CORPORATE SOCIAL RESPONSIBILITY 2008
Environmental Report

Changes for the Better

MITSUBISHI ELECTRIC

Environmental Report

Japanese Site

Mitsubishi Electric Group Environmental Vision 2021--Overview (1.35 MB)

Vision

The 5th Environmental Plan and Environmental Vision 2021: introductions to ideas and guidelines related to Mitsubishi Electric Group environmental management.

More

Fiscal 2008 Achievements

A report covering a summary of aims and achievements for fiscal 2008.

More

Environmental Management

A plan to improve environmental management through in-depth inspections, employee education, and the fostering of environmental awareness.

More

Eco-Products

Lessening environmental impact throughout product lifecycles by promoting low-environmental-impact products and product recycling.

More

Eco-Manufacturing

Lessening the environmental impact of manufacturing facilities and offices caused by our business activities, through energy saving, conservation of resources, and more.

More

Eco-Logistics

JIT (just in time) activities in logistics that center on promoting resource conservation and tackling global warming at the transportation stage.

More

Communications

Promoting various communication initiatives to further environmental protection initiatives.

More

Product Information

Publicizing data on the environmental characteristics of major products.

More

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Special Features
(Animations)

Environmental
Plan

Green
Procurement

Environmental Report

Environmental Policy & Code of Conduct

Introducing Mitsubishi Electric's environmental management practices, which seek to bring about a sustainable society through "thoroughgoing" defensive and new proactive measures.

More

Environmental Vision 2021

The company's long-range vision for environmental management, with specific long-term targets intended to help prevent global warming and achieve a recycling-based society by the year 2021, the centennial of the founding of Mitsubishi Electric.

More

Environmental Plan

Since fiscal 1994, Mitsubishi Electric has formulated an Environmental Plan, under which the company organizes and carries out its voluntary actions for environmental preservation.

More

Vision

Environmental Policy and Code of Conduct

In order to protect the environment for future generations, the Mitsubishi Electric Group carries out environmental initiatives in all aspects of its business operations in accordance with the Core Environmental Policy and Environmental Code of Conduct stated below.

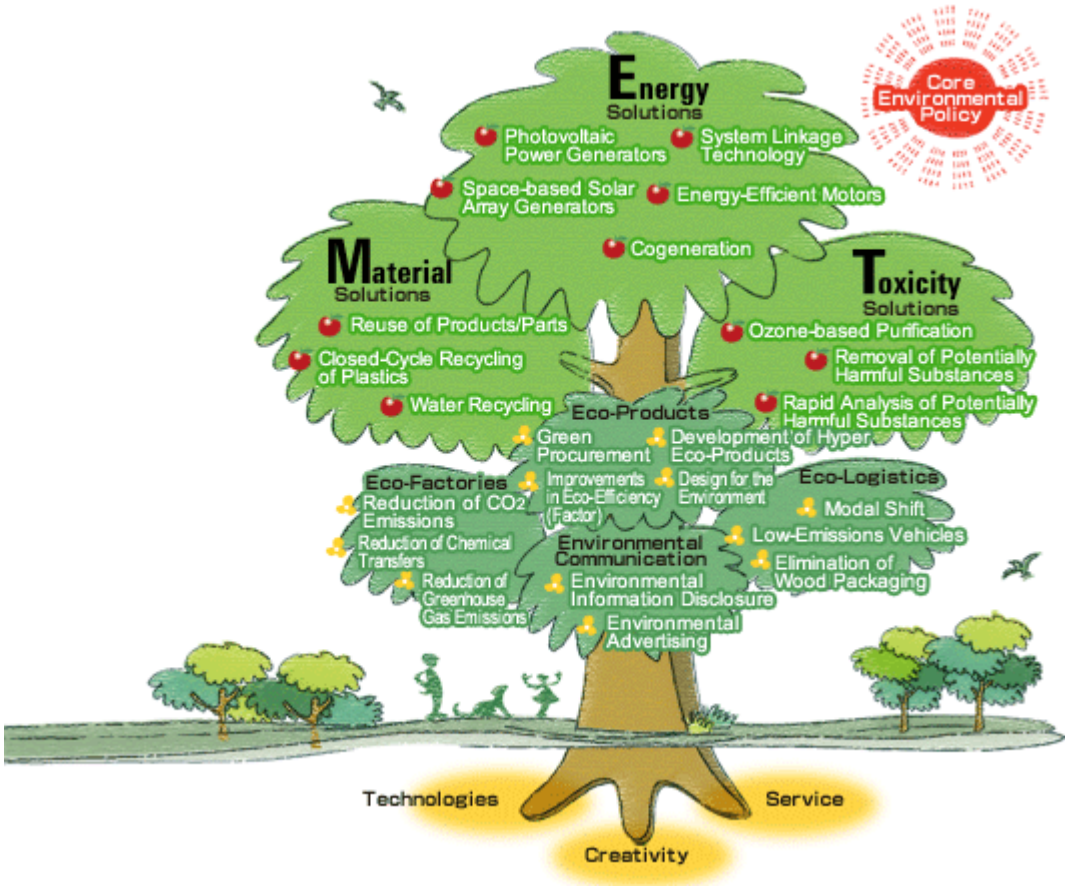
Environmental Policy

The Mitsubishi Electric Group promotes sustainable development and is committed to protecting and restoring the global environment through technology, through all its business activities, and through the actions of its employees.

Environmental Code of Conduct

- We assess the environmental impacts of our products and business activities, and strive to reduce these negative impacts by developing and introducing environmentally compatible technologies and processes.
- In our business activities we work to help create a society with sound material cycles, by supporting efforts to better understand environmental issues, and by making use of technologies and information.
- We establish environmental management systems at all of our factories and operate them according to voluntary standards. We seek continuous improvement in our environmental management by conducting environmental audits and other efforts.
- We educate, train and motivate employees to be good environmental stewards, and support and encourage activities that promote environmental protection.
- We support communication and cooperation regarding environmental protection worldwide.

M (Materials) refers to the efficient use of resources, E (Energy), to the efficient use of energy; and T (Toxicity), to reducing the use of substances potentially harmful to the environment. It is from these three perspectives -- MET -- that we work to reduce the negative environmental impact of our business activities. In order for our MET activities to blossom and bear fruit in the form of technologies and products with less negative impact on the environment, we will conscientiously cultivate the MET tree of environmental management.


Core Environmental Policy
Energy Solutions
Photovoltaic Power Generators
System Linkage Technology
Space-based Solar Array Generators
Energy-Efficient Motors
Cogeneration
Material Solutions
Reuse of Products/Parts
Closed-Cycle Recycling of Plastics
Water Recycling
Toxicity Solutions
Ozone-based Purification
Removal of Potentially Harmful Substances
Rapid Analysis of Potentially Harmful Substances
Eco-Products
Green Procurement
Development of Hyper Eco-Products
Eco-Factories
Reduction of CO2 Emissions
Reduction of Chemical Transfers
Reduction of Greenhouse Gas Emissions
Improvements in Eco-Efficiency (Factor)
Design for the Environment
Eco-Logistics
Modal Shift
Low-Emissions Vehicles
Elimination of Wood Packaging
Environmental Communication
Environmental Information Disclosure
Environmental Advertising
Technologies
Service
Creativity

Vision

Mitsubishi Electric Environmental Vision 2021

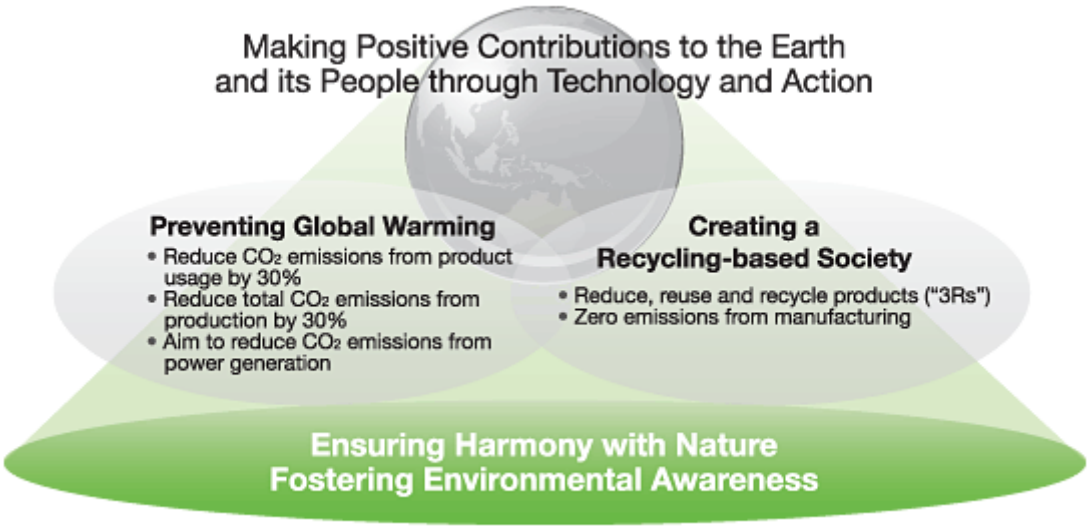
Environmental Vision 2021 is the long-term environmental management vision of the Mitsubishi Electric Group. It establishes a framework for realizing a sustainable planet, and defines long-term initiatives to prevent global warming and to create a recycling-based society.

Using technology and action to make a positive difference by the year 2021, the centennial of the founding of Mitsubishi Electric.

The guideline, "making positive contributions to the earth and its people through technology and action", calls for the company to work toward the realization of a sustainable society by utilizing our wide-ranging and sophisticated technologies as well as by promoting assertive and persistent actions by our employees.

The Vision sets 2021 as the target year, commemorating the 100th anniversary of Mitsubishi Electric's founding.

- Learn more in our Environmental Topics section...
- From the President: "The Goals of Environmental Vision 2021"
- Mitsubishi Electric Group Environmental Vision 2021 - Overview (1.35MB)
- News Release 2007-10-22:
  Mitsubishi Electric Announces "Environmental Vision 2021." (111KB)



Helping to Prevent Global Warming

To help prevent global warming, we will:

- Work to create and popularize innovative energy-saving products to achieve the goal of reducing CO_2 emissions from product usage by 30% compared to fiscal 2001
- Strive to reduce CO_2 emissions from product production by 30% (520,000 tons) for the Mitsubishi Electric Group overall, as a precondition for sustainable growth
- Reduce CO_2 emissions from power generation by supplying the power industry with products and systems that do not give off CO_2, including solar power and nuclear power systems

Helping to Create a Recycling-Based Society

To help create a recycling-based society, we will:

- Develop sustainable resource cycles by reducing waste output, reusing resources and recycling resources to give them new life
- Strive for zero waste output from production processes

Ensuring Harmony with Nature and Fostering Environmental Awareness

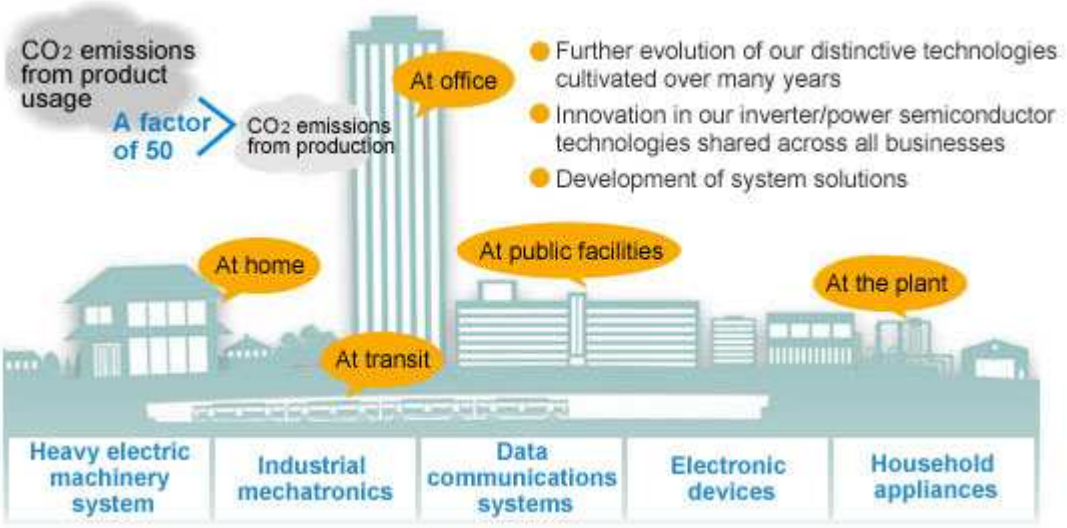
To help ensure harmony with nature and foster greater environmental awareness, we will:

- Teach employees the importance of maintaining harmony with nature by providing opportunities for nature observation and direct participation in conservation activities so that they come to act autonomously for the sake of the environment
- Engage in nature conservation activities to restore damaged woodland environments

Initiatives to Prevent Global Warming

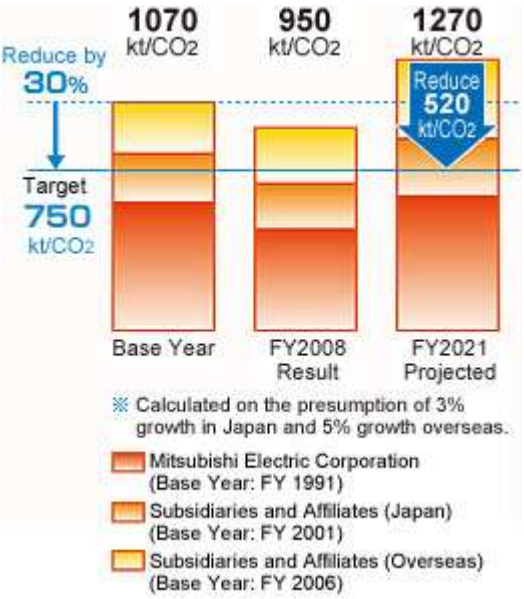
Aim to Reduce CO_2 Emissions from Product Usage by 30%

A wide variety of energy-saving products



Aim to Reduce Total CO_2 Emissions from Production by 30%

We will continue to invest in energy efficiency at a targeted rate of 0.1% of production value and will carry out three major policies, which include the purchase of high-efficiency equipment.



- High-Efficiency Equipment
  Install high-efficiency equipment through continued investment in energy efficiency at a targeted rate of 0.1% of production value


EX Series: Super Energy Efficient Transformers

- Energy Loss Minimization (EM Activities)
  Set energy efficiency targets and carry out EM activities

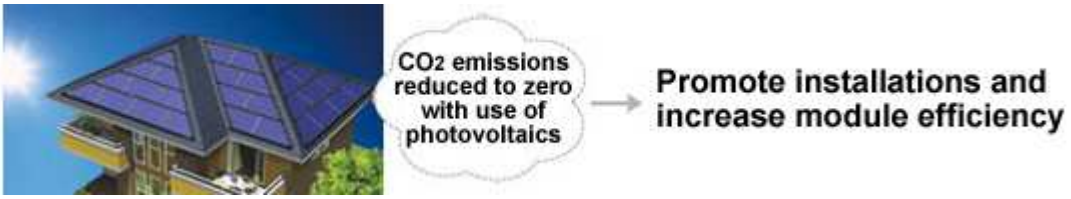

Managing energy use

- Photovoltaic Power Generation
  Install photovoltaic power systems at model factories, acquire expertise and expand to the rest of the company


PV power system installed at Nagoya Works

Helping to Reduce CO_2 Emissions from Power Generation

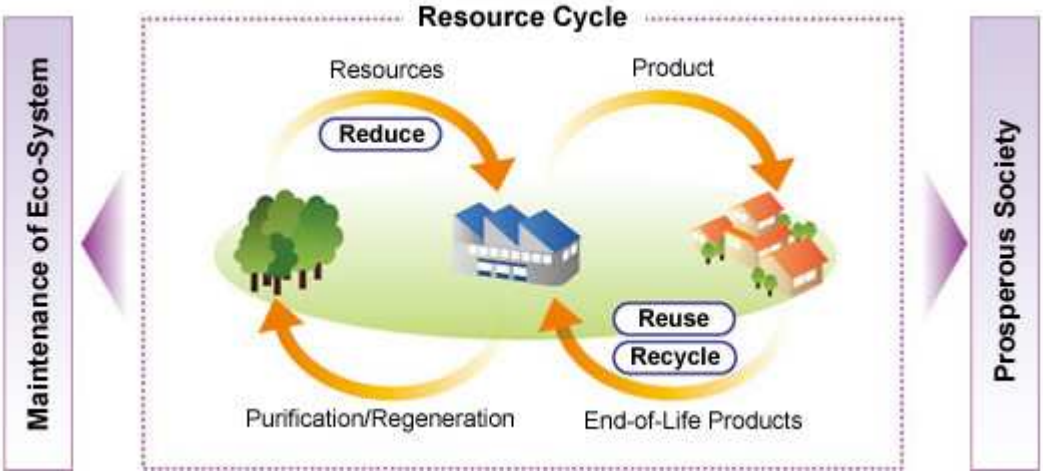
We will help reduce CO_2 emissions from power generation and thereby help prevent global warming by supplying the power industry with products and systems that do not give off CO_2, including photovoltaic power and nuclear power systems.



Initiatives to Achieve a Recycling-Based Society

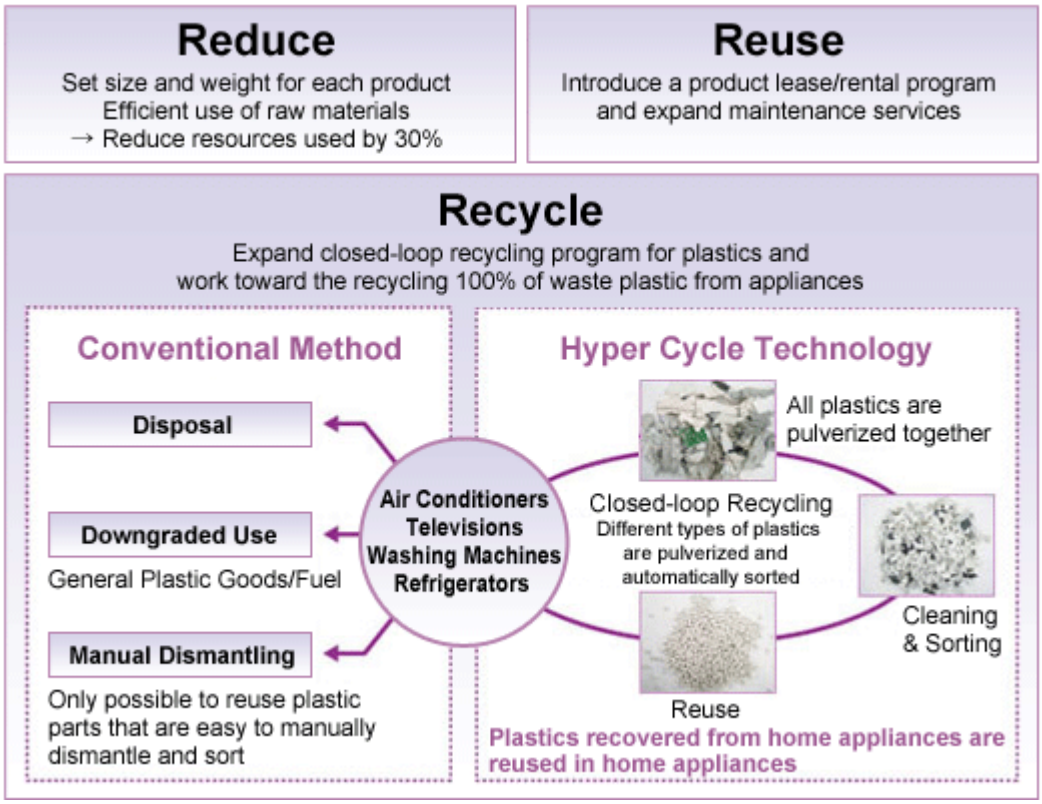
Reduce, Reuse and Recycle Products (3Rs) Utilizing DfE and LCA Technologies

Creating products that are 3R friendly through their lifecycles.



Zero Emissions (Reducing the Direct Landfill of Waste to Zero)

Restricting generation of waste and promoting the efficient reuse and re-resourcing of waste.



Ensure Harmony with Nature and Foster Environmental Awareness

Mitsubishi Electric Outdoor Classroom and Leadership Training

Education for children and leadership training for 1000 people in the promotion of nature observation and conservation.

Forest Nurturing Activity

Reforestation helps to prevent global warming, protects against natural disasters, and contributes to the preservation of biodiversity.

Woodland Preservation Activities

With a scale of 1,000,000 people including local residents, employees, families, people from all over the world band together for this nature conservation activity.

Vision

Environmental Plan

The Systemization of Environmental Planning

The Mitsubishi Electric Group has carried out voluntary environmental initiatives systematized under our Environmental Plan since fiscal 1994. The Environmental Plan consists of a Core Environmental Policy, an Environmental Code of Conduct, an Environmental Management System to carry them out, and environmental targets centering on Materials, Energy and Toxicity, which we refer to as "MET."

Past Initiatives and the 5th Environmental Plan

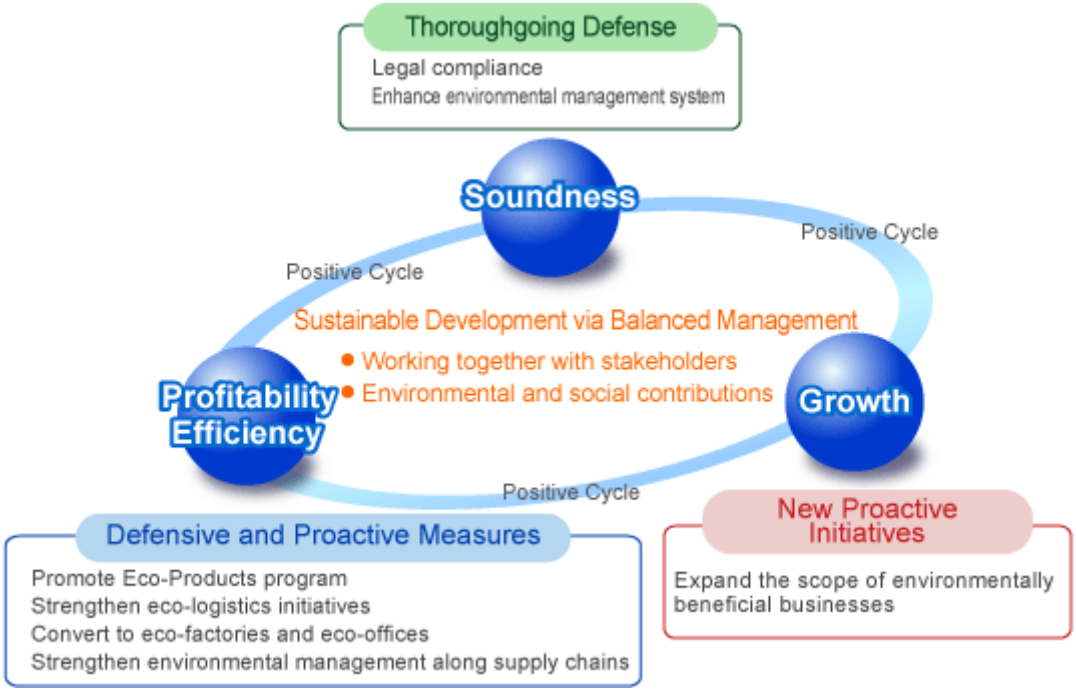
Under the 1st Environmental Plan (FY1994-1996), we carried out environmental measures at production plants.

The focus of the 2nd Environmental Plan (FY1997-2000) was instituting an ISO 14001 management system and applying environmental measures for products.

Our 3rd Environmental Plan (FY2001-2003) was based on the preceding two plans and promoted initiatives for strengthening management foundations, reinforcing legal compliance systems and facilitating disclosure of environmental information.

Under the 4th Environmental Plan (FY2004-2006), we aimed at environmental management that would contribute to the formation of a recycling-based society and conducted initiatives to integrate environmental considerations into all corporate activities, not just factories and products, expand the scope of corporate information disclosure and assessment, reinforce legal compliance and discover and prevent potential risks.

Our 5th Environmental Plan (FY2007-2009) has expanded on this approach. Under it we are working to integrate environmental management with corporate management based on a concept of sustainable development that is brought about by management that balances thoroughgoing defense (soundness), defensive and proactive measures (profitability and efficiency) and developing new proactive initiatives (growth).



