2009.

# HITACHI

Inspire the Next

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 **Hitachi, Ltd.**

Environmental Strategy Office (For inquiries on environmental activities)

1-6-1 Marunouchi, Chiyoda-ku, Tokyo, 100-8220, Japan

Tel: +81-3-3258-1111 Fax: +81-3-4235-5835 <http://www.hitachi.com/environment/>

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**On the cover:** The cover photo is from Moanalua Garden Park (Monkey Pod tree), Oahu Island, Hawaii.

This tree has become known as the "Hitachi Tree" through television commercials over many years.

It represents the qualities that we like to emphasize at Hitachi—synergy, growth, and strength.

(Photo: Tor Johnson)



Printed using FSC-approved paper containing raw materials from properly managed forests certified by the FSC (Forest Stewardship Council)



**ZZ-E026** 2010.08

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# Request for Cooperation by Questionnaire

## Hitachi Group Environmental Sustainability Report 2010

What were your impressions after reading the *Hitachi Group Environmental Sustainability Report 2010*? Your opinion and comments are valuable to us for our future environmental activities. Please help us by completing the questionnaire below and sending it to the address on the right.

Environmental Strategy Office, Hitachi, Ltd.  
1-6-1 Marunouchi, Chiyoda-ku, Tokyo 100-8220 Japan

**Fax: +81-3-4235-5835**

### Q1. What were your impressions of the *Hitachi Group Environmental Sustainability Report 2010*?

(Please select only one from the following)

- |                     |                                       |                                      |                                       |
|---------------------|---------------------------------------|--------------------------------------|---------------------------------------|
| (1) Intelligibility | <input type="checkbox"/> High         | <input type="checkbox"/> Average     | <input type="checkbox"/> Low          |
| (2) Volume          | <input type="checkbox"/> Too much     | <input type="checkbox"/> Appropriate | <input type="checkbox"/> Too little   |
| (3) Layout          | <input type="checkbox"/> Easy to read | <input type="checkbox"/> Average     | <input type="checkbox"/> Hard to read |
| (4) Articles        | <input type="checkbox"/> Excellent    | <input type="checkbox"/> Average     | <input type="checkbox"/> Inadequate   |

- Please explain the reasons for your selections

### Q2. Which of the following sections of the report did you find valuable? (You may select more than one)

- Message from the Chief Environmental Strategy Officer  
 Hitachi Group Corporate Environmental Management

#### Contributing to Environmental Conservation through Business

- Environmental Business of the Hitachi Group  
 Preservation of Ecosystem
- Prevention of Global Warming  
 Environmental Action Plan
- Conservation of Resources

#### Eco-Mind & Global Environmental Management

- Environmental Management Structure  
 Improving on Environmental Initiatives

#### Next-Generation Products & Services

- Development of Environmentally Conscious Products  
 Conservation of Resources
- Prevention of Global Warming  
 Preservation of Ecosystem

#### Super Eco-Factories & Offices

- Super Eco-Factories & Offices  
 Conservation of Resources
- Prevention of Global Warming  
 Preservation of Ecosystem

#### Worldwide Environmental Partnerships

- Environmental Communication  
 Activities to Preserve Ecosystems
- Building Environmental Partnerships  
 Independent Review

### Q3. What is your opinion of the Hitachi Group's environmental activities? (You may select more than one in each category)

- (1) Areas of excellence
- Reduction of environmental load through products and services  
(Please check)  Prevention of Global Warming  Conservation of Resources  Preservation of Ecosystem
- Reduction of environmental load from business operations  
(Please check)  Prevention of Global Warming  Conservation of Resources  Preservation of Ecosystem
- (2) Areas for further improvement
- Reduction of environmental load through products and services  
(Please check)  Prevention of Global Warming  Conservation of Resources  Preservation of Ecosystem
- Reduction of environmental load from business operations  
(Please check)  Prevention of Global Warming  Conservation of Resources  Preservation of Ecosystem

### Q4. This year the Hitachi Group has divided its annual CSR reporting into two separate publications, the *Hitachi Group Corporate Sustainability Report 2010 Digest*, which summarizes our CSR initiatives, and the *Hitachi Group Environmental Sustainability Report 2010*, which focuses on our environmental activities. What is your opinion of the new format for reporting environmental activities?

- Reader-friendly — Reason(s):  More information  Easier to find information  Other ( )
- Not reader-friendly — Reason(s):  Too much information  Hard to find information  Other ( )

### Q5. Which of the following best describes you or your relationship to Hitachi? (Please select one only)

- Customer  Shareholder/investor  Supplier  Government/public administration employee
- Research/education institution employee  News/media employee  Student  NPO/NGO representative
- Resident near Hitachi Group facility  Hitachi Group employee/family member  Other ( )

### Q6. How did you find out about this *Environmental Sustainability Report*? (Please select one only)

- Newspaper  Magazine  Web site  Seminar  Exhibition  From a Hitachi employee  Other( )

### Q7. Did reading the *Environmental Sustainability Report 2009* improve your environmental image of the Hitachi brand?

- It improved my image  It did not change my image  It worsened my image

### Q8. Please write below any other comments or requests you have regarding the *Hitachi Group Environmental Sustainability Report* or the Group's environmental activities and initiatives

Thank you for your cooperation

We will use your feedback to improve our environmental report and our environmental activities.