5th Environmental Plan Overview

Enhancing Environmental Management on a Global, Consolidated Basis and FulfillingCorporate Social Responsibilities

Thoroughgoing Defense

- Comply with laws and regulations, and ensure thoroughgoing management to this end
- Incorporate the core business processes of each business group—product development,manufacturing, sales, etc.—into the environmental management system (ISO14001:2004) and carry out improvement activities
- Double the number of key environmental personnel (employees directly involved in environmental issues) by enhancing training programs
- Strengthen preventive maintenance measures by revamping environmental facilities

Improving Environmental Performance Together with Stakeholders

Defensive and Proactive Measures

- Strengthen initiatives down the entire supply chain, from development and design to procurement, production, delivery and waste processing
- Continue investing in energy efficiency with a goal of 0.1% of production value and reduce carbon dioxide emissions by 25% by fiscal 2011 (compared to fiscal 1991) by making energy loss readily apparent
- Construct an internal certification system for eco-factories and eco-offices by developing guidelines for them

Enhancing Environmentally Beneficial Businesses

Developing New Offensive Initiatives

- Install Mitsubishi Electric eco-products at the company, and leverage the acquired know-how and energy conservation in environmentally-beneficial business (expand environmentally-beneficial business to ¥100 billion by fiscal 2011 while putting global markets into consideration)

Environmental Report

Scope of Report

This report provides information on noteworthy initiatives, events and changes in fiscal 2008. The period covered and list of companies with an environmental plan are shown here.

More

Targets and Results

We seek to bolster balanced management with defensive and proactive environmental initiatives.

More

Lifecycle Impact

Presenting an overview of the environmental impact of used products, collected materials, sales logistics, and energy consumption.

More

Environmental Accounting

By actively investing a targeted 0.1% of per unit sales in high-efficiency and energy-saving equipment as a way of preventing global warming, we have realized substantial income and savings.

More

Awards

Presenting fiscal 2008 award results.

More

Fiscal 2008 Achievements

Scope of Report

This report provides information on noteworthy initiatives, events and changes in fiscal 2007 pertaining to the Mitsubishi Electric Group's activities to help bring about a sustainable society. The report takes into account the Plan-Do-Check-Act cycle in covering our various approaches and achievements, as well as future policies and issues.

Mitsubishi Electric is committed to public accountability and broadening communication with all its stakeholders. We encourage and appreciate any honest opinions and advice related to the further improvement of this report.

Period Covered

April 1, 2007 to March 31, 2008
*The report also includes some information on policies, targets and plans beyond fiscal 2008.

Report Scope

Companies with an environmental plan: Mitsubishi Electric and 99 affiliates (77 domestic, 22 overseas)

77 Domestic Affiliates

Inaryo Technica Corporation	Mitsubishi Electric Control Software Corporation
Uemori Denki Co., Ltd.	Mitsubishi Electric System & Service Co., Ltd.
SGC Company Ltd.	Mitsubishi Electric Information Network Corporation
Osram-Melco Ltd.	Mitsubishi Electric Lighting Corporation
Kita Koudensha Corporation	Mitsubishi Electric Documentex Ltd.
Kohshin Electric Corporation	Mitsubishi Electric Tokki Systems Corporation.
The Kodensha Co., Ltd.	Mitsubishi Electric Business Systems Co., Ltd.
Koryo Electric Co.,Ltd.	Mitsubishi Electric Building Techno-Service Co., Ltd.
Sun-A Micro-Semiconductor Co., Ltd.	Mitsubishi Electric Plant Engineering Corporation
Sanshin Electronics Co., Ltd.	Mitsubishi Electric Home Appliance Co., Ltd.
Sanryo Technica Co., Ltd.	Mitsubishi Electric Micro-Computer Application Software Co., Ltd.
Sanwa Electric Co., Ltd.	Mitsubishi Electric Mechatronics Software Corporation
SPC Electronics Corporation	Mitsubishi Electric Metecs Co., Ltd.
Japan Net Corporation	Mitsubishi Electric Logistics Corporation
Super Communications, Inc.	Mitsubishi Electric Life Service Corporation
Seiryo Technica Co., Ltd.	Mitsubishi Space Software Co., Ltd.
Setsuyo Astec Corporation	Soryo Electronic Devices Corporation
Setsuryo Technica Co., Ltd.	Sowa Technica Inc.
Mitsubishi Precision Co., Ltd.	Taiyo Musen Co., Ltd.
Miyoshi Electronics Corporation	Tada Electric Co., Ltd.
Meiryo Technica Corporation	Churyo Technica Co., Ltd.
Melco Airtec Corporation	Melco Control Products Corporation
Chiyoda Computer Service Inc.	Melco Display Technology Inc.
Choryo Inc.	Melco Technorex Co., Ltd.
Tsuryo Technica Corporation	Melco Power Systems Corporation
DB Seiko Co., Ltd.	Melco Mechatronic System Engineering Corporation
Toyo Engineering Co., Ltd.	Rakuryo Technica Co., Ltd.
Toyo Electric Corporation	Ryoei Technica Corporation
Tokan Co., Ltd.	Ryosai Technica Co., Ltd.
Nagasaki Ryoden Technica Co., Ltd.	Ryosan Industry Corporation
Nakayama Machinery Co., Ltd.	Ryoshin Kosan Co., Ltd.
Nihon Kentetsu Co., Ltd.	Ryoden Asahi Technica Co., Ltd.
Hyper Cycle Systems Corporation	Himeryo Technica Co., Ltd.
Ryoden Kasei Co., Ltd.	Fukuryo Semiconductor Engineering Corporation
Ryoden Koki Engineering Co., Ltd.	Mitsubishi Electric Information Systems Corporation
Ryoden Shonan Electronics Corporation	Mitsubishi Electric Information Technology Corporation
Ryohoku Electronics Corporation	Mitsubishi Electric FA Industrial Products Corporation
Ryoma Technica Co., Ltd.	Waryo Technica Co., Ltd.
Mitsubishi Electric Engineering Co., Ltd.	

22 Overseas Affiliates

Electric Powersteering Components Europe s.r.o.
Laguna Auto-Parts Manufacturing Corporation
Mitsubishi Digital Electronics America, Inc.
Mitsubishi Electric (Malaysia) Sdn. Bhd.
Mitsubishi Electric Air Conditioning Systems Europe Ltd.
Mitsubishi Electric Automation (Thailand) Co., Ltd.
Mitsubishi Electric Automation, Inc.
Mitsubishi Electric Automotive America, Inc.
Mitsubishi Electric Automotive Czech s.r.o.
Mitsubishi Electric Automotive Europe B.V.
Mitsubishi Electric Automotive India Pvt. Ltd.
Mitsubishi Electric Consumer Products (Thailand) Co., Ltd.
Mitsubishi Electric de Mexico S.A. de C.V.
Mitsubishi Electric Power Products, Inc.
Mitsubishi Electric Thai Auto-Parts Co., Ltd.
Mitsubishi Elevator Asia Co., Ltd.
Siam Compressor Industry Co., Ltd.
Mitsubishi Electric (Guangzhou) Compressor Co., Ltd.
Mitsubishi Electric Dalian Industrial Products Co., Ltd.
XD Mitsubishi Electric Switchgear Co., Ltd.
Shanghai Mitsubishi Electric & Shangling Air-Conditioner and Electric Appliance Co., Ltd.
Taiwan Mitsubishi Elevator Co., Ltd.

Fiscal 2008 Achievements

Targets and Results

Overview of Activities in Fiscal 2008

Fiscal 2008 (fiscal year ending March 31, 2008) marked the second year of our 5th Environmental Plan, which seeks to bolster balanced management with defensive and proactive environmental initiatives, and we have endeavored to realize a variety of goals within the Plan. In addition, targeting the year 2021, we established Environmental Vision 2021, a set of initiatives to prevent global warming, to achieve a recycling-based society, to ensure harmony with nature, and to foster environmental awareness.

1. Enhancement of Environmental Management on a Global, Consolidated Basis (Thorough Defense)

We continued to strengthen management inside and outside of Japan with a view to expanding global environmental management to include non-production sites in Japan and overseas.

In Japan, the Head Office conducted environmental audits at a total of 116 domestic affiliate companies, including non-production companies. Overseas, we held regional environmental conferences in Europe, America, China, and Asia. We also carried out environmental site-checks at our production companies, focusing on problem-solving. In addition we continued our program of training key environmental personnel to take on the defensive environmental initiatives of the future; over the last four years, some 94 key personnel have been trained. This education is also being carried out in China, which is experiencing a rapid increase in environmental legislation due to heightened environmental awareness.

2. Improvement in Environmental Performance along the Entire Supply Chain (Defensive and Proactive Measures)

Mitsubishi Electric worked to reduce the environmental impact of procurement, production, products, logistics, disposal, and recycling in all stages of our products' lifecycles.

Towards the prevention of global warming, we achieved a total CO_2 reduction of 12,871 tons due to energy-savings from productivity improvement activities and proactive energy-saving investments. As a result, total CO_2 emissions were kept down to 474,000 tons, an increase of 15,000 tons from the previous year. When compared to fiscal 1991, this is a reduction of 65.6% in terms of CO_2 emissions per unit of real net sales, already achieving the voluntary target set for 2010.

In the area of waste reduction, Mitsubishi Electric's final disposal ratio was 0.16% on a non-consolidated basis, achieving zero emissions for the sixth straight year. Affiliates in Japan improved to 1.44%, and overseas affiliates improved to 4.95%, getting closer to zero emissions status.

With regard to environmental considerations in products, we steadily expanded our Design for the Environment program as a proactive initiative, and achieved an Eco-Products ratio (to production output) of 86%. We also focused on developing and evaluating material recycling technologies for plastics. In addition, we continued our Green Accreditation system for appropriate control of chemical substances used in products. By the end of fiscal 2008, we certified 92% of our main suppliers.

In the area of distribution, we are carrying out a logistics JIT improvement project that aims to cut waste, increase efficiency and reduce environmental impact. In products [sales] logistics, total CO_2 emissions during fiscal 2008 were reduced 33% on a non-consolidated basis compared with fiscal 2003, thereby achieving the target for the 5th Environmental Plan. Packaging material usage was reduced 18% on a non-consolidated basis compared with fiscal 2005, allowing us to achieve our targets (targets are per unit of net shipping weight).

3. Expansion of Environmentally Beneficial Businesses (Developing New Offensive Initiatives)

Sales for the energy-saving solution business was ¥84.29 billion, an increase of 6.5% compared with the previous fiscal year. In response to the rapid increase in demand for photovoltaic power generation systems, we expanded our PV cell and module production line, aiming to increase annual production capacity from the current 150MW to 220MW in October 2008. We aim to further increase annual production capacity to 500MW in fiscal 2013.

4. Environmental Vision 2021

Environmental Vision 2021 is the Mitsubishi Electric Group's long-range vision for environmental management, which looks towards the year 2021the centennial of the company's foundingby which to achieve specific and meaningful results. Based on the principle of "Making Positive Contributions to the Earth and its People through Technology and Action," the Vision defines a set of initiatives for realizing a sustainable society through application of the company's broad range of high-level technologies and the actions of its employees.

In fiscal 2009, in accordance with this Environmental Vision, we will accelerate our efforts to prevent global warming and establish a recycling-based society, while helping to foster environmental awareness and ensure harmony with nature together with employees, their families and society.

FY 2008 Targets and Results

Well done Almost there More effort needed

Environmental Management

Enhance environmental management systems		
FY2009 Targets ● Expand global environmental management to include non-production sites in Japan and overseas ● Incorporate regular company management and administration into environment management, and strengthen supervisory responsibilities at the business group level ● Conduct environmental audits at both production sites and non-production sites in Japan and overseas, and increase the number of environmental auditors	**FY2008 Targets**	● Hold regional conferences in the U.S., China, Asia and Europe ● Conduct auditing training at sites subject to audits and ensure auditor competence
	FY2008 Achievements	● Held regional conferences in the U.S., China, Asia and Europe ● Conducted environmental audits and compliance inspections at 116 affiliates in Japan, and environmental inspections at 9 manufacturing sites overseas ● 168 people participated in entry-level training for environmental auditors conducted in Japan; 146 people participated in intermediate-level training
	Level of Achievement	

	(Self-Evaluation)	
Strengthen preventative protection in connection with the environment		
FY2009 Targets ● Increase the number and competence of environmental management administrators in line with the environmental management system ● Formulate and execute a plan to quickly deal with stored PCB, and soil and groundwater contamination ● Devise and carry out measures to prevent environmental accidents and strengthen environmental protection	**FY2008 Targets**	● Have at least 20 employees complete key environmental personnel training ● Create processing plan for stored PCB, and implement processing
	FY2008 Achievements	● 30 employees completed key environmental personnel training ● Processed 55 PCB condensers according to the Plan
	Level of Achievement (Self-Evaluation)	
Further develop an environmental mindset (Raise environmental awareness and train personnel)		
FY2009 Targets ● Foster employees who voluntarily engage in environmental protection, promote nature activities in which employees participate together with their families, and promote activities that contribute to society from an environmental perspective ● Raise environmental awareness through education and by developing an educational system that takes into account the employee's stage in life	**FY2008 Targets**	● Hold "Mitsubishi Electric Outdoor Classroom" in six areas that participated in leader training course in fiscal 2007 ● Promote local woodland conservation as a social contribution initiative ● Raise environmental awareness through education and by developing an educational system that takes into account employee career stages
	FY2008 Achievements	● Held "Mitsubishi Electric Outdoor Classroom" in six areas (seven times). Approximately 200 people from local communities, mostly children, participated along with employees and their families. Trained 17 new leaders in the Toumeihan area ● Began woodland conservation activities (Nagoya area and Kobe area) ● Conducted Mt. Fuji forest initiative three times ● Conducted in-house training for different career stages (new-comer, regular, specialist). A total of 50,000 group employees participated
	Level of Achievement (Self-	

	Evaluation)	
Expand environmental businesses		
FY2009 Targets ● Expand environmentally beneficial businesses with the goal of ¥100.0 billion in sales by fiscal 2011	**FY2008 Targets**	● Promote energy saving solutions business for global warming prevention measures ● Increase sales from environmentally beneficial businesses for corporations by 7% over the previous year
	FY2008 Achievements	● Increased sales from environmentally beneficial businesses for corporations by 6.5% (¥84.29 billion) over the previous fiscal year
	Level of Achievement (Self-Evaluation)	
Hold dialogues with diverse groups of stakeholders and maintain channels of communication		
FY2009 Targets ● Enhance dialogue and collaboration ● Enhance environmental communication in every region, including overseas	**FY2008 Targets**	● Exhibit at environmental exhibitions (in Japan and overseas) ● Enhance environmental information provided on website and Environmental Sustainability Report ● Conduct awareness-raising activities linked with national campaigns against global warming (Team -6% Campaign)
	FY2008 Achievements	● Exhibited at Eco-Products Exhibition and the Eco-Products International Fair (Asia) ● Published environmental report on Website; published printed digest version of the report (Japanese and English), and a Chinese version ● Cooperated in 1 kg per person per day CO_2 reduction campaign; promoted cool-business dress code
	Level of Achievement (Self-Evaluation)	

Eco-Products: Initiatives at the Procurement/Product Use/Recycling Level

<table>
<tr><th colspan="3">Environmental considerations down the supply chain</th></tr>
<tr><td rowspan="3">FY2009 Targets
Create Mitsubishi Electric Group Green Accreditation Guidelines and give priority to certified suppliers</td><td>FY2008 Targets</td><td>Create Mitsubishi Electric Group Green Accreditation Guidelines and achieve 90% certification ratio among all suppliers</td></tr>
<tr><td>FY2008 Achievements</td><td>Achieved 92% Green Accreditation among suppliers</td></tr>
<tr><td>Level of Achievement (Self-Evaluation)</td><td>  </td></tr>
<tr><th colspan="3">Create Eco-products by promoting DFE</th></tr>
<tr><td rowspan="3">FY2009 Targets
Raise the ratio of Eco-Products to production output
Home appliances, mass produced industrial automation systems, and information and communication systems: 100%
Other than the above: 80%
Double product environmental efficiency (=Factor 2)
Strengthen DFE-related technology development</td><td>FY2008 Targets</td><td>Achieve Eco-Products ratio (compared to production amount) of 90%</td></tr>
<tr><td>FY2008 Achievements</td><td>Achieved Eco-Products ratio (compared to production amount) of 86% (89% for mass produced products; 64% for others)
Certified 24 Hyper Eco-Products</td></tr>
<tr><td>Level of Achievement (Self-Evaluation)</td><td>  </td></tr>
<tr><th colspan="3">Completely eliminate HCFC</th></tr>
<tr><td rowspan="3">FY2009 Targets
Abolish the use of HCFC for refrigerants by the end of FY2011</td><td>FY2008 Targets</td><td>Abolish the use of HCFC for refrigerants in cooling machines and cooling storage units, which are the mainstream models</td></tr>
<tr><td>FY2008 Achievements</td><td>Completely eliminated HCFC (complete conversion to HFC)</td></tr>
<tr><td>Level of Achievement (Self-Evaluation)</td><td>  </td></tr>
<tr><th colspan="3">Comply with the RoHS Directive</th></tr>
<tr><td rowspan="3">FY2009 Targets
Continue to strictly comply with RoHS Directive</td><td>FY2008 Targets</td><td>Strictly comply with RoHS Directive</td></tr>
<tr><td>FY2008 Achievements</td><td>Promoted contamination risk management at each business unit; complied with RoHS Directive</td></tr>
<tr><td>Level of Achievement (Self-Evaluation)</td><td>  </td></tr>
</table>

Comply with REACH regulation		
FY2009 Targets ● Establish systems for managing chemical substances to comply with the REACH regulations	**FY2008 Targets**	● Establish systems for managing chemical substances to comply with the REACH regulations
	FY2008 Achievements	● Prepared for preliminary registration starting from 2008, and implemented thorough dispensing controls for imports at European office sites ● In industrial activities, progressed in drawing-up information forms for products containing chemical substances
	Level of Achievement (Self-Evaluation)	

Eco-Products: Eco-Factories: Initiatives at the Manufacturing Level

Greening of factories and offices		
FY2009 Targets ● Develop eco-factory/eco-office guidelines, and build and initiate an internal certification system	**FY2008 Targets**	● Create indicator for assessing environmental initiatives, develop an assessment system and operate on a trial basis
	FY2008 Achievements	● Created eco-factory indicator; established evaluation system and began operation and trials ● Implementation of environmental risk evaluation at all office sites
	Level of Achievement (Self-Evaluation)	

Promotion of zero emissions		
FY2009 Targets ● Mitsubishi Electric: Reduce final disposal volume to 0.5% of total waste emissions or less ● Affiliates and subsidiaries in Japan: Reduce final disposal volume to 1.0% of total waste emissions or less	**FY2008 Targets**	● Mitsubishi Electric: Reduce final disposal volume to 0.5% of total waste emissions or less ● Affiliates and subsidiaries in Japan: Reduce final disposal volume to 1% of total waste emissions or less
	FY2008 Achievements	● Mitsubishi Electric: Reduced final disposal volume to 0.16% of total waste emissions ● Affiliates and subsidiaries in Japan: Reduced final disposal volume to 1.43% of total waste emissions
	Level of Achievement (Self-Evaluation)	
Reduction in total waste emissions		
FY2009 Targets ● Factories: Improve by 10% per nominal net sales amount from FY2005 ● Offices: Improve by 10% per unit of floor space from FY2005	**FY2008 Targets**	● Factories: Improve by 10% per nominal net sales amount from FY2005 ● Offices: Improve by 10% per unit of floor space from FY2005
	FY2008 Achievements	● Factories: Improved by 23% from FY2005 ● Offices: Improved by 76% from FY2005
	Level of Achievement (Self-Evaluation)	
Effective use of water		
FY2009 Targets ● Confirm the status of water usage at Mitsubishi Electric's works and affiliates, and promote effective usage policies	**FY2008 Targets**	● Confirm the status of water usage at Mitsubishi Electric's works and affiliates, and promote effective usage policies
	FY2008 Achievements	● Implemented water-saving and water-recycling initiatives for industrial water and waterworks
	Level of Achievement (Self-Evaluation)	

Reduction in CO_2 emissions		
FY2009 Targets ● Mitsubishi Electric's Works in Japan (including research centers): Reduce by 2% per year per real nominal net sales ● Head office, Branch offices, Non-Manufacturing Companies in Japan and Overseas: Reduce by 1% per year per unit of floor space ● Manufacturing Affiliates in Japan: Reduce by 1% per year per nominal net sales ● Manufacturing Affiliates Overseas: Reduce by 1% per year per nominal net sales	**FY2008 Targets**	● Mitsubishi Electric's Works in Japan (including research centers): Reduce by 2% per year per real nominal net sales ● Manufacturing Affiliates in Japan: Reduce by 1% per year per nominal net sales ● Manufacturing Affiliates Overseas: Reduce by 1% per year per nominal net sales ● Head office, Branch offices, Non-Manufacturing Companies in Japan and Overseas: Reduce by 1% per year per unit of floor space
	FY2008 Achievements	● Mitsubishi Electric's Works in Japan: Reduced by 2.9% per year per real nominal net sales ● Manufacturing Affiliates in Japan: Reduced by 5.8% per year per unit of real nominal net sales ● Manufacturing Affiliates Overseas: Reduced by 1.5% per year per unit of real nominal net sales ● Head office, Branch offices: Reduced by 2% per year per unit of floor space
	Level of Achievement (Self-Evaluation)	

Eco Logistics: Initiatives at the Transport/Logistics Level

Reduction in CO_2 emissions from product (sales) logistics		
FY2009 Targets ● Japan: Reduce by 30% per net shipping weight from FY2003 ● Overseas: Increase the number of companies tracked	**FY2008 Targets**	● Japan: Reduce by 27% from FY2003 levels ● Overseas: 6 companies
	FY2008 Achievements	● Japan: Reduced by 22% from FY2003 levels (Mitsubishi Electric: reduced by 33% from FY2003) ● Overseas: 14 companies tracked, 6 companies since FY2007
	Level of Achievement (Self-Evaluation)	

Reduction in CO_2 emissions from waste logistics		
FY2009 Targets ● Establish method for calculating CO_2 emissions, and devise and execute reduction plans	**FY2008 Targets**	● Establish method for calculating CO_2 emissions, and devise and execute reduction plans
	FY2008 Achievements	● Established framework for reducing CO_2 emissions in waste logistics
	Level of Achievement (Self-Evaluation)	
Reduction in CO_2 emissions from supply logistics		
FY2009 Targets ● Establish method for calculating CO_2 emissions, and devise and execute reduction plans	**FY2008 Targets**	● Establish method for calculating CO_2 emissions, and devise and execute reduction plans
	FY2008 Achievements	● Established CO_2 emissions calculation formula based on the ton-kilo method
	Level of Achievement (Self-Evaluation)	
Reduction in usage of disposable packaging materials		
FY2009 Targets ● Japan: Reduce by 10% per net shipping weight from FY2005 ● Overseas: Increase the number of companies tracked ● Continue eliminating use of wood products (Japan only)	**FY2008 Targets**	● Japan: Reduce by 13% from FY2005 levels ● Overseas: Continue calculation for 20 companies
	FY2008 Achievements	● Japan: Reduced by 18% from FY2005 levels (Mitsubishi Electric: Reduced by 22% from FY2005 levels) ● Overseas: Continuously calculated for 20 companies from FY2007
	Level of Achievement (Self-Evaluation)	

Fiscal 2008 Achievements

Lifecycle Impact

Overall Environmental Impact

Mitsubishi Electric Group: 77 affiliates in Japan, and 22 affiliates overseas

IN

Materials for Manufacturing				
		Mitsubishi Electric	Affiliates (Japan)	Affiliates (Overseas)
Materials *1		440,000 tons	110,000 tons	490,000 tons
Manufacturing				
Electricity		952 million kWh	411 million kWh	309 million kWh
Natural gas		23,180,000 m³	3,220,000 m³	14,810,000 m³
LPG		2,216 tons	3,018 tons	1,618 tons
Oil (crude oil equivalent)		6,620 kl	9,629 kl	230 kl
Water		6,290,000 m³	2,240,000 m³	1,830,000 m³
	Surface water	1,460,000 m³	590,000 m³	530,000 m³
	Industrial water	2,470,000 m³	460,000 m³	1,220,000 m³
	Groundwater	2,360,000 m³	1,190,000 m³	24,000 m³
	Others	0 m³	0 m³	100,000 m³
Reuse of Water		2,850,000 m³	1,610,000 m³	100,000 m³
Controlled chemical substances (amounts handled)		6,889.8 tons	2,201.3 tons	4,544 tons
Ozone depleting substances (amounts handled)		26.5 tons	75.8 tons	1,641 tons
Greenhouse gases (amounts handled)		3104.1 tons	45.9 tons	764 tons
Volatile Organic Compounds (amounts handled)		2,827.6 tons	1,148.1 tons	75 tons

*1: Materials: Total of shipping weight of Eco-Products, plus product packaging plus waste disposal

OUT

Emissions (From Manufacturing)				
		Mitsubishi Electric	Affiliates (Japan)	Affiliates (Overseas)
Emissions in Water	Water	4,940,000 m³	1,630,000 m³	1,110,000 m³
	Controlled Chemical substances	13.2 tons	2.0 tons	0.0 tons
	BOD (biological oxygen demand)	137.3 tons	5.1 tons	22.1 tons
	COD (chemical oxygen demand)	36.8 tons	4.7 tons	55.1 tons
	Nitrogen	90.7 tons	15.5 tons	2.3 tons
	Phosphorus	3.4 tons	0.1 tons	0.1 tons
	Suspended solids	93.2 tons	4.2 tons	27.9 tons
	n-hexane extracts (mineral)	3.2 tons	0.4 tons	3.1 tons
	n-hexane extracts (active)	4.0 tons	0.2 tons	0.1 tons
	Total emissions of zinc	0.3 tons	0.0 tons	0.1 tons
Releases to the atmosphere	Carbon dioxide (CO_2)	474,000 tons-CO_2	214,000 tons-CO_2	263,000 tons-CO_2
	Controlled Chemical substances (excluding amounts contained in other waste)	719.2 tons	103.2 tons	14.2 tons
	Volatile organic compounds (toluene, xylene, styrene)	658.5 tons	97.0 tons	5.6 tons
	Greenhouse gases	232,000 tons-CO_2	167,000 tons-CO_2	26,000 tons-CO_2
	Ozone depleting substances	0.11 ODPt	0.70 ODPt	9.80 ODPt
	Sulfur oxide (SOx)	1.5 tons	0.55 tons	0.00 tons
	Nitrogen oxide (NOx)	20.5 tons	7.8 tons	31.1 tons
	Dust	1.5 tons	4.6 tons	9.2tons
	Amount of CFCs recovered	46.6 tons	418.2 tons	-
Waste				
Total waste emissions		86,200 tons	57,800 tons	57,800 tons
Volume recycled		72,200 tons	47,200 tons	44,200 tons
Waste treatment subcontracted out		14,000 tons	10,600 tons	13,600 tons
Final disposal		135 tons	830 tons	2,860 tons
Weight reduction in-house		2,560 tons	0 tons	0 tons
Product *2				
Weight of all Eco-Products sold		316,000 tons	48,000 tons	387,000 tons
Weight of packaging materials		42,000 tons	0.8000 tons	47,000 tons

*2: Product: Weight related to Eco-Products

IN

Selling and Distribution			
	Mitsubishi Electric	Affiliates (Japan)	Affiliates (Overseas)
Fuel for trucks (gasoline)	70 kl	2,960 kl	170 kl
Fuel for trucks (diesel)	24,700 kl	6,300 kl	14,200 kl
Fuel for rail (electricity)	1,480 MWh	346 MWh	0 MWh
Fuel for marine transport (bunker oil)	460 kl	90 kl	10,800 kl
Oil (crude oil equivalent)	430 kl	100 kl	14,500 kl

OUT

Selling and Distribution			
	Mitsubishi Electric	Affiliates (Japan)	Affiliates (Overseas)
Carbon Dioxide (CO_2) Emissions	72,000 tons-CO_2	26,000 tons-CO_2	152,000 tons-CO_2

IN

Energy Consumption *3			
	Mitsubishi Electric	Affiliates (Japan)	Affiliates (Overseas)
Annual power consumption from use of "Design for the Environment" products	7,150 million kWh	1,450 million kWh	15,680 million kWh

*3: Energy Consumption: Amount related to Eco-Products

OUT

Emissions *4			
	Mitsubishi Electric	Affiliates (Japan)	Affiliates (Overseas)
Annual CO_2 emissions from use of "Design for the Environment" products (corresponding value)	3,017,000 tons-CO_2	599,000 tons-CO_2	-

*4: Emissions: Amount related to Eco-Products

IN

Products at End of Life *5	
	Mitsubishi Electric
Air conditioners	10,536 tons
Televisions	9,548 tons
Refrigerators	18,174 tons
Washing machines	6,009 tons
Personal computers	83 tons

*5: Products at End of Life: Weight of products taken back and weight of recovered resources of four types of appliances subject to Japan's Home Appliance Recycling Law, plus personal computers

OUT

Resources Recovered *6	
	Mitsubishi Electric
Metals	23,796 tons
Glass	4,715 tons
CFCs	248 tons
Others	8,050 tons

*6: Resources Recovered: Weight of products taken back and weight of recovered resources of four types of appliances subject to Japan's Home Appliance Recycling Law, plus personal computers

Fiscal 2008 Achievements

Environmental Accounting

Scope and Period of Data Compilation and Basis of Calculation

Scope and Period of Data Compilation

- Period: April 1, 2007 March 31, 2008
- Scope of Data Compilation: Mitsubishi Electric Corporation and 99 of its domestic and overseas affiliates and subsidiaries (77 domestic, 22 overseas)

*The scope of data completion is the same as the scope covered in this Environmental Report. The number of companies within the scope declined by two from the previous year.

Basis of Calculation

- Data is calculated for environmental protection costs, environmental protection benefits (environmental performance) and economic benefits from environmental protection activities (real benefits) in accordance with the environmental accounting guidelines (2005) issued by Japan's Ministry of the Environment.
- The benefits of environmental protection are ascertained in terms of real benefits, which consist of earnings and savings, and estimated benefits. Estimated benefits include the economic benefits to customers of using our products, such as lower electricity bills, and environmental improvements produced outside our business sites.

*In environmental accounting from fiscal 2008, depreciation due to the past five years' capital investment as environmental protection costs was calculated as a fixed five-year depreciation value. As a result, the real effect of earnings and the cost reduction by capital investment was also calculated as effects of the past five years' capital investment (effect each fiscal year). The past numerical values shown in the text and graphs (including the increase and decrease compared with the previous year) were calculated using the method described above.

Fiscal 2008 Overview

[Environmental Protection Costs]

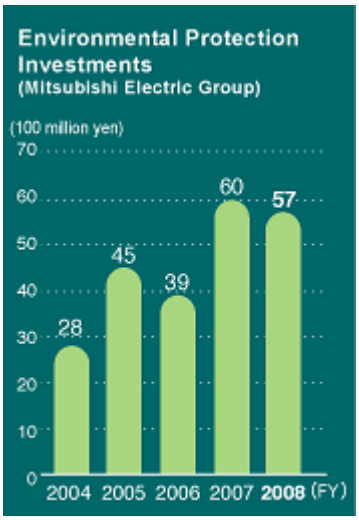
Capital Investment

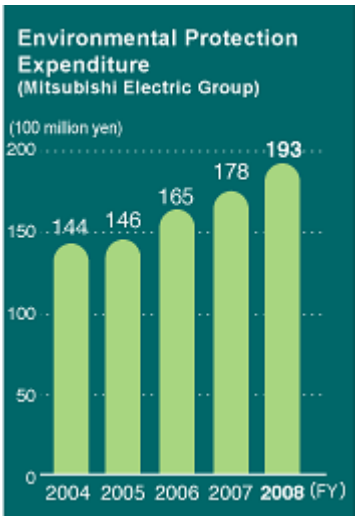
As part of its efforts to prevent global warming, Mitsubishi Electric has been actively introducing high-efficiency equipment in accordance with the Energy Conservation Action Plan that started in fiscal 2005 (for details, see the pages on the "Progress of the Energy Conservation Action Plan" in Preventing Global Warming).

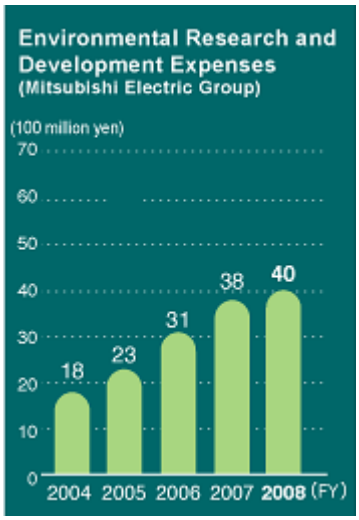
Mitsubishi Electric has also enhanced its "defensive" measures by further investing in the pollution prevention field, including the replacement of ventilation and wastewater treatment facilities, and the shift to vehicles compliant with more stringent gas emission regulations. As a result, capital investment decreased ¥3 billion over the previous year to ¥5.7 billion on a group basis, and rose 3 billion to ¥3.8 billion for Mitsubishi Electric Corporation.

Cost

In fiscal 2008, environmental protection expenditures increased from the previous year, reflecting an increase in environmental R&D projects and the need to eliminate such negative legacies as the disposal of PCB waste and superannuated equipment. As a result, the environmental protection expenditures of the Mitsubishi Electric Group increased ¥1.6 billion from the previous year to ¥19.3 billion, whereas those of Mitsubishi Electric (non-consolidated) increased ¥1.7 billion from the previous year to ¥14.2 billion. In the Group's environmental accounting, only the basic research expenses--not including development expenses for specific products--are included in the research and development expenses for reducing environmental load. Such environmental research and development expenses have been increasing annually.







[Environmental Protection Benefits (Environmental Performance)]

Environmental protection benefits improved both in total amounts and per unit of net sales in most fields. The rise in total greenhouse gas emissions is attributable to the increased use of SF6 due to the expansion of business activities by Mitsubishi Electric. In the next fiscal year, the recovery capacity of SF6 should be improved.

[Economic Benefits from Environmental Protection Activities (Real Benefits)]

Earnings and savings both increased substantially.

[Economic Benefits from Environmental Considerations in Products and Services (Estimated Benefits)]

Customers benefited in terms of lower electricity bills, and environmental benefits were produced with improvements in: the power generation efficiency of turbine generators; the implementation of energy-efficient refrigerators, air conditioners, total heat exchange ventilators (Lossnay) and electrical discharge machines; elevators with inverters; and other areas.

■ Environmental Protection Costs

Mitsubishi Electric Group (consolidated basis) Mitsubishi Electric (100 million yen)

Item	Capital Investment	Costs	Year-on-Year Change	Main Costs
Business Area Activities	54.6	101.1	15.5	-
	36.3	65.1	10.0	
Pollution Prevention	9.2	38.5	8.2	Replacement, operation and maintenance of ventilation and wastewater treatment facilities, investment for replacement of vehicles, PCB content investigation, etc.
	4.0	23.3	4.5	
Global Environmental Protection	42.6	27.9	6.0	Investment for conversion to high-efficiency equipment (e.g., air conditioners and refrigerators), implementation of PV cells, investment in rooftop greening, etc.
	32.2	19.6	4.2	
Resource Recycling	2.8	34.7	1.3	Waste processing, reduced use of wood packing materials, product scrap recycling, etc.
	0.1	22.2	1.3	
Green Purchasing/Procurement and Product-Related Activities at Upstream/Downstream of Production	1.4	13.5	(2.7)	Investigation of products compliant with the European RoHS-directive, recycling of disposed of products, etc.
	0.9	11.0	(2.9)	
Management Activities	0.1	34.8	(0.7)	Environmental training, environmental management system activities, environmental exhibitions, greening of premises, etc.
	0.0	24.5	0.1	
Negative Environmental Impact Reduction and R&D Activities	0.9	39.9	2.3	Development of natural refrigerant-based HC heat pumps, technological development to enhance the efficiency of solar cells, development of new structured power modules, development of water quality control technology, etc.
	0.9	37.6	8.1	

Community Activities	0.0	1.2	0.1	Offsite cleanup activities and local woodland preservation activities in communities
	0.0	1.1	0.1	
Environmental Damage	0.0	2.7	1.1	Surveys on the contamination and purification of soil or groundwater
	0.0	2.7	1.3	
Total	57.0	193.2	15.6	
	38.1	142.0	16.7	
Year-on-Year Change	(3.4)	15.6		
	3.4	16.7		

* Includes depreciation of capital investment over the past five years.

■ Environmental Protection Benefits (Environmental Performance) *

Mitsubishi Electric Group (consolidated basis) Mitsubishi Electric (100 million yen)

Item	Unit	Fiscal	Year-on-Year Change	Year-on-Year Per Net Sales
Total Energy Used	10,000 GJ	1,526	63	99%
		1,060	34	98%
Total Water Used	10,000 m³	853	(70)	88%
		629	(54)	87%
Total Greenhouse Gas Emissions	10,000 tons-CO_2	109	17	113%
		71	11	112%
Total Atmospheric Emissions of Chemical Substances	tons	822	6	96%
		719	5	96%
Total Water Discharged	10,000 m³	657	(80)	85%
		494	(85)	81%
Total Discharge of Chemical Substances in the Water and Soil	tons	15	1	105%
		13	1	104%
Total Waste Discharged	tons	144,000	(3,931)	93%
		86,200	169	95%
Final Disposal	tons	965	(123)	84%
		135	(103)	54%

* Excluding overseas affiliates

■ Economic Benefits from Environmental Protection Activities (Real Benefits)

Mitsubishi Electric Group (consolidated basis) Mitsubishi Electric (100 million yen)

Item	Amount	Year-on-Year Change	Main Benefits
Earnings	40.7	10.9	Profit on the sale of valuable resources such as the recycling of metal scrap
	25.2	7.1	
Savings	37.9	6.3	Reduced electricity bills by introducing high-efficiency equipment, lower water bills via the reuse of water, a reduction in the use of wood packaging materials by using returnable packaging materials
	18.7	3.0	
Total	78.6	17.2	
	43.9	10.1	

■ Economic Benefits from Environmental Consideration in Products and Services (Estimated Benefits)*

Mitsubishi Electric Group (consolidated basis) Mitsubishi Electric (100 million yen)

Item	Amount	Main Products
Customer Economic Benefits	1,176.8	Improvement in the power generation efficiency of turbine generators, total heat exchange ventilators (Lossnay), energy-efficient refrigerators, air conditioners and electrical discharge machines, elevators with inverters, etc.
	1,159.1	
Environmental Improvement Effects	30.0	
	29.7	

* Excluding overseas affiliates

Fiscal 2008 Achievements

Awards

Japan

Award	Sponsor	Description / Product	Company / Business Office
2007 3R Promotion Persons of Merit Awards—3R Promotion Association Chairman's Prize	3R Promotion Association	Achieved the "Perfect Emission" project targets for waste reduction and executed integrated waste improvement activities in collaboration with local communities.	Nagasaki Works
Idea Awards—Excellence Prize	Kanto Electric Association	72-kV dry-air insulation-type gas insulation switch gear HG-VA	Power Distribution Systems Center
2007 Electrical Manufacturers Awards—Development Prize	Japan Electrical Manufacturers' Association	World's first 72-kV SF6 degasification closed-type composite insulation switch gear	Power Distribution Systems Center
2007 Shikoku Invention and Innovation Awards—Encouragement Prize	Japan Institute of Invention and Innovation	Vacuum valve for power switch gears	Power Distribution Systems Center
2007 Excellent Energy Management Plant Awards—Prize of the Director-General of the Agency of Natural Resources and Energy	Ministry of Economy, Trade and Industry	Improved production output by 16% from 2004 through 2006 with achievements such as efficiency improvement of equipment (e.g., lighting, air conditioning), reduction of energy loss via efficient energy management systems (e.g., power reduction for non-operating hydraulic pumps of a turret punching press) and power reduction for pumps via the temperature control of coolant pumps.	Power Distribution Systems Center
2007 Monthly Shikoku Region Energy Conservation Excellent Group—Shikoku Bureau Director's Prize	Shikoku Bureau of Economy, Trade and Industry	Energy conservation activities utilizing an energy management system	Power Distribution Systems Center
34th Technology Awards	Japan Society of Refrigerating and Air Conditioning Engineers	"Zubadan-Slim," an inverter-packaged air conditioner for use in cold regions	Shizuoka Works
2007 Electrical Manufacturers Awards—Progress Prize	Japan Electrical Manufacturers' Association	Development of the "Kirigamine ZW Series," an air-conditioner model that has a zone air-conditioning function	Shizuoka Works

2007 Kanto Invention and Innovation Awards—Encouragement Prize	Japan Institute of Invention and Innovation	Dustproof structure for the inverter control unit of air conditioners	Shizuoka Works
2007 Kanto Invention and Innovation Awards—Encouragement Prize	Japan Institute of Invention and Innovation	Air flow channel of refrigerators	Shizuoka Works
2007 Kanto Invention and Innovation Awards—Encouragement Prize	Japan Institute of Invention and Innovation	Air conditioner equipped with a radiant heat sensor	Shizuoka Works
2007 Energy Conservation Grand Prize—Prize of the Director-General of the Agency of Natural Resources and Energy	Energy Conservation Center, Japan	16 models of pipe fans: Ventilating fans equipped with a compact motor, "minimo," which enables considerable energy conservation with original wiring technology	Nakatsugawa Works
2007 National Invention and Innovation Awards—Japan Institute of Invention and Innovation's Chairman Prize	Japan Institute of Invention and Innovation	Invention of an environmentally compatible air-conditioner renovation technology that reuses existing piping	Air-conditioning & Refrigeration Systems Works and Nagasaki Works
9th Power Load Equalization Equipment and Systems Awards—Promotion Prize	Heat Pump & Thermal Storage Technology Center of Japan	All-in-one-type heat pump hot-water supply system, the "Sunny Pack Set Q"	Mitsubishi Electric and Mitsubishi Electric Building Techno-Service
75th Employees of Merit Awards for Electricity—Excellence Prize	Japan Electric Association	Development of composite freezing and air-conditioning systems for convenience stores	Housing Environmental R&D Center, Air-conditioning & Refrigeration Systems Works and Shizuoka Works

2007 Excellent Energy Conservation Awards—Energy Conservation Center Chairman's Prize	Energy Conservation Center, Japan	Energy conservation for air conditioners was implemented both in production sites and administration by introducing a remote and centralized control system for air conditioners. Consequently, a 12% year-over-year improvement in production output was achieved in FY 2008.	Fukuyama Works
1st Nagoya Eco Establishment Awards—Excellence Prize	Nagoya City	Environment-conscious initiatives (environmental management system activities) were recognized.	Nagoya Works
2007 Electrical Manufacturers Awards	Japan Electrical Manufacturers' Association	Awarded for increasing the processing yield at visible job-sites. e-F@ctory planning and MES interface commercialization.	Nagoya Works
2007 Electrical Manufacturers Awards	Japan Electrical Manufacturers' Association	Awarded for decreasing the amount of raw materials used. Development for the controlled power source of wire electric discharge machines.	Nagoya Works
2007 Chubu Invention and Innovation Awards—Minister of Education, Culture, Sports, Science and Technology's Invention Encouragement Prize	Japan Institute of Invention and Innovation	Awarded for presenting users with a wide variety of processing characteristics in one source, allowing for energy savings, space savings, and lower cost. Control technology for electric discharge machines.	Nagoya Works
2007 Excellent Energy Conservation Awards—Chubu Bureau of Economy, Trade, and Industry Director's Prize	Energy Conservation Center, Japan	By introducing the utility facility system, which takes production type into consideration in clean rooms for laser processing machines and highly efficient machines and systems, a greater energy savings compared with current facilities has been achieved.	Nagoya Works

Engineers Choice Award 2006	America, Control Engineering Magazine	AC Servo "MR-J3." Valued for its automatic vibration suppression function via auto-tuning.	Nagoya Works
The High Pressure Gas Safety Institute of Kumamoto—President's Prize	The High Pressure Gas Safety Institute of Kumamoto	Excellent handling of high-pressure gases	Power Device Works and Kumamoto Works
Excellent Energy Management Plant Awards—Prize of the Director-General of the Agency of Natural Resources and Energy	Ministry of Economy, Trade and Industry	Improved production output by 41% from 2004 through 2006 with achievements such as the reduction of power consumption due to the introduction of high-efficiency turbo refrigerators, a review of air conditioning for the clean room and the conversion to coolant pumps with inverters.	High Frequency & Optical Device Works
2007 Fire and Disaster Management Agency Director's Awards— Excellent hazardous material-related business establishment	Fire and Disaster Management Agency	Compliance with fire prevention-related laws and regulations, the improvement of facilities through equipping with firefighting equipment, and the promotion of long-term safety education were recognized.	System Substrates Works
Sagamihara Waste Countermeasures Conference's Establishment Awards	Sagamihara Waste Countermeasures Conference	Long cooperation in the operation of the Sagamihara Waste Countermeasures Conference was recognized.	System Substrates Works
Dissemination and education of local disaster-prevention related to hazardous materials	Kanagawa Hazardous Materials Safety Joint Association	Contribution to disseminating knowledge on disaster-prevention related to hazardous materials and working on local disaster-prevention activities	Ryoden Shonan Electronics Corporation

Overseas

Award	Sponsor	Description / Product	Company / Business Office
PEZA Environmental Award—Outstanding Environmental Performer Prize	Philippine Economic Zone Authority (PEZA)	Outstanding environmental performance in environmental management systems	Laguna Auto-Parts Manufacturing Corporation

Environmental Report

Environmental Management

Management System

Globally promoting environmental management through the establishment and integrated utilization of an environmental management system and the lively exchange of ideas between environmental managers inside and outside of Japan.

More

Environmental Audits

Plans to improve environmental management through the strict checking of internal, external, and head office audits.

More

Environmental Risk Management

Preventing environmental disasters and determining the risk of soil and underground water contamination via environmental assessment.

More

Education and Awareness

Raising the level of initiatives throughout the Group by educating environmental key persons, who are in charge of environmental management, and by fostering environmental awareness in all employees.

More

Environmental Management

Environmental Management System

Integrated Management System Based on the Environmental Plan

Our Environmental Plan represents the commitment of the Mitsubishi Electric Group to society. In order to fulfill this commitment, every group company must share in the goals of the plan and work toward their achievement. Previously, the Mitsubishi Electric Group had environmental management systems (EMS) at each of its sites that were operated independently, but since the start of our 5th Environmental Plan in fiscal 2007, we have worked to create an integrated system for the Group as a whole.

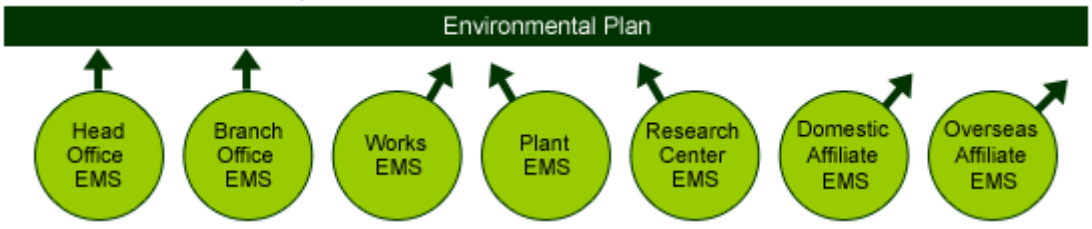
Organization Chart for Environmental Management

To integrate the systems, we made the environmental management programs at each of our EMS organizations (at manufacturing works and other facilities) consistent with the Environmental Plan, which took place in conjunction with efforts to update systems at our head office and branches for compliance with ISO 14001 (2004).

In fiscal 2008, we developed procedures to guide business groups in checking whether or not the programs of the EMS organizations they are responsible for are consistent with the Environmental Plan. In doing so we took another step in the direction of a fully integrated environmental management system.

We intend to continue efforts to integrate environmental management systems at our head office and branches with systems at manufacturing works and research centers. Furthermore, in recent years, corporate social responsibility has become increasingly associated with the need to take into account the environment in all corporate activities, including the supply chain and customer sales. Mitsubishi Electric plans to meet this challenge by expanding the scope of system integration so that it encompasses environmental management programs at sites not involved in manufacturing.

Mitsubishi Electric Group EMS Harmonization



ISO 14001 Certification

The number of sites in the Mitsubishi Electric Group that have acquired ISO 14001 certification as of March 31, 2008 is as follows.
Mitsubishi Electric: 26
Domestic Affiliates: 55
Overseas Affiliates: 29

As of the end of fiscal 2008, all Mitsubishi Electric sites (on a non-consolidated basis) have acquired certification. All domestic production affiliates have also been certified, with the exception of two companies with minimal environmental impact. This puts our certification ratio at above 99%.

Click here to see a list of sites and affiliates that have acquired ISO 14001 certification

Enhancing Global Environmental Management

The Mitsubishi Electric Group has held the Environmental Managers Conference every year since fiscal 1995 for all environmental managers at Mitsubishi Electric and its domestic affiliates. The participants share information on activities and policies related to the Environmental Plan, report on progress made and discuss especially successful initiatives. The fiscal 2008 conferences featured the participation of managers from Europe and China, who discussed trends in local environmental laws and regulations and other related topics. There were many in-depth discussions among representative of both domestic and overseas sites.

Our overseas sites have also held regional environmental conferences every year since fiscal 2005 at four locations around the world. The conferences are intended to strengthen coordination between domestic and overseas sites to ensure strict compliance with overseas laws and regulations and raise the overall level of environmental management at each site. The regional conferences held in fiscal 2008 were highlighted by a presentation on our Environmental Vision 2021, which was formulated in October 2007. All members of the Mitsubishi Electric Group were called upon to work toward achievement of the goals contained in the vision.

Mitsubishi Electric intends to further strengthen coordination with overseas sites by continuing to facilitate communication and discussions at these regional environmental conferences. In addition, we will make progress at the group level by expanding the scope of companies that carry out organized environmental activities based on the Mitsubishi Electric Group's Environmental Plan to include not only manufacturing affiliates, but also affiliates not involved in production activities in Japan and overseas.

Perspective: Americas Environmental Conference Participant

A Perfect Opportunity for Discussion Between the Head Office and American Sites

Mr. Scott Stephenson
Corporate Manager TS/ISO, MEAA (Mitsubishi Electric Automotive America)

At the Environmental Conferences for the Mitsubishi Electric Americas group companies, a lot of valuable information is exchanged between locations. The conference is an excellent chance to benchmark our environmental concerns such as energy conservation and recycling with other Mitsubishi Electric facilities. At the most recent conference at the Mitsubishi Electric Research Laboratories in Cambridge MA. Information was exchanged about the upcoming carbon and climate legislation and what the American companies need to do to prepare for it. This meeting was also a good chance for the Americas Environmental representatives to exchange opinions with MELCO CES about the significant changes made to the annual environmental report that streamline the processes of submitting essential information to MELCO. This meeting was very beneficial for the Mitsubishi Electric Americas group.

Topics

Topics from the Fiscal 2008 Environmental Conferences

Environmental Managers Conference (June 8, 2007 & December 4, 2007)

From the Environmental Managers Conference

At the June conference, we reviewed activities from the previous fiscal year, confirmed policies for the current fiscal year and introduced trends in overseas environmental regulations. The president was in attendance and gave a talk on strengthening defensive environmental activities and the importance of proactive, product-related environmental activities. In addition, a ceremony was held for the Corporate Environmental Sustainability Awards, a program established in fiscal 2008 to further stimulate environmental management activities. One affiliate and four manufacturing sites were honored for their noteworthy defensive and proactive initiatives. At the December conference, a presentation was given on our Environmental Vision 2021. All employees of the Mitsubishi Electric Group have been called upon to help successfully fulfill this vision. We also introduced the findings of environmental audits conducted in the first half as well as examples of energy conservation and waste reduction initiatives. A presentation was given on nature conservation activities, which have been gaining momentum each year as a way of raising environmental awareness.

Inter-America Environmental Conference (October 3, 2007)

All production sites in North America and Mexico participated this year, as they had last year. Here, information was exchanged on US Environmental regulation movements and there were vigorous discussions concerning Group Environmental Report improvement plans from Headquarters. The conference reaffirmed that environmental management is progressing cooperatively.

China Environmental Conference (October 18, 2007)

Some 40 employees from 14 Chinese affiliates participated in the conference. The head office gave a progress report on the 5th Environmental Plan, focusing particularly on carbon dioxide emissions, and introduced examples of energy conservation initiatives taking place in the country. In addition, four especially progressive Chinese affiliates introduced examples of their energy conservation activities. Their presentation reaffirmed the fact that some sites in China are as advanced as their counterparts in Japan in terms of installing high efficiency devices, improving the power factor of high frequency furnaces, conducting energy efficiency patrols and administering environmental training.

Asia Environmental Conference (November 9, 2007)

This year's conference was attended for the first time by environmental managers from sites in Malaysia, Indonesia and India. A total of 50 people participated. The head office conveyed Mitsubishi Electric Group policies on the environment, including details of our Environmental Vision 2021, while the local sites reported on the highlights of their environmental activities. The conference reaffirmed the fact that each of the sites is working to steadily reduce risk and ramp up energy conservation and recycling initiatives from a cost-cutting perspective.

Europe Environmental Conference (November 9, 2007)

This year, a joint manufacturing and sales conference was held for the first time, as sales divisions joined manufacturing sites for the conference. Participation by sales divisions allowed both factories and sales companies to learn about one another's efforts to steadily comply with environmental regulations and develop environmental businesses. The conference facilitated truly valuable discussions. We plan to continue this format and continue to promote environmental management for all of Europe from both environmental management and environmental business perspectives.

At the Europe Environmental Conference

Environmental Management

Environmental Management System

ISO 14001 Certification Companies

Mitsubishi Electric Corporation (Domestic)

Organization	Registration Date	Registration Number	Examination Organization
Head Office, Branches	March 20, 2006	EC02J0333	JACO
Kobe Works	March 10, 1998	EC97J1218	JACO
Itami Works	March 9, 1998	JQA-E-90123	JQA
Nagasaki Area	December 24, 1997	EC97J1159	JACO
Power Distribution Systems Center	March 9, 1998	EC97J1211	JACO
Inazawa Works	March 7, 1996	EC98J2017	JACO
Communication Systems Center, Communication Networks Center, Mobile Terminal Center	November 25, 1997	EC97J1116	JACO
Electronic Systems Group Kamakura Area	May 22, 1998	EC98J1013	JACO
Nakatsugawa Works	March 24, 1998	EC97J1232	JACO
Air Conditioning & Refrigeration Systems Works	March 10, 1998	EC97J1227	JACO
Shizuoka Works	December 22, 1997	EC97J1132	JACO
Kyoto Area	June 22, 1998	EC98J1021	JACO
Gumma Works Area	April 20, 1998	EC98J1008	JACO
Nagoya Works Area	November 25, 1997	EC97J1113	JACO
Fukuyama Works Area	November 26, 1997	EC97J1128	JACO
Himeji Works	March 24, 1998	EC97J1234	JACO
Mita Area	March 25, 1998	EC97J1249	JACO
Fukuoka Area	September 29, 1997	EC97J1084	JACO
High Frequency & Optical Device Works	October 27, 1997	EC97J1098	JACO
Advanced Technology R&D Center	November 24, 1998	EC98J1103	JACO
Eastern Research Institute Area	July 28, 1999	EC99J1034	JACO
Koriyama Area	June 22, 1998	EC98J1014	JACO
Sagami Area	March 10, 1998	EC97J1220	JACO
Transmission & Distribution Systems Center Ako Area	August 26, 1997	EC97J1064	JACO
Power Device Works Kumamoto Factory	March 25, 1997	EC96J1096	JACO
Plant Engineering and Construction Division	December 24, 2004	YKA4003195	LRQA

Domestic Affiliates

Organization	Registration Date	Registration Number	Examination Organization
Mitsubishi Electric Life Service Corporation	June 22, 2005	EC05J0082	JACO
Mitsubishi Electric Logistics Corporation	February 14, 2003	JQA-EM2984	JQA
The Kodensha Co., Ltd.	February 1, 2002	RE0265	JTCCM
Mitsubishi Electric System & Service Co., Ltd.	March 14, 2001	EC00J0264	JACO
Nakayama Machinery Co., Ltd.	March 10, 2004	EC03J0389	JACO
Mitsubishi Electric Documentex Ltd.	November 16, 2001	JQA-EM1909	JQA
Melco Technorex Co., Ltd.	May 24, 2000	EC00J0017	JACO
Mitsubishi Electric Credit Co., Ltd.	September 30, 2004	E916	JICQA
Kita Koudensha Corporation	March 26, 1999	JMAQA-E041	JMA
Miyoshi Electronics Corporation	March 28, 2001	EC00J0325	JACO
Oi Electric Co., Ltd.	November 20, 1998	JQA-EM0252	JQA
Kyushu Mitsubishi Electric Corporation	December 25, 2002	EC02J0261	JACO
Chugoku Mitsubishi Electric Sales Corporation	November 24, 2000	EC00J0140	JACO
Chiyoda Mitsubishi Electric Co., Ltd.	August 2, 2002	JQA-EM2532	JQA

Seikosha Corporation	October 24, 2006	6206	EQA
Chubu Mitsubishi Electric Co., Ltd.	May 10, 2002	JQA-EM2380	JQA
Ryoden Trading Co., Ltd.	December 19, 2001	EC01J0212	JACO
Kanaden Corp.	October 26, 2001	TECO-ER-00001	Deloitte-TECO
Mansei Corporation	March 19, 2001	EC00J0293	JACO
Nagano Mitsubishi Electric Sales Corporation	September 26, 2001	EC01J0122	JACO
Mitsubishi Electric Information Systems Corporation (Shonan Office)	March 25, 1998	EC97J1246	JACO
Mitsubishi Electric Business Systems Co., Ltd. (includes MB Techno Co., Ltd.)	December 28, 2004	EC04J0414	JACO
Ohmori Electric Industries Co., Ltd.	September 30, 2005	EM4931	JQA
Mitsubishi Electric Plant Engineering Corporation	December 9, 2007	YKA-4004028/J	LRQA
Toyo Electric Corporation	March 24, 2000	JQA-EM0792	JQA
Ryoden Kasei Co., Ltd.	December 24, 1999	JQA-EM0662	JQA
Tada Electric Co., Ltd.	August 25, 1999	EC99J1051	JACO
Tada Electric Co., Ltd. Semiconductor Factory	September 25, 2002	EC02J0168	JACO
Ryosan Industry Corporation	December 28, 2001	JQA-EM2052	JQA
Ryosan Industry Corporation Asahi Factory	February 17, 2006	JQA-EM-5184	JQA
Ryosai Technica Co., Ltd.	November 12, 1999	JQA-EM0581	JQA
Toshiba Mitsubishi-Electric Industrial Systems Corporation	January 29, 1997	EC99J2062	JACO
Hanshin Kiki Co., Ltd.	March 17, 2005	JMAQA-E555	JMA
Mitsubishi Electric Building Techno-Service Co., Ltd.	May 21, 1999	JQA-EM0429	JQA
Tokan Co., Ltd.	November 13, 1998	JQA-EM0247	JQA
Ryoden Elevator Construction Ltd.	December 28, 1999	EC99J1147	JACO
Mitsubishi Hitachi Home Elevator Corporation	December 2, 1999	EC99J1122	JACO
Taiyo Musen Co., Ltd.	March 9, 2001	JQA-EM1378	JQA
Nihon Kentetsu Co., Ltd. (Head Office, Works)	March 16, 2001	JQA-EM1409	JQA
Mitsubishi Electric Lighting Corporation (Head Office, Shizuoka Factory)	March 15, 2000	EC99J1217	JACO
Mitsubishi Electric Home Appliance Co., Ltd.	March 12, 1999	JQA-EM0367	JQA
Ryoden Asahi Technica Co., Ltd.	December 28, 1999	EC99J1158	JACO
Mitsubishi Electric Osram Ltd.	March 19, 2001	EC00J0287	JACO
Sowa Technica Inc.	October 6, 2000	JQA-EM1042	JQA
Hyper Cycle Systems Corporation (Higashihama Recycle Center)	April 18, 2001	EC01J0002	JACO
Ryohoku Electronics Corporation	May 12, 2004	EC04J0051	JACO
Osram-Melco Ltd. Kakegawa Factory	September 29, 1997	EC97J1076	JACO
Kohshin Electric Corporation	December 11, 2005	EC02J0228	JACO
BCC Corporation	March 14, 2001	EC00J0268	JACO
Koryo Electric Co., Ltd.	January 24, 2001	EC00J0210	JACO
Sanwa Electric Co., Ltd.	March 9, 2001	JQA-EM1380	JACO
DB Seiko Co., Ltd.	October 11, 2005	EC05J0181	JACO
Nippon Injector Corporation	November 12, 1999	JQA-EM0579	JQA
Mitsubishi Electric Metecs Co., Ltd.	March 10, 1998	EC97J1220	JACO
Melco Display Technology Inc.	December 27, 2000	EC00J0189	JACO

Overseas Affiliates

Company Name	Registration Date	Registration Number	Examination Organization
Mitsubishi Electric Power Products, Inc.	March 30, 2006	CERT-05051-2006-AQ-HOU	Det Norske Veritas
Mitsubishi Digital Electronics America, Inc.	February 1, 2002	1111	ANAB
PIMS S.A. de C.V Mexicali Mexico	June 19, 2007	1433	PROFEPA
Mitsubishi Electric Automation, Inc.	September 14, 2005	C2005-01973	Perry Johnson Registrars
Mitsubi Electric Automotive America	June 24, 1990	164195	BVC
Mitsubishi Electric de Mexico,S.A. de C.V.	March 17, 2004	0/1/22/959	PROFEPA
Mitsubishi Electric Air Conditioning Systems Europe Ltd.	February 21, 2000	EMS-53485	British Standards Institute
Mitsubishi Electric Automotive Europe B.V.	November 25, 2001	NL7002013	Bureau Veritas Certification
CERT-ACO, s.r.o. Hutska275/2,27201Kladno	July 3, 2007	728-07-03	Certification Authority No.3070
CERT-ACO, s.r.o.	May 2, 2006	323a-04-01	-
MEAC entirely	September 25, 2003	257-03-03	CERT-ACO
MEAC entirely	October 18, 2006	622-06-04	-
M/s Mitsubishi Electric Automotive India Pvt. Ltd.	November 18, 2003	00467-2006-AE-BOM-RvA	Det Norske Veritas
Mitsubishi Elevator Asia Co., Ltd.	October 30, 1998	TH08000083	BUREAU VERITAS
Siam Compressor Industry Co., Ltd.	September 30, 2006	01 104 7040	TUV Rheinland
Mitsubishi Electric Consumer Products (Thailand) Co., Ltd.	January 26, 2001	TH07000320	Bureau Veritas Certification (Thailand) Ltd.
Kang Yong Electric Public Co., Ltd.	September 21, 2001	89194	BVQI
Mitsubishi Electric Automation (Thailand) Co., Ltd.	January 6, 2006	59	Anglo Japanese American (AJA)
Mitsubishi Electric Thai Auto-Parts Co.,Ltd.	July 11, 2001	161047	Bureau Veritas Certification
Laguna Autoparts Manufacturing Corporation	August 7, 2006	TUV104 05 0597	TUV Asia Pacific Ltd. Suddeutschland
Mitsubishi Electric (M) Sdn. Bhd.	March 19, 1999	M00320001	SIRIM QAS International Sdn. Bhd.
Taiwan Mitsubishi Elevator Co., Ltd. Hsin Chu Factory	November 21, 1998	4MDE001-04	Lift and parking equipments activities of the production, installation and servicing
XD-Mitsubishi Electric Switchgear Co., Ltd.	July 20, 2001	0015-2001-AE-RGC-RvA	DET NORSKE VERITAS
Shanghai Mitsubishi Elevator Co., Ltd.	December 23, 1998	C982001	LRQA
Shandong Hualing Electronics Co., Ltd.	November 26, 2002	03-2002-110	CEPREI Environmental Management System Certification body
Mitsubishi Electric(Guangzhou) Compressor Co.,Ltd.	April 1, 2004	01 104 032021	TUV Rheinland
Shanghai Mitsubishi Electric & Shangling Air-Conditioner and Electric Appliance Co., Ltd.	March 29, 2006	098 06 E1 014 R1 M	Shanghai huanke environmental certification Co., Ltd.
Mitsubishi Electric Dalian Industrial Products Co., Ltd.	December 30, 2006	0106E20071R1M/2100	CQC
Mitsubishi Electric Shihlin Automotive Changzhou Co., Ltd.	December 17, 2004	01-104-043218	TUV

Environmental Management

Environmental Audits

Multifaceted Monitoring of Activities with Three Types of Environmental Audits

The Mitsubishi Electric Group works to improve the quality of its environmental management in a multifaceted manner by utilizing three different types of audits with differing administrators and standards.

The first type is internal environmental audits, which are conducted by manufacturing works, factories, research centers and affiliates. They are performed once or twice a year to check on compliance with regulations and local laws and conformance with ISO standards at the organization level. The second type is conformance audits, which are conducted by the certification body based on ISO 14001. They look at whether environmental management systems are in conformance with the ISO standard. The third type is conducted by the head office. These environmental audits cover all domestic branches, manufacturing works and affiliates and confirm progress on the Group's Environmental Plan and compliance with related laws. The audits are performed at branches and manufacturing works twice a year and at affiliates once a year.

The results of head office-led audits are reported to the president by the executive officer in charge of the environment and conveyed to the Group's manufacturing works and affiliates via the Environmental Managers Conference and various reports, in an effort to improve the quality of environmental management at each site. Through these three types of audits we will continue to work to qualitatively improve environmental management in a multifaceted manner.

Three Types of Environmental Audits

	Internal audits conducted by manufacturing works, factories, research centers and affiliates	Environmental audits conducted by the head office	Management system audits conducted by the ISO certification body
Auditing Standards	Laws and regulations ISO standards Site-specific regulations Progress on Environmental Plan	Laws and regulations Company regulations related to the environment Environmental Plan	ISO standards
Frequency	Once or twice a year	Once a year or every two years	Once a year

Environmental Audits and Inspections by the Head Office

Environmental audits by the head office involve interviewing the management of Mitsubishi Electric sites and affiliates and checking on progress in implementing the Environmental Plan. This involves looking into the status of compliance and environmental risk management, which includes onsite disaster prevention and safety measures, how internal environmental audits have been conducted, the handling of chemical substances used in products and manufacturing processes, and the nature of product assessments.

Furthermore, in order to ensure full compliance with amendments to environmental laws and regulations, we audit the status of compliance at each site in detail and order prompt remedial measures when areas of non-conformance are discovered. Examples of improvement measures are compiled into a booklet for common instances of non-conformance and distributed within the Group. We also hold classes to ensure thorough understanding of environmental laws and regulations and raise awareness of compliance-related issues. In fiscal 2008, the scope of auditing was expanded to include non-production sites, and environmental audits were conducted at 116 domestic sites in the Mitsubishi Electric Group. We confirmed that activities are being properly conducted according to plan. Classes were held five times during the year to present improvement examples and provide information on waste management. Approximately 300 employees attended.

The environmental audits performed in fiscal 2008 found that management precision is improving at both production sites and affiliates.

At production sites overseas, we check on the status of environmental activities and conduct onsite environmental inspections that emphasize problem solving through dialog. Onsite environmental inspections are conducted by the head office from a risk management perspective once every approximately three years. Common global standards (checklists) are used to ensure the inspections reflect the policies of the business group in charge and affiliated domestic plants. In fiscal 2008 we conducted inspections at nine sites, one in Europe, two in the Americas, three in China and three in the Asian region. The inspections found that production activities and management are being conducted with appropriate consideration for the environment by overseas sites as well.

In the future we plan to reinforce inspections to raise them to the level of environmental audits.


On an environmental audit in Japan


Inspecting factory boiler facilities in China


On an environmental inspection in the U.S.

Environmental Management

Environmental Risk Management

Handling Groundwater and Soil Contamination

The Mitsubishi Electric Group conducts environmental assessments based on internal rules in conjunction with land changes and other developments.
When the assessments turn up soil contamination or other issues, the matter is reported to the authorities and measures are implemented in conformance with the Soil Contamination Countermeasures Law.

Preventing Environmental Accidents

Our 5th Environmental Plan stipulates policies for preventing environmental accidents before they can occur. This specifically involves early replacement of obsolete facilities and preventative maintenance through inter-site inspections.

In the area of preventative maintenance through inter-site inspections, in fiscal 2007 we created indicators for quantifying latent environmental risk for each environmental factor. These enable us to quantitatively assess latent risk and risk mitigation initiatives for different types of environmental impact.

In fiscal 2008, we clarified the amount of residual risk in each category for all Mitsubishi Electric sites through comparisons with environmental risk assessment standards. In addition, we worked to strengthen inspections of wastewater treatment facilities by creating a list of risks that all the sites face in common. We also continued to replace facilities as needed.

We will continue to develop these risk lists for other environment-related facilities and widely communicate information on related initiatives in order to take additional steps forward in preventing risks before they materialize.

Appropriate PCB Storage and Processing

We inspect and check PCB waste being stored by the company as well as devices in use that contain PCBs at least once per year at each storage site.

However, in fiscal 2008, it came to light that two Mitsubishi Electric sites had inappropriately handled PCB in the past. This was immediately reported to the authorities, appropriate steps were taken, and the facts of the incident were posted on our website. We instructed the entire company and affiliates to conduct more diligent management in order to prevent recurrence and conducted training for managers and workers in charge of managing PCBs.

We currently dispose of PCB waste in a regular manner on the basis of a contract signed in fiscal 2007 with the Japan Environmental Safety Corporation (a fully owned government body that conducts PCB waste disposal under government supervision). In fiscal 2008, we disposed of 55 units of PCB waste and in fiscal 2009 we have plans to dispose of an additional 11 units. We will continue to engage in appropriate storage and management with the goal of completing disposal procedures at an early date.

We have also enabled customers to identify electrical devices with PCBs that were previously manufactured by the Mitsubishi Electric Group by posting a list of the devices on our website.

Handling Transformers with Low-Concentration PCBs

With respect to the chance that small amounts of PCB have contaminated transformers and other devices, Mitsubishi Electric has considered the possibilities of contamination during the manufacturing process, contamination after the devices have been delivered, contamination through insulating oil and other scenarios, but it has not been possible to identify the causes, devices involved or time of manufacture. We have therefore concluded that we cannot deny the possibility that small amounts of PCBs could have contaminated electrical devices manufactured prior to 1989 using electrical insulating oil. Quality management for insulating oil has been strengthened for devices manufactured since 1990, so we have judged that there has been no contamination by low-concentration PCBs as of product shipment.

Along with continuing to manage quality for insulating oil, we are working to provide technical information via our website and are responding to individual inquiries via a customer service desk already in place.

Mitsubishi Electric also participates in the Japan Electrical Manufacturers' Association's PCB Disposal Committee, an industry group. We help the group disseminate information and consider disposal policies.

Products Containing Asbestos

Mitsubishi Electric has banned the use of all six types of asbestos* as of July 1, 2006. We require that suppliers provide a guarantee of non-use when purchasing materials from them and confirm that there has been no contamination (revisions have already been made to our list of chemical substances for green procurement). Our group companies have also finished replacing asbestos with alternative materials and have destroyed asbestos-containing inventory as of September 2006.

However, in spite of these efforts, at the end of fiscal 2007 it was discovered that materials containing asbestos that had been part of a supplier's stock were mistakenly included in Mitsubishi Electric products for railway companies and that these products were delivered to customers. When the situation came to light, the Mitsubishi Electric Group immediately took steps to prevent future contamination, which included measures related to the management of supplier products, and worked thoroughly to raise awareness of the issue.

In fiscal 2008, we took additional steps to prevent contamination, including requesting suppliers to once again confirm and submit non-use guarantees. A newspaper report in January 2008 revealed that asbestos (tremolite), which is banned from use in Japan, was detected at a Tokyo daycare center, and on February 6, 2008, the Ministry of Health, Labour and Welfare made an announcement regarding full analytical investigations of the presence of asbestos under Article 3.2 of the Ordinance on Prevention of Health Impairment due to Asbestos. Mitsubishi Electric has sales divisions for large-scale facilities accompanying construction work, so we again thoroughly checked that asbestos is not being used within the Group.

We intend to continue strengthening related measures and raising awareness of them.

*The six types of asbestos are Chrysotile, Amosite, crocidolite, anthophyllite, actinolite and tremolite.

Environmental Management

Enhancing Environmental Education and Raising Environmental Awareness

Environmental Education for Different Career Stages

Environmental education at the Mitsubishi Electric Group takes place along two axes: general environmental education for specific career stages and specialized training for specific jobs.

General environmental education is for all employees and is conducted for four different career stages: new hires, section managers, management and overseas appointments. For example, the program for newly hired employees features a presentation of the environmental policies and initiatives of the Mitsubishi Electric Group, while the program for employees sent overseas focuses on introducing trends in foreign environmental laws and regulations and the activities of Mitsubishi Electric sites in other countries. Organizing the programs in accordance with the knowledge, career stages and attributes of different classes of employees helps ensure that curriculums are appropriate and effective. In fiscal 2008, e-learning classes conducted as a part of the general environmental education program were made available to employees at domestic affiliates, in addition to head office staff.

Job-specific training is broken up into environmental management, materials, product design, manufacturing and sales divisions, and various innovative approaches are incorporated into each course. For example, key environmental personnel training for environmental management divisions includes groups discussion and role playing; environmental auditor training has been designed so that employees can participate in classes remotely using the Internet; and training for the product design division includes classes in which participants gain experience dismantling products.

We will continue to enhance both general environmental education and job-specific training and gradually expand the programs to include overseas employees.

Training for environmental auditors utilizes the Internet


In specialized training for the design sector, the lecture curriculum includes product dismantling experiments to instill a better appreciation for how to encourage product recycling through design.

Specialized Training for Employees Involved in Environmental Policy

Mitsubishi Electric has conducted specialized training for the head office's environmental managers and committee members since fiscal 2007 in order to clarify environmental managers for each business group. The goal of the training program is to raise the skill level of employees expected to fulfill the role of environmental specialists and thereby provide support for factory-level environmental protection activities. In fiscal 2008, we invited instructors from outside the company and held five classes on topics ranging from the fundamentals of environmental management to practical application. We also distributed a DVD recording of the classes to help employees retain the information presented with the hope that the classes will be put to use in environmental policy-making at group production sites.

Training Key Environmental Personnel

Nearly every Japanese company in recent years has had to deal with the retirement of large numbers of veteran employees who have made major contributions to environmental management (specifically, employees certified in pollution management and in possession of other vital knowledge). In order to continue to maintain current levels of environmental management, it is essential that personnel be trained in the techniques and practices of this expert class, which has been involved in environmental facilities management for so long.

To deal with this situation, the Mitsubishi Electric Group began a program in fiscal 2005 that designates employees responsible for environmental facilities management as "key environmental personnel." Over twenty key environmental personnel are trained every year through a specialized training course.

Key environmental personnel are trained together in a group setting. Trainees are generally younger employees selected for the program from sites nationwide. Experienced Mitsubishi Electric employees who have been responsible for the practical task of managing pollution and waste serve as course instructors. Five group training sessions are held every year, at which participants learn the basics of environmental regulations and gain practical knowledge in analysis techniques, risk detection, risk management, environmental auditing and other areas. The group training format facilitates the formation of networks among key environmental personnel throughout the country, which in turn helps to disseminate information on waste, environmental facilities updating and facilities usage within the Group.

In fiscal 2008, 30 employees passed the final exam of the training program (94 employees have passed over the past four years), and they are currently active as environmental specialists at our manufacturing works, factories and affiliates. During fiscal 2009, we intend to train another 100 key environmental personnel to ensure we have the capacities needed to maintain and administer our environmental management system.

In fiscal 2008 we also conducted key environmental personnel training in China, the first time the program has been administered overseas. The goal was to improve the skill levels of environmental managers so that they are capable of responding to the recent rapid development of environmental laws and regulations in China.

Curriculum of Key Environmental Personnel Training and Abilities Acquired by Trainees

Curriculum	Features	Abilities
Explanation of legal requirements (fundamentals and practical application)	In-house instructors convey required knowledge based on their experience	Ability to understand what environmental laws and regulations require and explain the requirements to others
Acquisition of analytical techniques	Assessments are conducted based on data derived from chemical experiments	Ability to understand the chemical basis of phenomena and explain it to others
Identification of risks related to environmental facilities and formulation of improvement measures	Management expertise is conveyed using examples of past accidents and deficiencies	Ability to discover and mitigate latent environmental risks before they materialize
Internal auditing	Onsite inspections and compliance audits are practiced	Ability to perform audits based on knowledge of and experience with environmental laws and regulations

Key environmental personnel training in Japan

Key environmental personnel training in China

Training Environmental Auditors

It is not enough for environmental auditors to simply have qualifications and experience related to plant management and pollution control. Today, environmental audits cover a wide range of areas, including environmentally conscious product design and green procurement, so auditors must have specialized knowledge and practical experience in these areas as well. Auditing is a form of communication, so verbal abilities are a must, along with an objective, impartial orientation. Audits of progress on the Mitsubishi Electric Group's Environmental Plan, compliance with new regulations in Europe, and other matters are therefore handled by specialist auditors.

Auditing requires multilingual communication ability and an objective, impartial orientation. In order to train exceptional auditors, the Mitsubishi Electric Group conducts several types of environmental auditor training depending on the capacities of the trainees.

Site-specific auditor training is conducted for internal auditors at our various sites. We are also working to improve auditing quality on a group level by having sites audit one another and by conducting head office-led audit training as needed. In addition, we provide Internet-based seminars to train auditors in offsite locations and hold training sessions to further improve the skills of upper-level auditors. Auditing standards, guidelines and collections of practical examples have also been created, and information is disseminated throughout the Group via the company's intranet.

In fiscal 2008 participants in environmental auditor training over the Internet numbered 168 in the lower level and 146 in the middle level. Of these trainees, 163 passed the lower-level final exam and 144 passed for middle-level final. We intend to further enhance the curriculum through the addition of concrete presentations of examples of improvements made within the company.

A class on the environment being conducted at the head office of Mitsubishi Electric Lighting Corp

A presentation on waste handling in the area around the head office

Fostering Environmental Awareness

The Mitsubishi Electric Group works to foster environmental awareness so that each and every employee will be motivated to protect the environment.
For example, every issue of Eco News, which is published every other month (twice a year for the English and Chinese editions), highlights the Group's environmental policies and initiatives, innovative environmental activities taking place at various business sites, and the results of these activities. The publication helps to raise environmental awareness and promote communication throughout the Group.

One program in which employees are directly involved is the Mitsubishi Electric Outdoor Classroom, which we've held since fiscal 2008. Employees play the role of nature preservation leaders in conducting the classes, which are intended to give local children, employees and their families the chance to experience and learn about the environment through the observation of nature. Our goal is to train 1,000 employees as nature preservation leaders by 2021, Mitsubishi Electric's 100th anniversary. In fiscal 2008, 31 employees completed the training course and are now active at various business sites. The school was held a total of seven times and drew the participation of some 200 children, employees and family members. The program started as something of an experiment, but the response has exceeded all expectations, which has provided a renewed sense of the value of such activities. We intend to further extend the geographic reach of the program, make the classes more frequent and improve the curriculum.

Employees also actively participate in local woodland conservation, a program started in fiscal 2008. Efforts are made to protect woodlands near Mitsubishi Electric business sites, with "woodlands" defined broadly as natural environments near areas inhabited by people, including shorelines, rivers, fields and wooded areas. Through these activities we hope to foster greater environmental awareness.

A volunteer group in Kobe removes fallen trees and branches from a wooded area. The group hopes to make it a place where children can play safely.

As a Corporate Citizen

Environmental Report

Eco-Products

Design for the Environment

Mitsubishi Electric produces eco-products with ease of use and functionality that contribute to reducing the environmental impact over the entire product life cycle.

More

Recycling-Based Society

We established a system to collect and recycle end-of-life household appliances and PCs, and strive for technological developments that pursue the successful circulation of natural resources.

More

Compliance with Chemical Substance Regulations

We started the Green Accreditation system to address regulatory controls such as the RoHS Directive and the REACH Regulation throughout the entire supply chain.

More

Special Projects

Based on the know-how nurtured from introducing the company's high-efficiency and energy-saving equipment, we develop solutions that contribute to further reducing environmental impact.

More

Eco-Products

Design for the Environment

Design for the Environment, Eco-Products and Hyper Eco-Products

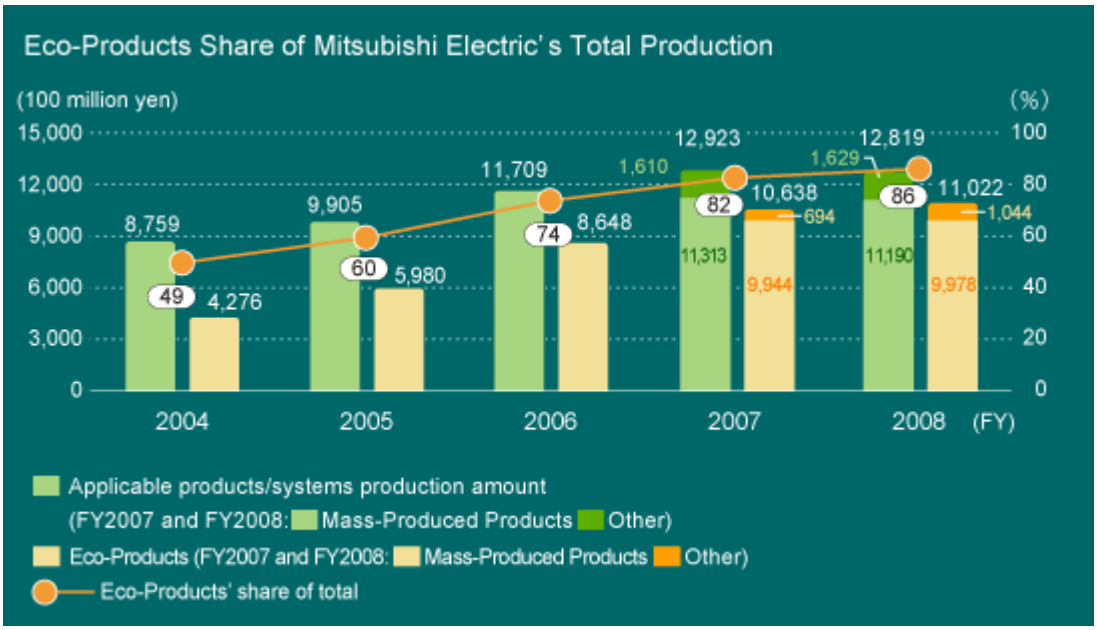
The Mitsubishi Electric Group has carried out the Design for the Environment (DFE) program since 1991. Through the DFE program, we implement a product assessment that evaluates the entire life cycle of each product from the "MET" perspective* and reconsider the design for products with unsatisfactory environmental efficiency, thereby improving the environmental consciousness of our products.

Under the 4th Environmental Plan, for evaluation purposes, the Factor X environmental efficiency improvement indicator is used to determine products which have achieved a superior level of environmental design, which are known as "Eco-products." Products that receive an extremely high environmental rating are certified "Hyper Eco-products." In fiscal 2008, 80 of Mitsubishi Electric's 167 product groups were designated as design-for-environment products. Of these, 24 products were certified as Hyper Eco-products.

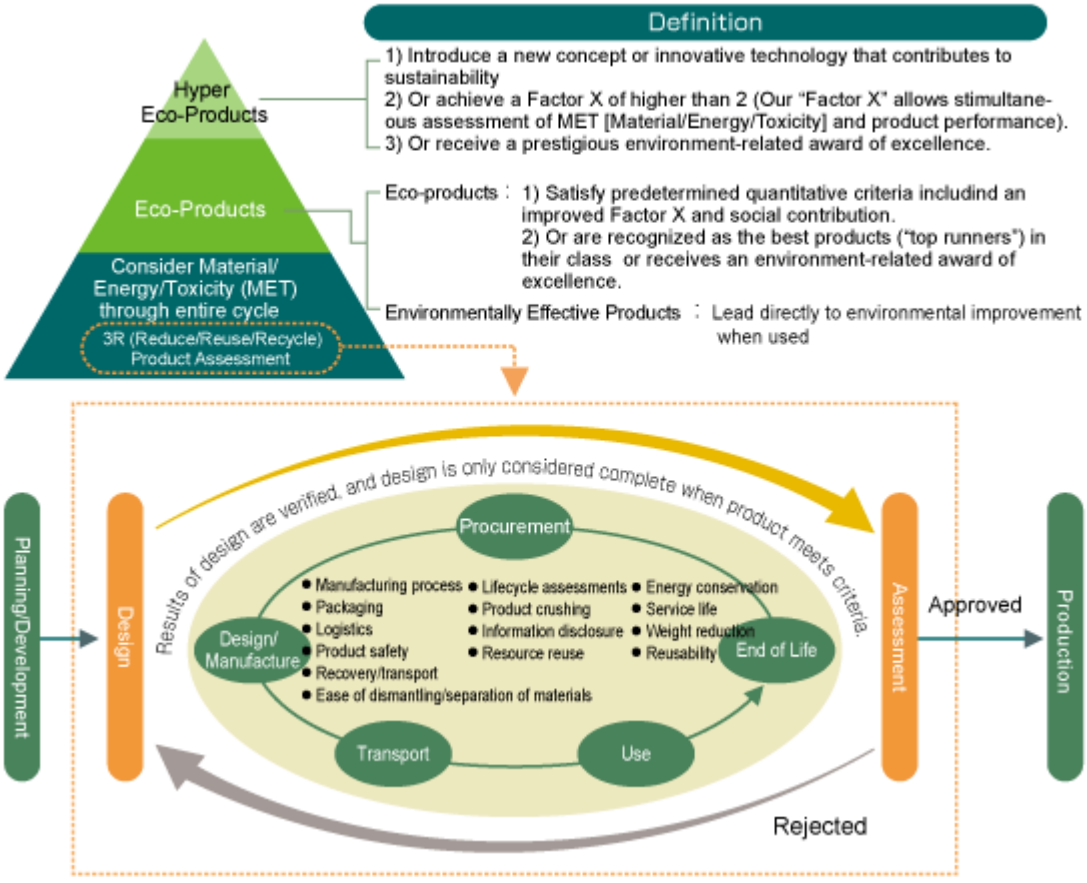
Under the 5th Environmental Plan, products are divided into mass-produced products and other products. Mass-produced products include household appliances and mass-produced industrial mechatronics products, while other products cover individually manufactured products and those made to order. We set a goal to raise the Eco-products ratio to 100% for mass-produced products and 80% for other products by fiscal 2009, in the belief that all mass-produced products we develop must be Eco-products. We pursue optimal environmental compatibility for mass-produced products and other products by setting separate goals for each. In fiscal 2008, the Eco-products ratio for mass-produced products was 89% and that for other products was 64%.

Under the 6th Environment Plan and thereafter, we will work to achieve our Environmental Vision 2021 and will review our product evaluation indicators, which are used to show the level of achievement we have attained with our products.

* The MET perspective consists of the following three viewpoints. [M]aterials: Effective use of resources; [E]nergy: Efficient use of energy; [T]oxicity: Avoidance of substances that are potentially harmful to the environment



The Concept of Design for the Environment



Utilizing Factor X

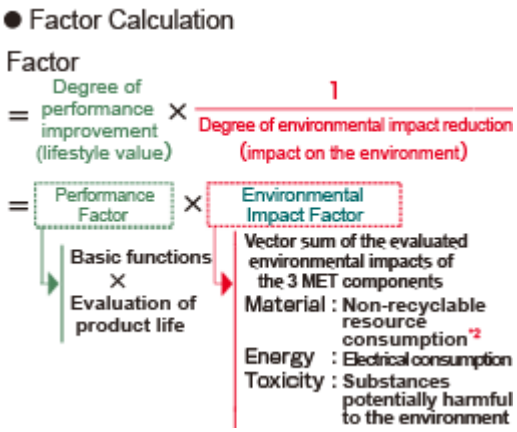
Factor X is an indicator that shows improvement in the eco-efficiency of products, integrating the efficiency levels for several environmental conservation items. The larger the X value, the more the product's performance has improved, resulting in reduced negative environmental impact. In 2001, we were the first in the industry in Japan to apply the concept of Factor X for product evaluations. Under the 5th Environment Plan, we are working to develop environmentally suitable products that can achieve Factor 2. Factor X is a comprehensive evaluation that addresses the environmental impact of the entire life cycle of each product from the "MET" perspective and, since April 2004, the improvements in product performance.

Previously, the Factor X indicator was calculated by each household appliance manufacturer using different methods, which made it impossible for consumers to compare products from different companies. In 2006, a group of five home appliance manufacturers, including Mitsubishi Electric, drafted standardized guidelines for the calculation formula under specific conditions. Under the guidelines, the product value is defined by multiplying the basic function by the standard usage period and the environmental impact by the emission of greenhouse gases during the product's life cycle. Since fiscal 2007, we have been conducting Factor X evaluations mainly on air conditioners, refrigerators, lamps and lighting devices based on the guidelines, and intend to expand the range of products for which this evaluation method is adopted.

To achieve the Environmental Vision 2021 announced in October 2007, the Group intends to reduce CO_2 emissions during product use and in the materials used, while discussing more appropriate methods to calculate and/or use Factor X.

Mitsubishi Electric's Basic Concepts to Calculate Factor X

- Comparison between a new product and a baseline product (in principle, we use Mitsubishi Electric products and a base year of 1990).
- Evaluations of the performance factor (improvement in product performance) and the environmental impact factor (reduction in negative environmental impact) are multiplied together to produce the rating.
  The performance index is evaluated by basic functions (product functions, performance, quality, etc.) multiplied by product life[1].
- The environmental impact of a product is evaluated using a sub-index for 1) non-recycled materials[2], 2) energy consumption, 3) toxicity ("MET," where M is the amount of non-recyclable resources consumed, E is the amount of electrical consumption, and T is the amount of substances potentially harmful to the environment), from which the environmental impact is calculated for the new product (using a value of 1 for the baseline product), and the final environmental impact index is represented by the length of vector that combines the three sub-indexes.



1: The performance index is defined separately for each product.

2: Sub-index for the amount of non-recyclable resource consumed=virgin resource consumption + non-recyclable resource consumption (i.e. the volume disposed of without being recycled) = [weight of product - weight of recycled materials and parts in the product] + [weight of product - weight of recyclable resources in the product]

Utilizing Life Cycle Assessment

The Mitsubishi Electric Group designs products for the environment by using Life Cycle Assessment (LCA) as one aspect of its product evaluations[1]. We have a standardized LCA database with a total of 796 items that has been made available over the company intranet. Lifecycle assessments are mandatory for all products.

In fiscal 2008, at Hyper Cycle Systems Co., Ltd., the industry's first household appliance recycling plant run by the Mitsubishi Electric Group, we collected data related to the recycled volumes and energy volumes of each process and evaluated the environmental impact of material recycling technology concerning four kinds of household appliancesair conditioners, TV sets, refrigerators/freezers and washing machines. Of these four categories, the recycled volume of end-of-life TV sets is the largest. The evaluation made it clear that material recycling technology can reduce as much as 75% of the greenhouse gas emissions from recycling TV sets compared with the conventional processing method (reclaiming and substrate processing), thereby proving the superiority of the material recycling technology.

As part of our efforts to achieve a recycling-based society, which is a goal of Environmental Vision 2021, we will promote the 3Rs[2] for products to which DFE technology and LCA technology are applied. We intend to reinforce the creation of products with consideration of the 3Rs through the entire life cycle of each product.
We also strive to release environmental information on our products, aiming to establish an information base that enables sharing and optimizing environmental product information in the supply chain.

1: Life Cycle Assessment is a methodology for quantitatively and comprehensively evaluating the environmental impacts of a product through its entire life cycle. This includes everything from resource extraction, design and manufacturing to transport, use and disposal.

2: Reducing, reusing and recycling of waste products.

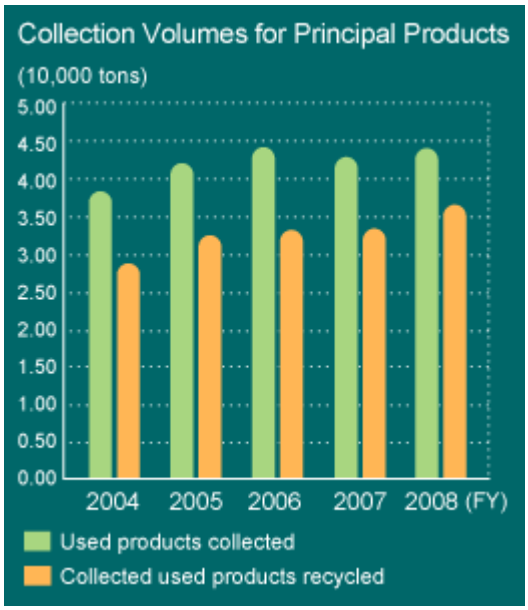
Environmental Topics: Recycling of Waste Plastics

Eco-Products

Recycling-Based Society

Recycling Four Kinds of Home Appliances

In 1999, two years prior to April 2001, when the Law for the Recycling of Specified Kinds of Home Appliances (Home Appliance Recycling Law) was enforced in Japan, Mitsubishi Electric became the first in the industry to operate an end-of-life appliances recycling plant, Hyper Cycle Systems Co., Ltd, and recycle not only air conditioners, television sets, refrigerators/freezers and washing machines (the four kinds of home appliances), but also office equipment and other items.



Hyper Cycle Systems, the largest recycling plant in Japan, has recycled approximately 350,000 tons (as of March 2008) since its establishment. In May 2008, it achieved 6 million cumulative household appliances recycled. Information on dismantling and sorting obtained through this process has been communicated back to product design divisions to improve recycling ratios.

In addition, Mitsubishi Electric has joined with five other home appliance manufacturers* to establish recycling plants in 16 locations nationwide. The companies work together to recycle end-of-life home appliances. In fiscal 2008, Mitsubishi Electric recycled 1.10 million units of the four kinds of home appliances (104% of the previous year's level) and had a recycling ratio of 82.5%.

Recycling Facilities Dedicated to Substrates at Hyper Cycle Systems

We developed a technology to bring waste plastic back to life and are expanding its use. Unlike metal, plastic has been considered difficult to recycle. We have reused polypropylene segregated and collected from the mixed fracture plastic for the drain components of refrigerators. In fiscal 2008, we started to reuse it for dishwasher dryer covers.

In 2008, at Hyper Cycle Systems, recycling facilities dedicated to substrates were installed to efficiently and fully recycle substrates and peripheral parts collected from end-of-life household appliances. Through these activities, we expect to achieve zero emissions at Hyper Cycle Systems in fiscal 2009.

* Fujitsu General, Hitachi Appliances, Sanyo Electric, Sharp and Sony.

Home Appliance Collection and Recycling (Fiscal 2008)

	Unit	Air Conditioners	Televisions	Refrigerators/ Freezers	Washing Machines	Total
Units received at designated collection points	1,000 units	258	338	317	188	1,101
Units processed	1,000 units	255	331	317	188	1,091
Weight processed	Tons	10,536	9,548	18,174	6,009	44,267
Weight reused in products	Tons	9,462	8,323	13,642	5,073	36,500
Ratio reused in products	%	89	87	75	84	-

Environmental Topics: Recycling of Waste Plastics

Recycling Personal Computers

In compliance with the Law for the Promotion of Effective Utilization of Resources (amended Recycling Law), we have recycled used industrial-use computers since April 2001; since October 2003 we have also recycled used domestic-use computers. In fiscal 2008, we collected a total of 5,599 computers, which represented a recycling rate of 74.7%.

To promote the recycling of used home-use PCs, it is effective to make it easier for customers to get the Recycle Mark, which allows them to discard old PCs at no charge. Although the Recycle Mark had been previously available only by mailing in a postcard, Mitsubishi Electric improved the home-use computer collection system (KONGO-K) in September 2007, thereby enabling application for the Recycle Mark via the Internet*. In addition, regarding applications for the recycling of our products sold in October 2003 or later, through communication with the Recycle Mark application contact desk we check and determine whether the PC Recycle Mark is applicable for such products, thereby preventing customers from making double payments for recycling.

There is a risk of data leakage from the hard disk drives of disposed computers. Although computer users have the basic responsibility for preventing data leaks, the companies we have contracted to recycle computers punch holes in the hard disk drives or use a strong magnet to destroy any data physically and magnetically, in order to prevent any confidential data from being leaked. Interested computer owners can also pay for a program to delete all data completely before their used computers are taken away.

Two private transportation companies handle the collection and transportation of used home-use PCs on commission, and 43 manufacturers jointly use these services. Should an accident occur in the network connecting these two transportation companies, such an event would cause confusion and disruption in our home-use PC collection system that is connected to their network. To prevent such a risk, we are discussing setting up a new collection system as a backup system. We are addressing this plan with six other manufacturers at the PC 3R Promotion Center, which is a limited liability intermediate corporation.

* Because Mitsubishi Electric stopped selling home-use PCs in fiscal 1999, the Recycle Mark is available only for PC displays.

Material Recycling from Used Computers (Home and Office) (Fiscal 2008)

	Unit	Desktop		Notebooks		CRT Displays		LCD Displays		Total	
Collected	Kg	32,582		3,603		41,559		5,098		82,842	
		Office	Home	Office	Home	Office	Home	Office	Home	Office	Home
		27,637	4,945	3,326	277	38,236	3,323	5,013	85	74,212	8,630
Number of units collected	Unit	2,247		858		1,776		718		5,599	
		Office	Home	Office	Home	Office	Home	Office	Home	Office	Home
		1,906	341	792	66	1,634	142	706	12	5,038	561
Weight recycled	Kg	32,582		3,603		41,559		5,098		82,842	
Weight reused	Kg	26,990		2,310		28,531		4,035		61,866	
Ratio of reuse and material recycling	%	82.8		64.1		68.7		79.1		74.7	

* The figures for CRT Displays and LCD Displays for office computers are combined figures from Mitsubishi Electric Information Technology Corp. and Mitsubishi Electric Corp. The figures for Desktops and Notebooks are from Mitsubishi Electric Information Technology Corp.

* Figures for home computers are figures from Mitsubishi Electric Information Technology Corp.

Compliance with the WEEE Directive

At the Mitsubishi Electric Group's sales companies in Europe, we strive to recognize the requirements related to the EU's WEEE Directive and their implementation status in each country. At the Europe Environmental Conference, which is held twice a year, we report on products regulated by the WEEE Directive, manufacturer registration, and participation in all collection schemes and processing fees to ensure the registration of all manufacturers and total participation in collection schemes.

Through the Europe Environmental Conference, discussions are under way to expand the range of products regulated by WEEE to include fixed equipment and monitoring and control devices. The Group will continue to carefully monitor the Europe Environmental Conferences and the laws and regulations of each country, thereby accurately addressing the WEEE Directive.

* The WEEE Directive is the EU's "Directive on Waste Electrical and Electronic Equipment," which became effective in February 2003. To prevent the generation of waste electrical and electronic equipment and reduce the processing volume of such equipment, WEEE aims to reuse and recycle waste. Member countries, distributors and manufacturers must fulfill their responsibility at each stage of design, sorting, collection and recycling.

Eco-Products

Compliance with Chemical Substance Regulations

The Globalization of Green Procurement

The Mitsubishi Electric Group promotes green procurement on the basis of its Green Procurement Standards Guide, which was originally drafted in September 2000 and continues to be revised to accord with current laws and regulations.

Particularly regarding the chemical substances contained in procured products, surveys are conducted by each company on their own standards and methods to reduce the burden on suppliers. Our surveys are conducted for the 24 JIG[1] substances using the Japan Green Procurement Survey Standardization Initiative's survey method.

In addition, we introduced a Green Accreditation system to ensure compliance with the EU's RoHS Directive[2]. This system enables secure procured product quality while also ensuring compliance by avoiding the risk of prohibited substances being included in products. Suppliers of the materials and secondary materials used in products are evaluated on environmental measures and how well they control the chemical substances contained in their products. Suppliers that meet the Company's standards are certified as green suppliers. As of March 31, 2008, 92% of all our suppliers were accredited as green suppliers.

We help suppliers that do not meet our standards to improve by having them attend the Green Accreditation explanatory meeting.

Moreover, we will work together with certified green suppliers to prepare for compliance with the EU's REACH policy[3], which will require the management of many more chemical substances.

1: The Joint Industry Guide is a set of guidelines related to the management of chemical substances contained in products, based on agreement between the Japan Green Procurement Survey Standardization Initiative and the U.S. Electronic Industries Alliance.

2: RoHS Directive: An EU directive restricting the use of six specified hazardous substances in electrical and electric equipment. This decree went into effect in July 2006.

3: REACH Policy: Regulations implemented in 2007 concerning the registration, evaluation, accreditation and restriction of chemicals regulated by the EU. This policy requires the registration and risk assessment of chemical products for which more than 1 ton per year is manufactured/imported and the provision of information and reporting to the European Chemicals Agency (ECHA) on electric and electronic products containing regulated substances.

Compliance with the EU's RoHS Directive and Regulations that Control the Pollution Caused by Electronic Information Products

The Mitsubishi Electric Group has completely eliminated use of the six specific substances[1] regulated by the EU's RoHS Directive (enforced July 2006) as of December 2005.

The Regulations that Control the Pollution Caused by Electronic Information Products[2] went into effect on March 1, 2007. The first stage made it mandatory that labeling include information on the six specified substances. Product labels must include the environmental period of validity (the period during which the product can be used without causing serious environmental pollution) and the manufacturing date. In fiscal 2007, we achieved compliance with these requirements.

The second stage of implementation has yet to begin, but inclusion of the six substances will be regulated for products listed in a priority products catalogue in accordance with the CCC certification method[3].

To comply with these regulations, we are acquiring information on the inclusion of chemical substances in parts and materials, as well as non-usage certificates to ensure reliability. We are also strengthening contamination prevention and traceability controls for the specified substances from a compliance standpoint, for example, by analyzing parts and materials with contamination risk ourselves and confirming the presence or absence of the substances.
In response to a trend toward reviewing unregulated items, we will replace currently used substances with alternatives, thereby ensuring compliance with these regulations.

1: The six specific substances are lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyl (PBB) and polybrominated diphenyl ether (PBDE).

2: Regulations that Control the Pollution Caused by Electronic Information Products is the so-called Chinese version of the RoHS Directive. These regulations were developed jointly by China's Ministry of Information Industry with six central government agencies, including the National Development and Reform Commission and the Ministry of Commerce. The regulations make it mandatory to provide information and labeling for the six substances specified by the EU's RoHS Directive.

3: CCC is an abbreviation for China Compulsory Certification.

Compliance with the REACH Policy

In June 2007, the EU's Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) policy took effect, thereby making it mandatory to conduct safety evaluations on approximately 30,000 kinds of chemical substances sold within EU countries.

The number of chemical substances handled by a single corporate group is enormous. It is impossibleboth from a technical perspective and in terms of the time requiredto pinpoint and analyze all such substances in the same way as required by the RoHS Directive.
(For instance, the Mitsubishi Electric Group will need to pinpoint and evaluate approximately 1,500 specified substances[1] used in our products to fulfill the responsibility to provide such information and report it to the regulatory authorities.)

To address this situation, industry-wide activities are under way to clarify the chemical substances contained in materials by accumulating information with the cooperation of companies both upstream and downstream in the supply chain. Specifically, upstream chemical and metal manufacturers began preparing and conveying information on the chemical substances that they combined and prepared to parts manufacturers in the middle, and that information is conveyed to assembling manufacturers downstream.

In September 2006, the Japan Article Management Promotion (JAMP)[2] was launched by a group of companies including Mitsubishi Electric. As one of the founders of this organization, we are participating in establishing the system.

Fiscal 2008 saw the full implementation of the Material Safety Data Sheet plus (MSDSplus), which is a description template for information on chemical substances used in paints and metal materials and preparation methods. We designed an in-house operation based on the MSDSplus to comply with the REACH policy. In July 2008, each company will begin to communicate information using the Article Information Sheet (AIS), which is a description template prepared by the JAMP for information on articles such as electronics parts and mechanical components.

Moreover, by no later than the end of June 2009, candidates for specified chemical substances will be determined, according to which we will begin to manage information on such substances.

In the future, the Mitsubishi Electric Group will promote dissemination activities such as holding explanatory meetings on the MSDSplus and the AIS for suppliers.

1: Specified chemical substances include those that are cancer-causing, persistent and bioaccumulative. The list of chemicals determined as such is to be released by June 1, 2009.

2: Japan Article Management Promotion (JAMP): With its secretariat inside the Japan Environmental Management Association for Industry, the JAMP voluntarily engages in cross-sectional activities including chemical manufacturers and the electric, electronic and automobile industries. There were 257 participating companies as of June 17, 2008.

Eco-Products

Special Projects

Expansion of Environmentally Beneficial Businesses

The Mitsubishi Electric Group is developing "environmentally beneficial businesses" that contribute to reducing environmental impact by leveraging the Company's know-how and energy-saving results acquired from installing Mitsubishi Electric eco-products at the Group's operational bases.

In fiscal 2008, we focused on expanding sales of our products and services mainly to manufacturing customers for which business activities have been more strictly regulated by the revised Energy Conservation Law. Our targets include the "promotion of energy-saving solution businesses to address global warming" and a "7% increase in net sales in environmentally beneficial businesses targeting corporations." Specifically, we developed Group tie-up projects in each segment and implemented sales promotion measures to grow the energy conservation-related businesses of the entire Group.

As a result of these activities, we almost achieved our target, as net sales in environmentally beneficial businesses targeting corporations for fiscal 2008 increased 6.5% to ¥84.29 billion.

The revised Energy Conservation Law imposes stricter regulations. It will require stronger energy management from corporations and more energy-saving functions in each building. Given such a trend, we intend to further expand and develop environmentally beneficial businesses optimizing the Group's comprehensive capabilities. Specifically, we will strive to understand business needs under the new regulations and the changing needs of existing customers, and promote system solutions through collaboration among Group companies.

Topics

Sales Promotion Measures for Fiscal 2008 in Energy-Saving Solution Businesses

Update the energy-saving support site

In September 2007, we updated our energy-saving support site within the Company's official Japanese website not only to provide information but also to obtain more feedback from customers and aggressively reflect such customer inquiries and opinions in our business negotiations. As part of this update, we reviewed the website, site map and "contact us" methodology so that the section of the site can function as the portal for the energy-saving business of the Mitsubishi Electric Group.

We intend to continue to update the website by providing more case examples and establishing links to related websites.

"Energy-Saving Support Site" page

Seminars for Corporate Customers

In May 2007, we held the 2007 Energy Saving Explanatory Meeting as part of the 2007 Electrical Construction Equipment and Materials Fair at Tokyo Big Sight. At the Energy Saving Explanatory Meeting, lecturers from the Energy Conservation Center of Japan (ECCJ) spoke and we advertised Mitsubishi Electric's energy-saving activities and products. In August 2007, we held a three-day seminar called Aggressive Energy Saving at Plants, where we introduced the energy-saving activities conducted at our works, the fruits of such activities and our know-how, thereby providing an opportunity to discuss energy conservation with customers.

Condensed brochures

We make two kinds of condensed brochure that provide an overview of the Mitsubishi Electric Group's energy-saving products and services. One is for factories and the other is for buildings and stores. These brochures are updated every six months.

Catalog for plants

Catalog for buildings and stores

Environmental Report

Preventing Global Warming

We are actively pursuing energy-saving activities at production sites and non-production sites, and steadily achieving our emissions targets each year.

More

Recycling-Based Society

Aiming for zero emissions, we recycle waste materials, reuse water, and take other steps to effectively use limited resources.

More

Managing Chemical Substances

Through our Chemical Substance Management System, we are working to properly manage harmful chemical substances, and reduce our emissions.

More

Eco-Factory Indicators

We have established our own indicators for quantifying environmental risk at production sites and offices, and are moving forward with efficient, effective environmental protection activities.

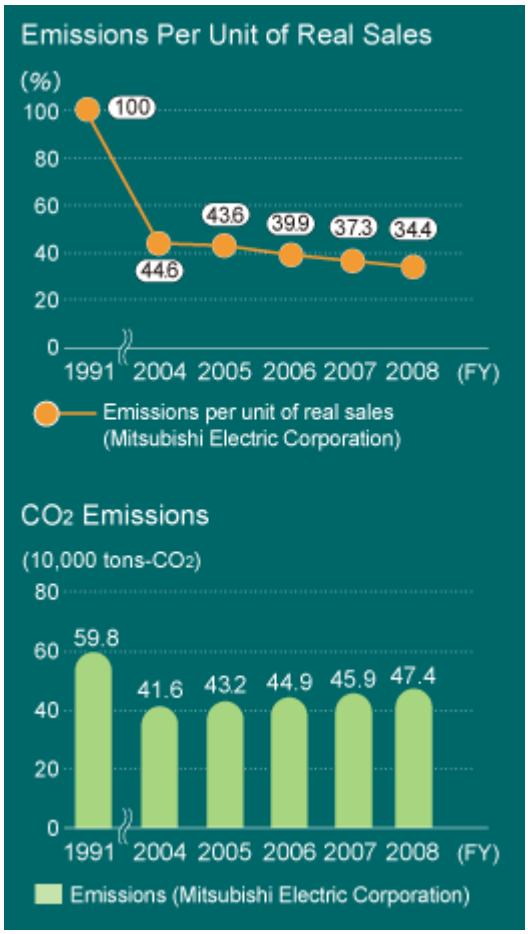
More

Eco-Manufacturing

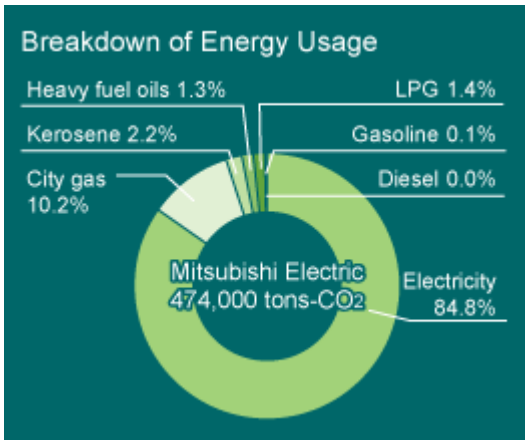
Preventing Global Warming

Target and Achievements for Our Domestic Production Sites (Including Research Labs)

Mitsubishi Electric has established a voluntary target of reducing its CO_2 emissions per unit of real sales by 60% or more at domestic production sites (including research labs) by fiscal 2011.
To achieve this goal, we are aiming to reduce CO_2 emissions by 33,000 tons between fiscal 2007 and fiscal 2011. Under our 5th Environmental Plan, spanning fiscal years 2007 to 2009, we have committed to lowering our CO_2 emissions at production sites (including research labs) by 2% per unit of real sales.



To achieve our voluntary targets, we formulated our energy conservation action plan in fiscal 2005, and are introducing high-efficiency equipment, undertaking energy-loss minimization (EM) activities*, and moving ahead with fuel conversion.
In investing in high-efficiency equipment, we are purchasing high-efficiency equipment and other energy-saving devices and facilities with a spending target of 0.1% of annual production facility output. In fiscal 2008, we invested a total of ¥2.91 billion in energy-saving devices and facilities for three production sites, and ¥460 million in productivity improvement activities, producing a total CO_2 reduction of 13,000 tons.



By fiscal 2007, Mitsubishi Electric had already achieved its fiscal 2011 target of reducing its CO_2 emissions per unit of real sales by 60% or more, and, in fiscal 2008, we further reduced our CO_2 emissions by 2.9% compared to the previous fiscal year (reducing emissions to 65.6% of the level for fiscal 1991).

Based on these results, we committed to the year 2021 target of lowering our production-related CO_2 emissions to 30% of the level for fiscal 1991 in our Environmental Vision 2021, announced in October 2007. To achieve this target, Mitsubishi Electric, the parent company, will reduce its CO_2 emissions by 210,000 tons during the same time frame.
To achieve this target, we continue to implement measures based on our energy conservation action plan.

* The objective of Energy Loss Minimization (EM) activities is to make energy usage visible at the production site, production process, or facility level and reduce losses.

Energy Conservation Action Plan

Action Plan	FY2011 Reduction Target (tons-CO_2)	FY2006		FY2007		FY2008	
		Result		Result		Result	
		Reduction (tons-CO_2)	Investment (Millions of yen)	Reduction (tons-CO_2)	Investment (Millions of yen)	Reduction (tons-CO_2)	Investment (Millions of yen)
Install high efficiency equipment	34,800	5,910	1,468	8,842	2,481	7,514	2,753
Energy-loss minimization (EM) activities	8,000	266	76	890	156	454	153
Shift to alternative fuels	3,200	334	49	320	25	4	2
Total	46,000	6,510	1,593	10,052	2,662	7,972	2,908
Cumulative	-	12,694	3,125	22,746	5,787	30,718	8,695

Topics

Promoting Energy-Saving Interactive Diagnosis Activities at Production Sites

Mitsubishi Electric is pursuing Energy-Saving Interactive Diagnosis Activities in which personnel responsible for energy at production sites inspect the energy-related activities at other Mitsubishi Electric production sites. These activities have three purposes. The first is to identify opportunities to save energy and point out potential improvements, the second is to accumulate technologies and know-how that are beneficial to the environment, and the third is to promote the replication of outstanding activities throughout the company.

Energy-Saving Interactive Diagnosis Activities have taken place at multiple sites each year since fiscal 2003, and results have been used to reduce waste by, for example, eliminating standby power usage and using fewer lighting fixtures. Improvement measures like facility burden standardization and controlling the number of facilities and operation have been implemented to achieve significant energy savings.

In fiscal 2008, Energy-Saving Interactive Diagnosis Activities were implemented at five sites, including research labs and affiliates. Nearly all Mitsubishi Electric (parent company) production sites were included. In addition, self-diagnosis manuals were completed for each site and uploaded to the intranet.

In the future, internal production sites will undergo second inspections and be pursued to a greater extent among affiliates.

Energy-Saving Diagnosis Flow

Nagoya Works Receives Inaugural Nagoya City Outstanding Eco Commercial Facility Award

The City of Nagoya certifies commercial facilities that voluntarily and actively pursue environmentally conscious activities as "Eco Commercial Facilities." In 2008, it began presenting awards to those commercial facilities that are particularly outstanding and models for other companies.


Award presentation ceremony

In this first year of the award, Mitsubishi Electric's Nagoya Works was presented with the "Nagoya City Outstanding Eco Commercial Facility Award" in the environmental management systems category.

In presenting the award, the City of Nagoya praised the Nagoya Works for actively introducing high-efficiency transformers, inverter power sources, and other high-efficiency devices to make its production facility more energy efficient, and for actively disseminating information by working with local government to hold factory tours for the public.

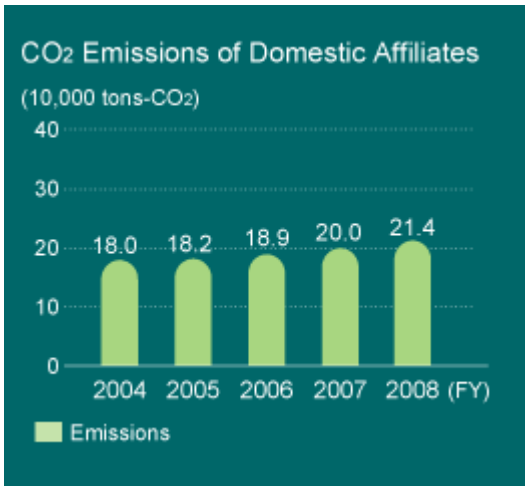
Targets and Achievements for Domestic Affiliates and Overseas Affiliates

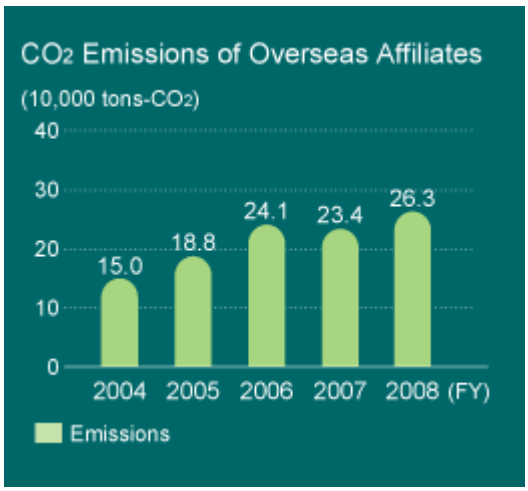
Mitsubishi Electric Group affiliates, both domestic and overseas, established the goals of reducing emissions per unit of real sales by 1% per year by fiscal 2009.

Domestic affiliates undertook efforts like updating boilers and air-conditioning equipment, and limiting air conditioner usage, but fiscal 2008 emissions per unit of real sales remained unchanged from the prior year, with total CO_2 emissions at 214,000 tons. The reduction in emissions per unit of real sales came to 5.8%.

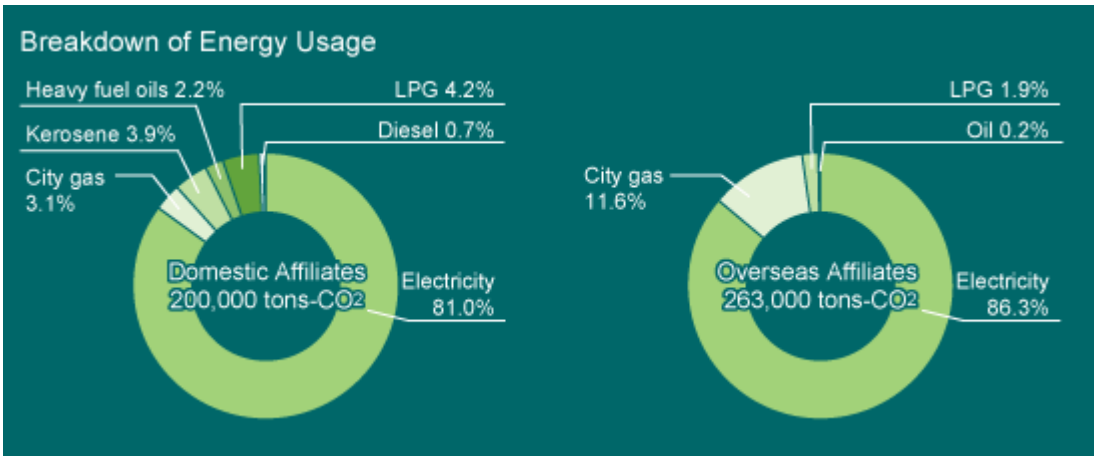
Overseas affiliates replaced lighting fixtures with energy-efficient alternatives, relocated ceiling vents, and undertook other actions as EM (energy-loss minimization) activities. As a result, they lowered their fiscal 2008 emissions per unit of real sales by 1.5%. Total CO_2 emissions came to 263,000 tons.

Moving ahead, to achieve the year 2021 target of lowering our production-related CO_2 emissions to 30% of the level for fiscal 1991 in our Environmental Vision 2021 (For domestic production affiliates, a 110,000 ton reduction relative to fiscal 2001, and for overseas production affiliates, a 200,000 ton reduction relative to fiscal 2006), we will begin preparing specific reduction scenarios in the current fiscal year.





Breakdown of Energy Usage



Targets and Achievements for Offices

In pursuit of energy savings activities in office environments, Mitsubishi Electric head and branch offices established the goal of reducing emissions per unit of floor space by 1% per year by fiscal 2009.

To meet that goal, they undertook initiatives like setting thermostats at 20˚C in the winter and 28˚C in the summer to reduce electricity consumed for heating and air-conditioning, turned off lights during lunch hours, and turned off computers when away from desks for long periods.

In addition, Mitsubishi Electric is supporting a campaign to reduce CO_2 emissions by 1 kilogram per person per day, encouraging employees and their families to participate in the "CO_2 Reduction Challenge," and taking other steps to increase awareness of energy-saving activities.

As a result of these initiatives, the head and branch offices cut their fiscal 2008 CO_2 emissions 2% per unit of floor space compared to the prior year, despite an overall increase due to higher sales.

With Environmental Vision 2021, we have committed to reducing our total CO_2 emissions and will examine scenarios for reducing total emissions even in non-production sites.

Topics

Fostering a Culture that Encourages Employees to Exercise Initiative in Energy-Saving Activities
Kyushu Branch Office Mitsubishi Electric Corporation


Environmental Talk

To help employees develop a more personal sense of environmental problems, Mitsubishi Electric Corporation's Kyushu branch sponsored environmental talks in November 2007, focusing on global warming prevention activities that employees and their families can undertake.

Corporate Environmental Sustainability Group personnel participating as speakers explained energy-saving activities for the home and workplace and discussed topics including the Mitsubishi Electric Outdoor Classroom. Participating employees indicated that they had gained a new appreciation for what companies should do to prevent global warming and that they had come to understand the significance of Mitsubishi Electric's efforts to increase environmental awareness. It is hoped that these efforts by the Kyushu branch office will encourage individual employees to initiate energy-saving activities in their immediate environments both inside and outside the workplace.

Reducing CO_2 Emissions without the Kyoto Mechanisms*

The Kyoto Protocol's coming into effect in February 2005 attached international recognition to the Kyoto Mechanisms enabling the use of international collaboration to reduce CO_2 emissions. Mitsubishi Electric, however, is committed to achieving voluntary targets through its own efforts by investing in energy efficiency at production sites and promoting energy-saving initiatives. Under Environmental Vision 2021, we have established new targets, which we are aiming to achieve through our own efforts. At this time, we have no plans to use the Kyoto Mechanisms.

Note:
There are three Kyoto Mechanisms:

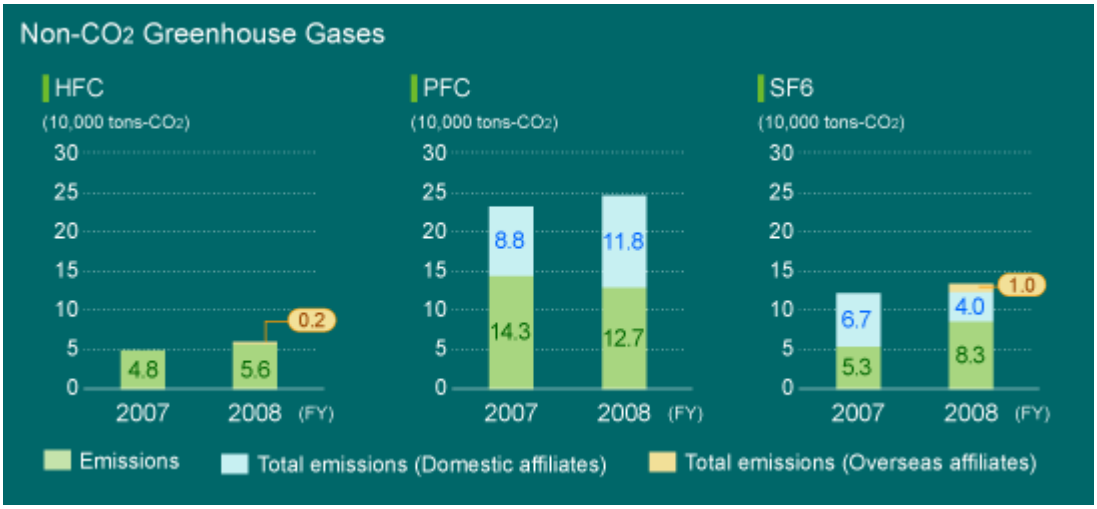
1) The Clean Development Mechanism enables developed countries and developing countries to jointly implement a project and the country supplying the investment (developed country) to apply the amount of emissions reduced to its own reduction targets.
2) Joint Implementation enables developed countries to jointly implement a project and the country supplying the investment to apply the amount of emissions reduced to its own reduction targets.
3) Emissions Trading enables developed countries to buy and sell emissions in order to meet reduction targets.

Reducing Emissions of Non-CO_2 Greenhouse Gases

Non-CO_2 greenhouse gases Mitsubishi Electric emits through its business activities include hydrochlorofluorocarbon (HCFC), a refrigerant used in air conditioners and refrigerators; perfluorocarbon (PFC), an etching gas used in making products like semiconductors and liquid crystals; and SF_6 (sulfur hexafluoride), an electrical insulating gas used in gas insulated switchgears.

In fiscal 2008, production increased in most of our businesses, resulting in greater emissions of these three greenhouse gases, compared to the prior fiscal year. Atmospheric emissions of SF_6, in particular, increased significantly due to the approximate doubling of the production of switchgears, all of which undergo insulation testing prior to shipment. In addition, switchgears produced overseas undergo insulation testing in Japan, and greater demand driven by factors like the economic expansion of other countries (especially China) increased testing volume and, therefore, SF_6 atmospheric emissions.

To reduce emissions of these gases, we are presently examining measures like changing the test gas pathways and improving the performance of gas recovery devices (upgrading pumps and others).



Eco-Manufacturing

Recycling-Based Society

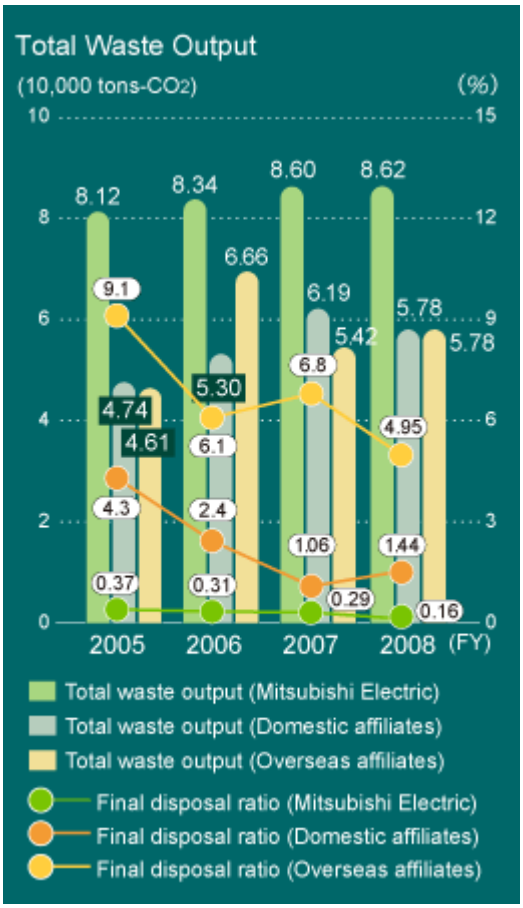
Zero Emission Initiatives

Under its 5th Environmental Plan, the Mitsubishi Electric Group is working toward the goals of reducing waste heading directly to landfills to 0.5% or less of total waste at domestic production sites, and 1% or less at domestic production affiliates.

In fiscal 2008, direct landfill waste as a percentage of total waste came to 0.16% at domestic production sites, making for a sixth consecutive year of results of 1% or less and a fourth consecutive year of results of 0.5% or less. At domestic production affiliates, direct landfill waste for fiscal 2008 came to 1.44%, versus 1.06% for the previous fiscal year.

Going forward, we are aiming to reduce direct landfill waste to zero at both domestic production sites and domestic production affiliates. Toward that end, we are examining measures like the creation of indicators prioritizing recycling methods and the elimination of production byproducts.

At overseas production sites, total waste has increased, but the final disposal percentage has improved by 1.85 percentage points, to 4.95%.



Topics

Overcoming Difficulties to Achieve "Perfect Emissions"
Nagasaki Works

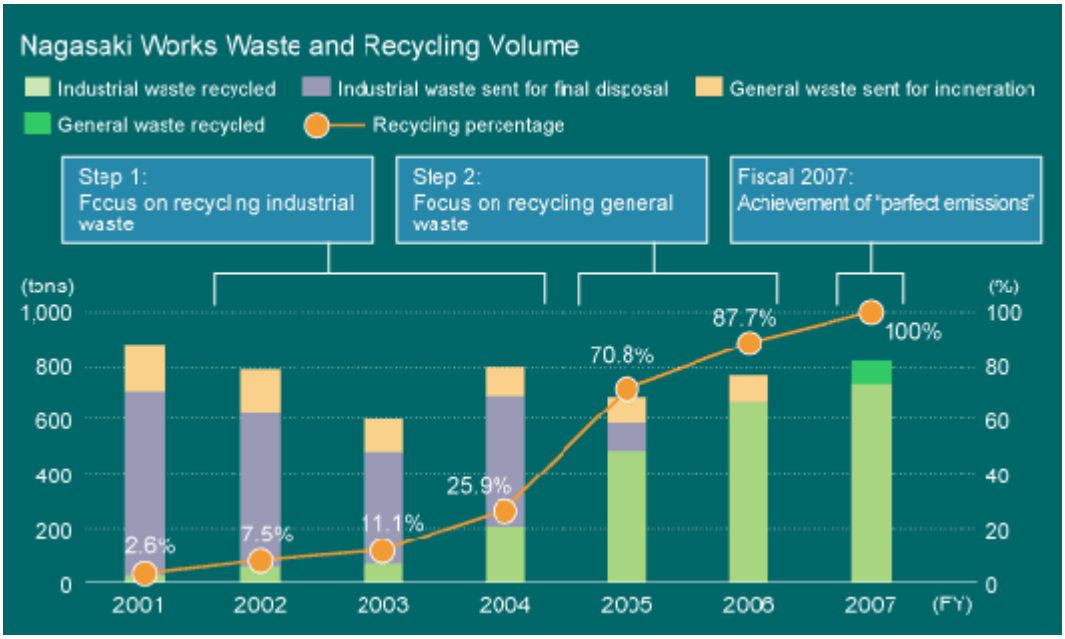
Because it manufactures mainly products only in response to individual orders and only in individual units products like Diamond Vision large-scale video displays as well as industrial heating and cooling equipment the Nagasaki Works produces only small amounts of various types of waste, and that made it more difficult to pursue recycling there than at production sites turning out products in large volumes. Nevertheless, the Nagasaki Works embarked on waste reduction activities in fiscal 2002 with its sights set on a target that went beyond eliminating final disposal of waste or achieving zero emissions. It set out to achieve "perfect emissions" the complete elimination of final emissions including those related to intermediate processing which it achieved in fiscal 2007.

As its first step (fiscal 2002-fiscal 2004), the Nagasaki Works took on the challenge of recycling industrial waste. At a time when nearly all industrial waste was either sent to a landfill or incinerated, there were few facilities or waste processing companies doing anything in the area of reycling in Nagasaki Prefecture. The Nagasaki Works, therefore, looked outside the prefecture, and studied advanced recycling technologies and the operation of recycling facilities. They then worked with waste processing companies in the City of Kitakyushu and Yamaguchi Prefecture, found a way to move forward with wide-area recycling, and created an approach for recycling 100% of industrial waste.

As its second step (fiscal 2005-fiscal 2006), the Nagasaki Works focused its attention on recycling general waste. Though legal limitations at the time meant that most general waste was incinerated by local governments, that had become a serious problem for local governments whose aging processing facilities were not up to the task of handling the enormous increases in general waste volume that had already taken place. Given those circumstances, the Nagasaki Works joined forces with waste processing companies eager to pursue recycling and mounted a concerted effort to gain authorization to process general waste. Their efforts paid off with authorizations that opened the door to recycling by allowing several companies to recycle general waste. The goal of "perfect emissions" was achieved in fiscal 2007 and in recognition of that achievement, the City of Nagasaki named the Nagasaki Works the winner of the Chairman's Prize at the Fiscal 2008 Awards Ceremony for Meritorious Reduce, Reuse, and Recycle Achievements sponsored by the 3R Promotion Committee.

Aiming to add to its achievements, the Nagasaki Works has, since fiscal 2007, been working to improve recycling quality and lower CO_2 emissions from the transport of waste. It is also now working to disseminate the recycling knowledge it has developed to other production sites and production affiliates.

Nagasaki Works Waste and Recycling Volume



Environmental Topics: Towards Zero Emissions

Reducing Waste Emissions and Recycling

Waste reduction and recycling involve more than reducing volumes. Proper processing in accordance with the law is required to avoid illegal dumping.

To address that need, Mitsubishi Electric has established a waste and recycling governance working group within its Eco-factory and Eco-office Technology Committee. This working group addresses a wide variety of issues ranging from production site waste management to the effective application of resources by entire operations, from the perspective of avoiding risk related to waste and recycling.

For example, regarding the use of different recycling methods for different types of waste, the working group determines what recycling methods are being used on a site-by-site basis and considers measures like establishing model production sites and creating waste indicators.

To help ensure proper waste processing, the working group pursues risk reduction initiatives by, for example, requesting waste processing companies to complete surveys for gathering information on manifest management, authorization renewals, and other matters.

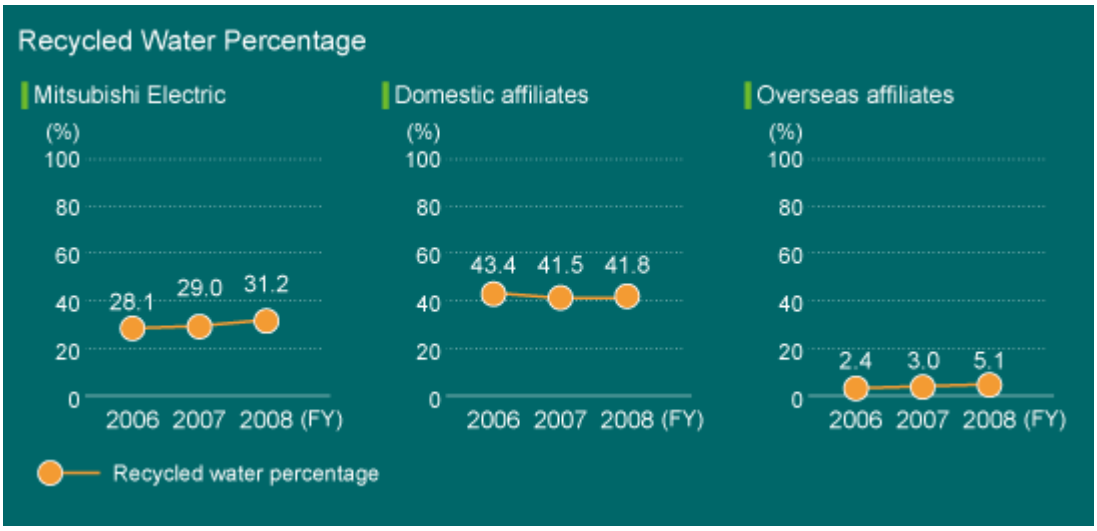
Promoting the Reuse of Water at Business Sites

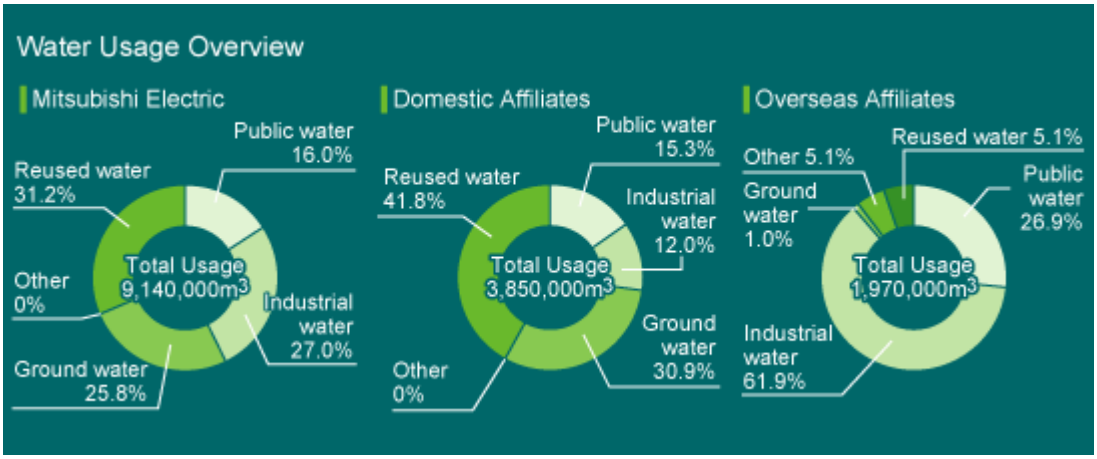
In its 5th Environmental Plan the Mitsubishi Electric Group set forth the goal of re-investigating and reconfirming how water is used at each business site and affiliated company, and formulating and promoting measures for more effective water usage. The goal of this initiative is to promote recycling and reuse of public water, industrial water, groundwater, and other precious water resources at production sites.

As a result of ongoing water conservation efforts at production sites and offices, public and industrial water recycling efforts, and other initiatives, Mitsubishi Electric's (parent-only) fiscal 2008 water usage came to 9.14 million m^3, with recycled water totaling 2.85 million m^3. The recycled water percentage of 31.2% represents an improvement of 2.2 percentage points versus the prior year. Water usage at domestic and overseas affiliates totaled 3.85 million m^3, with 1.97 million m^3 recycled.

In fiscal 2009, efforts are being made to advance water recycling by reconsidering possibilities for using rainwater and recycled water and by expanding the scope for water usage studies.


Water Usage
Mitsubishi Electric
(10,000m3)
1,200
1,000
800
600
400
200
0
939
960
914
2006 2007 2008 (FY)
Domestic affiliates
(10,000m3)
419
410
385
2006 2007 2008 (FY)
Overseas affiliates
(10,000m3)
164
159
197
2006 2007 2008 (FY)
Amount of use


Recycled Water Percentage
Mitsubishi Electric
(%)
100
80
60
40
20
0
28.1
29.0
31.2
2006 2007 2008 (FY)
Domestic affiliates
(%)
43.4
41.5
41.8
2006 2007 2008 (FY)
Overseas affiliates
(%)
2.4
3.0
5.1
2006 2007 2008 (FY)
Recycled water percentage


Water Usage Overview
Mitsubishi Electric
Public water 16.0%
Reused water 31.2%
Other 0%
Industrial water 27.0%
Ground water 25.8%
Total Usage 9,140,000m3
Domestic Affiliates
Public water 15.3%
Reused water 41.8%
Industrial water 12.0%
Ground water 30.9%
Other 0%
Total Usage 3,850,000m3
Overseas Affiliates
Other 5.1%
Reused water 5.1%
Ground water 1.0%
Public water 26.9%
Industrial water 61.9%
Total Usage 1,970,000m3

Eco-Manufacturing

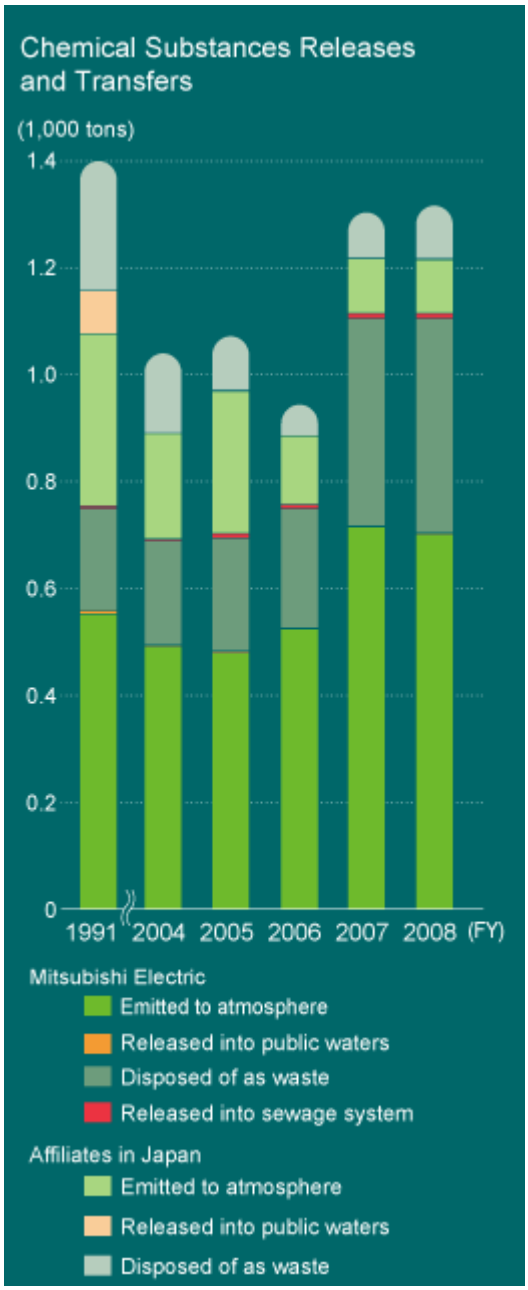
Managing Chemical Substances

Reducing the Release of Chemical Substances

The Mitsubishi Electric Group's production facilities in Japan have been managing chemical substances on a voluntary basis since 1997. We currently manage a total of 580 substances: 354 PRTR-designated substances[1] and 226 others managed voluntarily. These include refrigerant fluorocarbons (HFC[2] and HCFC[3]) used in air conditioners and refrigerators, volatile organic compounds, and the six RoHS substances. They are regulated to protect the environment and to meet the expectations of the public. The substances are managed through the use of our chemical substance management system, which includes purchasing information on parts and materials.

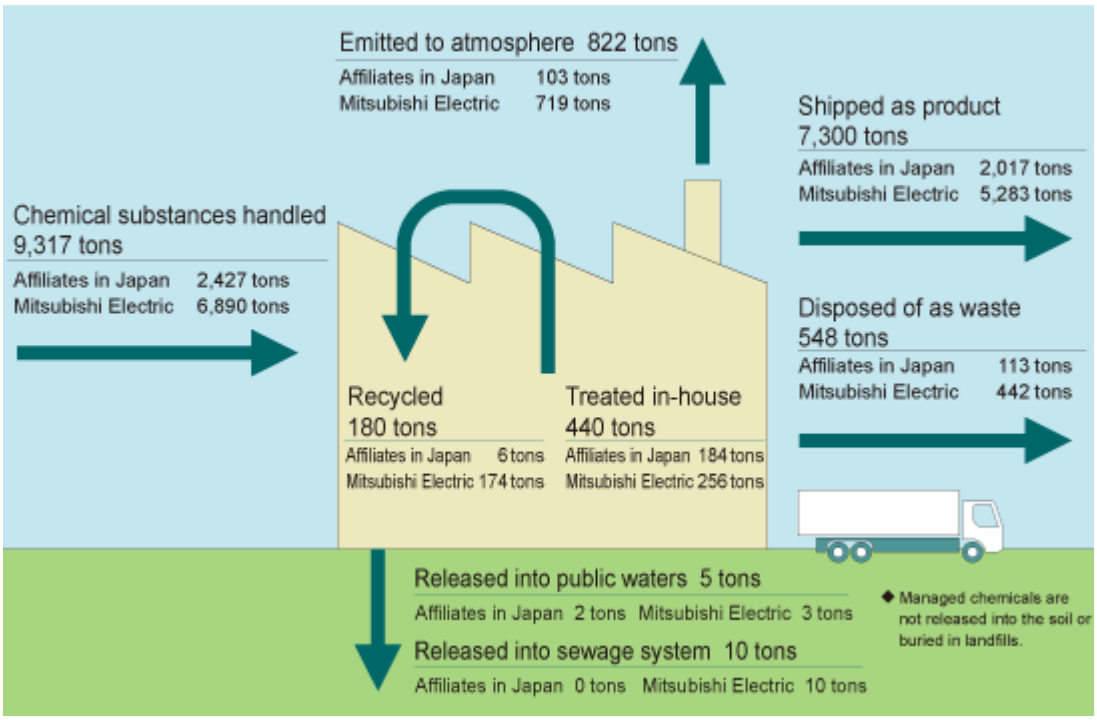
The graph on the right shows chemical substance releases and transfers for fiscal 2008. Releases and transfers increased by an aggregate 6.3% due to higher production volume. The top ten chemical substances in terms of release and transfer volume handled by the Group are shown in the tables below. To replace styrene, xylene, and other VOCs, we are using viable technologies wherever possible, but are only now reaching the stage at which it is necessary to develop and apply substitute technologies.

Aiming to further reduce our VOC emissions, we are pushing ahead with the application of new reduction technologies, primarily for styrene, xylene, and other such chemicals.



Notes:
1: Pollutant Release and Transfer Register
2: Hydrochlorofluorocarbons
3: Hydrofluorocarbons

Material Balance of Chemical Substances Subject to Regulation



Mitsubishi Electric Group Chemical Release/Transfer Ranking (for Fiscal 2008)

(Mitsubishi Electric)
Unit: tons

Rank	Chemical	Volume Handled	Release	Release			Transfer			Treated in-house	Recycled
			Transfer	Air	Public waters	Soil	Waste	Sewage system	Consumed		
1	Isopropyl alcohol	473	264	112	0	0	152	0	18	191	0
2	Butyl acetate	1670	151	123	0	0	27	0	1,519	0	0
3	Styrene	182	146	127	0	0	20	0	30	4	1
4	Xylene	140	136	47	0	0	89	0	1	1	1
5	Toluene	127	105	94	0	0	11	0	3	1	18
6	Acetone	74	59	39	0	0	20	0	0	0	14
7	Ethyl benzene	45	42	37	0	0	6	0	1	1	1
8	Ethyl acetate	35	27	17	0	0	11	0	0	5	2
9	Hydrogen fluoride and its water-soluble salts	26	22	21	0	0	1	0	0	0	4
10	Methanol	143	22	0	2	0	15	5	0	23	98

(Affiliates in Japan)
Unit: tons

Rank	Chemical	Volume Handled	Release	Release			Transfer			Treated in-house	Recycled waste
			Transfer	Air	Public waters	Soil	Waste	Sewage system	Consumed		
1	Toluene	143	66	52	0	0	14	0	55	22	0
2	Methyl ethyl ketone	106	34	31	0	0	3	0	68	4	0
3	Xylene	140	16	0	0	0	16	0	89	35	0
4	Ethanol	107	12	0	0	0	12	0	67	27	0
5	Hydrogen fluoride and its water-soluble salts	69	12	11	0	0	1	0	54	2	0
6	Sulfur hexafluoride	389	6	0	0	0	6	0	383	0	0
7	Ethyl benzene	52	6	0	0	0	6	0	33	13	0
8	Isopropyl alcohol	517	6	2	0	0	4	0	491	21	0
9	Acetone	93	5	0	0	0	5	0	89	0	0
10	Styrene	3	3	3	0	0	0	0	0	0	0

Eco-Manufacturing

Eco-Factory Indicators

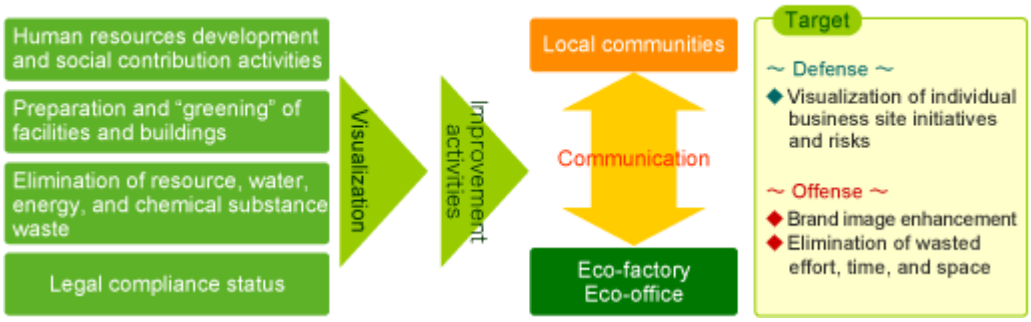
Developing Eco-factory and Eco-office Evaluation Indicators

The Mitsubishi Electric Group has outlined its "Eco-factory and Eco-office" stance in its 5th Environmental Plan. Eco-factory and Eco-office activities will extend to offices the environmental burden reduction activities that so far focused on factories, elevate activity and management-level quality at all business sites, and enhance environmental efficiency. We are formulating guidelines for promoting these initiatives, and are aiming to complete the certification system and begin implementation in fiscal 2009.

In fiscal 2007, prior to formulating the guidelines, we created the Eco-factory and Eco-office Indicators for clarifying issues related to environmental activities at individual production sites and offices. These indicators quantify environmental risks related to production sites and offices and were used on a test basis to evaluate five production sites in fiscal 2007. In fiscal 2008, application was expanded to all Mitsubishi Electric production sites.

Evaluations of offices are scheduled to begin in fiscal 2009, and guidelines and the certification system will be completed once evaluation results for all production sites and offices are obtained.

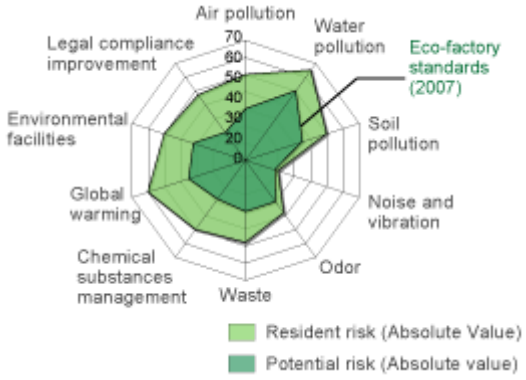
■ Eco-factory and Eco-office Concept



Eco-factory and Eco-office Evaluation Indicators

Eco-factory and Eco-office evaluation items are largely divided into the following three classifications.

Example of evaluation chart



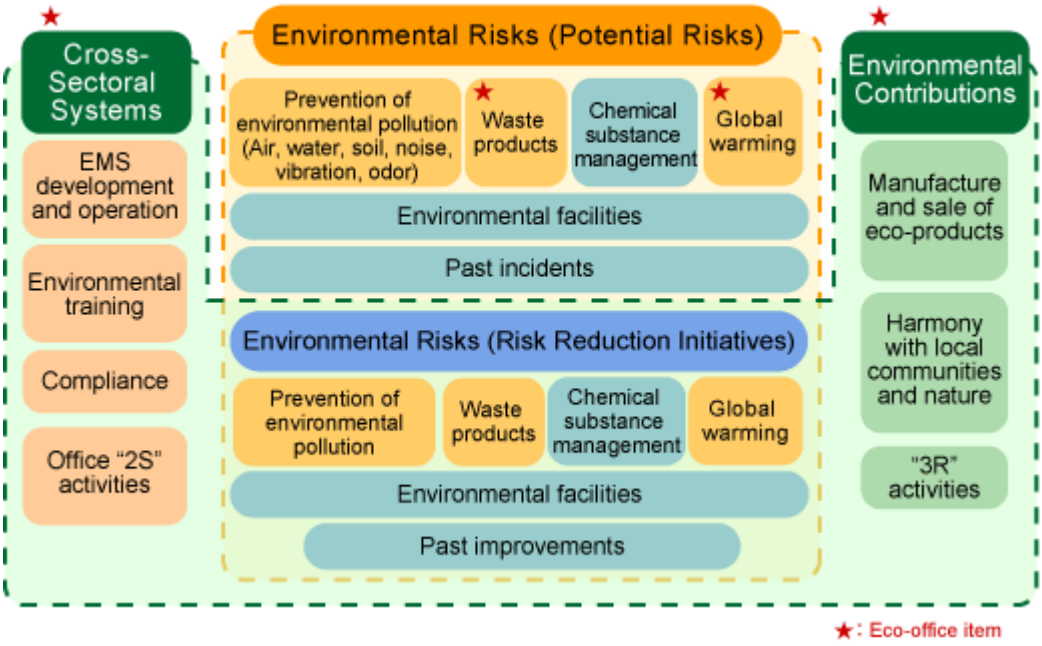
(1) Cross-sector items (systems, organizations, etc.)
Evaluation of Environmental Management System (EMS) development and operation, environmental training, legal compliance, office "2S" activities, and other environmental activities required for operating a production site.

(2) Environmental risks (by environmental burden item)
Evaluations addressing prevention of environmental pollution, waste products, chemical substances management, global warming, environmental facilities, past improvements, and other areas related to burdens placed on the environment through production site operation. Evaluations address both potential risks and risk reduction initiatives.

(3) Environmental contributions (external and internal)
Evaluation of manufacturing and sales of eco-products, "3R" and other activities as environmental activities other than those given in (1) and (2) above. Also, evaluation of initiatives related to coexistence with local communities and nature.

At business offices, we have placed heavy emphasis on cross-sector systems and environmental contributions, and for environmental risks we have decided to primarily evaluate issues pertaining to waste products and global warming.

Assessment Indicators and Framework for Environmental Risk



Environmental Report

Preventing Global Warming

Lessening CO_2 emissions from logistics through the promotion of JIT (just in time) activities in logistics, efficient transport, and optimization of the transportation stage.

More

Saving on Distribution Materials

Minimizing resources through actively using less packaging materials as one aspect of JIT (just in time) activities in logistics.

More

Eco-Logistics

Preventing Global Warming

Promote JIT Activities in Logistics

The Group has been promoting an in-house project for improving logistics, the Just-in-Time Improvement Project, since fiscal 2007.

Through this project, we are working to increase the transparency of logistics through quantitative assessments, improve efficiency and make logistics more economical by eliminating irrational or wasteful practices, and lower environmental impact.

The Mitsubishi Electric Group will continue to pursue this project in the future and strive to achieve even greater reductions in the environmental impact of our logistics.

Reducing CO_2 Emissions in Product Distribution

Since fiscal 2003, the Mitsubishi Group (in Japan)* has been working to reduce CO_2 emissions during the transport of products (products<selling>logistics). Under our 5th Environmental Plan, we have established the target of reducing fiscal 2009 CO_2 emissions per unit of net shipping weight by 30% compared to fiscal 2003. Under this plan, we achieved a reduction of 22% (total CO_2 emissions of 940,000 tons) in fiscal 2008, the midway point of the period covered by the plan. Mitsubishi Electric achieved a reduction of 33% on a non-consolidated basis, achieving its target under the plan.

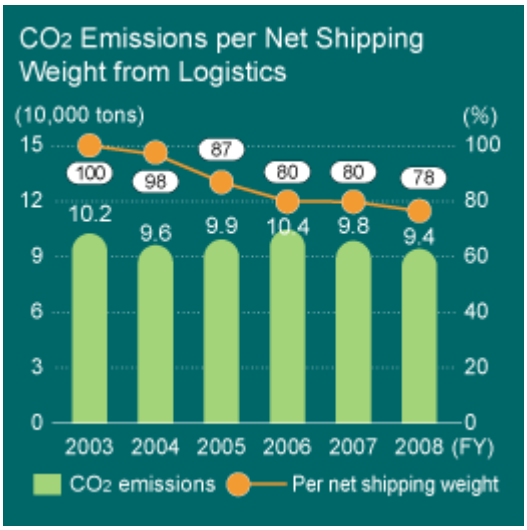
To reduce our CO_2 emissions, we are switching from trucks to trains and ships as transport modes and reducing the number of trucks we use. In fiscal 2008, we shifted 13% of the overall weight we shipped away from trucks, to trains and ships.

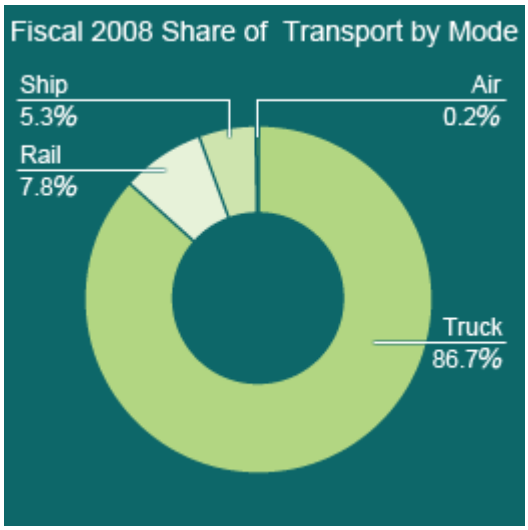
To reduce the number of trucks we use, we have begun to load trucks with small amounts of multiple products and are improving loading efficiency by making products smaller and lighter. In fiscal 2009, we will propose measures and an action plan for meeting our 5th Environmental Plan targets and our Environmental Vision 2021 CO_2 emissions reduction targets, and complying with the revised Rationalization in Energy Use Law.

Overseas, the environmental management and logistics units of affiliates in North America, Europe, and other locations are working together in promoting "eco-logistics" activities. In fiscal 2008, 15 of 23 overseas affiliates (compared to 10 for fiscal 2007) took action to reduce CO_2 emissions under environmental plans.

Under the 6th Environmental Plan, overseas affiliates will establish quantitative targets, as have domestic affiliates, for pursuing even greater emissions reductions.

* Data compiled for Mitsubishi Electric and domestic affiliates with environmental plans.





Topics

Reducing CO_2 Emissions from Product Logistics

Promoting and Expanding the Use of Rail Containers

All of the business units of Mitsubishi Electric are expanding their use of 5t, 10t, and 31ft containers, depending on the volume of their shipments.

- Expanding the Use of 31ft Containers (lower left in the photo)
  In fiscal 2008, we expanded our use of 31ft rail containers--which have the same load capacity as large trucks--for refrigerators, commercial air conditioning equipment, washing machines, electric water heaters, and other large products. In accordance with our 5th Environmental Plan, we increased our use of 31ft containers to 2.5 times the level for fiscal 2006.
- Expanding the Use of 5t Containers (lower right in the photo)
  In fiscal 2008, we expanded our use of 5t rail containers for room air conditioners, oven ranges, and other relatively small products, as permitted by destination and shipping weight, to 1.5 times the level for fiscal 2006, in accordance with the 5th Environmental Plan.

Increasing Loading Efficiency to Reduce Vehicle Usage

To make use of pockets of empty space in trucks and containers, we are increasing our per-vehicle loading efficiency by making use of simple shelving and revising the shapes of packaging.

Certified as an "Eco-Rail" Company

Our Living Environment & Digital Media Equipment Group, which handles products such as household appliances and heating and cooling equipment, was recognized as a business that uses environmentally compatible rail containers for more than a certain percentage of its shipping needs and certified as an "eco-rail" company in September 2005 by the Railway Freight Association of Japan. The same group won this certification again in fiscal 2008.

Going forward, we plan to continue expanding our use of rail containers with low environmental impact.

Waste Product Logistics

The Mitsubishi Electric Group is working to reduce CO_2 emissions from transport operations by limiting vehicle usage through contracting out waste collection and other initiatives.

In fiscal 2008, five of our works in the Kansai region of Japan embarked on an initiative aimed at having these facilities make use of each others' waste. Waste is transported among these works using empty space on trucks making scheduled trips for other purposes. No trips, therefore, are made solely to transport waste. In addition, we have created an approach for quantitatively determining CO_2 emissions. The approach is based on the method for calculating CO_2 emissions related to waste transport determined in fiscal 2007.

We are planning to propose specific ways to lower CO_2 emissions in fiscal 2009 based on the data gathered through this approach.

Procurement Logistics

We are also striving to reduce CO_2 emissions during transport operations related to product procurement.

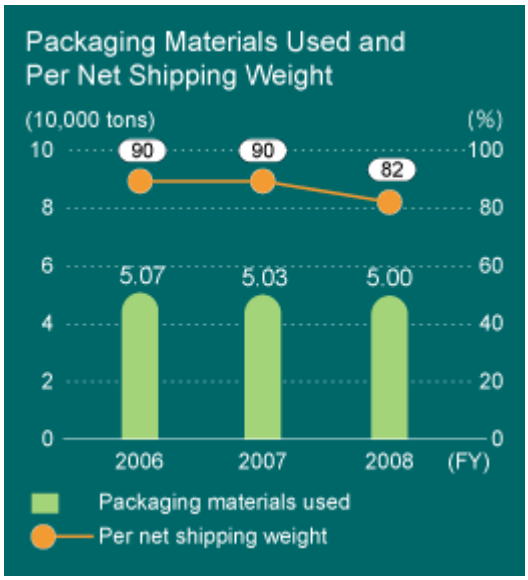
In fiscal 2008, we worked to further improve the accuracy of the ton-kilo approach for calculating CO_2 emissions we began using in fiscal 2007. We are continuing with these efforts in fiscal 2009.

Going forward, we will refer to production logistics initiatives in examining possible measures regarding logistics volumes and CO_2 emissions reductions.

Eco-Logistics

Saving on Distribution Materials

Packaging Materials



In order to make more effective use of resources, the Mitsubishi Electric Group3 has been working to reduce the volume of packaging materials it uses since its 1st Environmental Plan was established in 1995. Under the 5th Environmental Plan, we are currently engaged in activities to reduce packaging volume per unit of shipping weight for disposable packaging materials.

Making products smaller and lighter, while also maintaining the structural strength of packaging materials, is effective for reducing the amount of packaging material used. In taking that approach, relevant units work together beginning at the product planning stage to reduce our packaging material use. In addition, we hold events aimed at improving the use of packaging at individual business sites. These events promote improvements including approaches for more efficiently loading trucks and ocean transport containers. Through these activities, we have significantly reduced our use of packaging materials.

In fiscal 2008, our aim was to reduce packaging volume per unit of shipping weight by 13% from fiscal 2005, and we easily achieved that goal with a reduction of 18% (packaging volume of 50,000 tons).

In our 6th Environmental Plan, which begins in fiscal 2010, we have set even higher targets as we push ahead with efforts to reduce our use of packaging material.

Outside of Japan, we have been moving forward with efforts to gather data on our packaging material usage. In fiscal 2008, we used a total of 47,000 tons at 21 companies. We will continue to gather data like this and implement reduction activities.

Topics

Examining Ways to Reduce Packaging Material Use from the Product Design Stage

Packaging improvement meeting

The Mitsubishi Electric Group established a formal process for reducing its packaging costs and promoting low-environmental-impact packaging in April 2006. In this process, the Corporate Logistics Dept. plays the central role as packaging designers responsible for individual business sites come together at a targeted site and propose packaging improvements. In principle, these meetings take place once a month.

In more specific terms, packaging designers examine business sites and develop a detailed description of how packaging is used at each site. They then consider ways for improving packagng specifications and methods for individual products, and undertake activities aimed at reducing the use of packaging materials at each business site. These activities are aimed at not only reducing the volume of packaging material used but also increasing loading efficiency. They also serve to increase communication among packaging designers in a more general sense.

In fiscal 2008, packaging designers met a total of 14 times and came up with about 100 packaging improvement proposals. To continue improving our packaging technology, we will continue to bring packaging designers together, and work to make packaging improvement activities a routine part of our operations.

Exhibiting at Eco-Products 2007

Eco-Products 2007 'Eco Style Fair' was held over three days from Thursday, December 13 to Saturday, December 15, 2007 at Tokyo Big Sight. A record-high number of visitors (approximately 165,000) and exhibitors (upwards of 600) participated in this event, which was held for the ninth time.

The theme of the Mitsubishi Electric Group's exhibit was "Making Positive Contributions to the Earth and its People through Technology and Action," which is also the underlying philosophy of the group's Environmental Vision 2021. At Eco-Products 2007, we exhibited numerous products that help to reduce environmental impact, and introduced visitors to various environmental protection activities, including our "Outdoor Classroom," which provides participants with the chance to experience nature.

Under the concept of "Uni & Eco" for the home appliance section of our booth, we provided information on the environmentally conscious features of many of our home appliances, like our *Kirigamine* room air conditioner and Eco-Cute CO_2 heat pump type boilers. Meanwhile, in the industrial products section, we highlighted a broad range of devices and products, including semiconductor power modules and photovoltaic power generation systems that help to reduce CO_2 emissions during product use or in the generation of electric power. Our "experience and participation" booth, which featured various activities, including a quiz, was enjoyed by visitors of all ages.

The Mitsubishi Electric Group's open, inviting booth with easily viewed exhibits. The booth featured demonstrations and video presentations.

Kirigamine room air conditioner exhibit. Children intently listening to an energy conservation explanation, so they can respond correctly to a quiz.

Cutting-edge technology for recycling plastic recovered from discarded appliances drew strong interest.

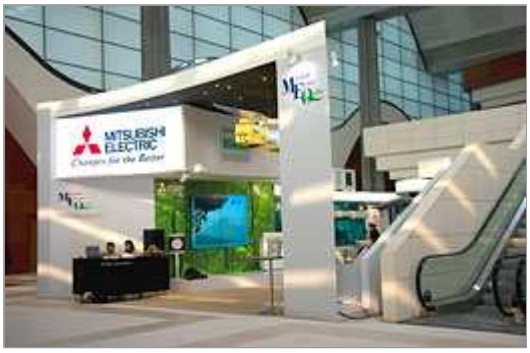
Energy-saving lighting fixtures booth. Here we introduced a lighting control system that promotes both comfort and energy conservation, and exhibited products like fixtures equipped with the latest LEDs.

At our experiential "Outdoor Classroom" exhibit, large numbers of children of all ages examined acorns and pinecones.

Exhibiting at the Eco-Products International Fair

Mitsubishi Electric exhibited at the 4th Eco-Products International Fair, which was held in Hanoi, Vietnam from Saturday, March 1 to Tuesday, March 4, 2008. Having first participated in the Thailand fair two years ago, and again in the Singapore fair last year, this was our third year of participation. Now Asia's largest environmental exhibition, visitors totaled 98,000, far exceeding the 34,000 who attended last year's fair in Singapore.

Mitsubishi Electric's booth was one of the largest at the fair and featured energy-saving air conditioners, photovoltaic power generation technology, factory automation, and a wide range of other products and proprietary technologies. Easy-to-understand exhibits incorporating demonstrations drew strong interest from visitors. The fair included the International Conference on Promotion of Eco-products for Competitiveness and Sustainable Consumption, at which Mitsubishi Electric Chairman, Tamotsu Nomakuchi, spoke.



MEQ, which appears at the front right, is the mark of Mitsubishi Electric Quality. MEQ symbolizes the pursuit of uncompromising quality in technology, products, design, materials, services, and environmental protection.

A video presentation presented information on various innovations aimed at reducing environmental impact and on Environmental Vision 2021 initiatives intended to help bring about a sustainable society.

Booth exhibits and demonstrations

Participation in Energy Conservation Forum Held in China

Energy conservation forum presentation

An energy conservation forum was held by China's National Development and Reform Commission in Beijing on July 22, 2007. The purpose of the forum was to promote energy conservation understanding among people working in Chinese companies and governmental institutions.

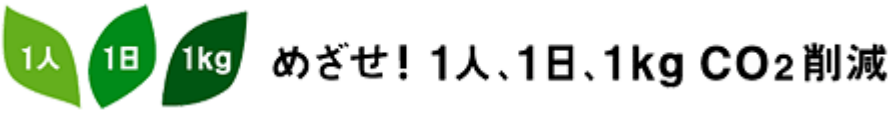
Mitsubishi Electric was the only Japanese company invited to participate and gave a presentation on the technologies and initiatives that would be pursued in promoting energy conservation in China. Specifically, the presentation introduced key devices, like inverters and power semiconductors, and initiatives like one aimed at making energy consumption transparent through the use of Eco-Monitors and measuring devices. It also addressed specific energy-saving solutions for factories, commercial buildings, public facilities, and households.

Support for Movement to Reduce CO_2 Emissions by 1 Kilogram per Person per Day

Uni & Eco character talking about consideration for the global environment and living in ecologically sound ways.

The Mitsubishi Electric Group is supporting Japan's Ministry of the Environment's movement to reduce CO_2 emissions 1 kilogram per person per day, which is being overseen by Team Minus 6%, a national campaign developed to help reach the nation's Kyoto Protocol objectives. To help achieve the stated CO_2 emissions reduction, Mitsubishi Electric calls on all employees to create their own "challenge" cards and using our website, brochures, exhibitions, and other channels to urge customers to participate, too. Through these activities, we are working to increase environmental awareness.

During the Eco-Products 2007 exhibition held in December 2007, we gave every customer who submitted a "challenge" card an original picture book or other present, and conducted a support campaign on our "Shufure" appliance website for homemakers.



Campaign to reduce CO_2 emissions by 1 kilogram per person per day

Environmental Report

Product Information

Energy & Electric Systems

Introduction to environmental information on transformers and elevators.

More

Industrial Automation Systems

Introduction to environmental information on energy efficiency support devices, laser processors, and automotive equipment.

More

Information & Communication Systems

Introduction to environmental information on environmental solutions, fiber-optic broadband connection equipment (circuit-terminating equipment for subscribers), and others.

More

Electronic Devices

Introduction to environmental information on home appliance- and industrial-use power modules.

More

Home Appliances

Introduction to environmental information on color televisions, air conditioners, heat pump type electric boilers, and others.

More

Product Information

Energy & Electric Systems

In the area of heavy electric machinery systems, Mitsubishi Electric is contributing broadly to society by lowering the environmental burden of energy systems and infrastructure systems, which are used in many places throughout society.

Super Energy Efficient Transformers

Elevator Systems

Escalator

Product Information

Energy & Electric Systems

Super Energy Efficient Transformers | Elevator Systems | Escalator

Transformers: Super Energy Efficient Transformers (EX Series)

Hyper Eco-Product

Factor 1.183: Performance Factor 1.00: Environmental Load Factor 1.183

Transformers use electromagnetic induction to step-down the high-voltage electricity (e.g. 6600v) supplied by electric utilities to voltage levels used in buildings and factories. Super Energy Efficient Transformers contribute to energy efficiency by lowering operating losses, and reduce CO_2 emissions. These transformers also employ a design that reduces operating noise.

Reasons for Hyper Eco-Product Certification

- Products certified to carry Mitsubishi Electric's environmental mark

Detailed equipment data

- RA-TS

M Materials: Effective use of resources

- To create no-burden and lower-burden products, we increased our resources by around 40%.

E Energy: Efficient use of energy

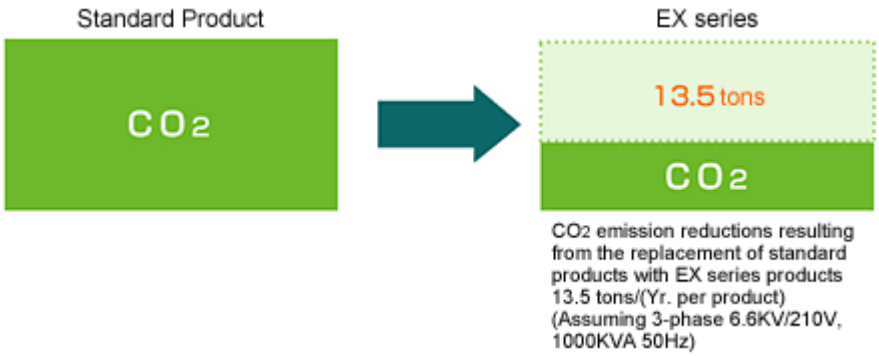
- By creating no-burden and lower-burden products, we lowered our electric power consumption by approximately 57%.

T Toxicity: Avoidance of substances that are potentially harmful to the environment

- Eliminate the use of hexavalent chrome.

Note

Super Energy Efficient Transformers are larger and more massive than current top-performing transformers (energy-efficient models), but offer greater energy efficiency.



CO_2 emission reductions resulting from the replacement of standard products with EX series products 13.5 tons/(Yr. per product) (Assuming 3-phase 6.6KV/210V, 1000KVA 50Hz)

To illustrate, if all of the transformer shipments for a year were replaced with Super Energy Efficient Transformers, CO_2 emissions would be reduced by 90,000 tons. Super Energy Efficient Transformers, therefore, not only reduce energy consumption; they also help to lower environmental burden.

Super Energy Efficient Transformers

Summary data

		Environmental load				Value of product
		M: Effective utilization of resources	E: Effective utilization of energy	T: Avoidance of discharge of environmentally hazardous substances		
Standard product	1990 product / RA-T	1	1	1	1.732	1
Evaluated product	2006 product / RA-TS	1.4	0.426	0	1.463	1.184
	Details of improvement	Approx. 40% increase in resources for reduction in no-load loss and load loss	Approx. 57.4% decrease in power consumption by reduction in no-load loss and load loss	Reduction by introduction of chromium-free paint		(Details) Approx. 57.4% decrease in power consumption by reduction in no-load loss and load loss
Environmental load factor: A		(1/Environmental load of new product)/ (1/Environmental load of standard product)			1.184	
Performance factor: B		(Added value of new product)/ (Added value of standard product)			1	
Factor X: AxB		(Added value of new product/Environmental load of new product)/(Added value of standard product/Environmental load of standard product)			1.184	

Environmental load factor

		Standard product (1990 product equivalent)		Evaluated product	
M	(1) Weight of product	2725	kg	3808	kg
	Iron	1790	kg	2256	kg
	Copper	2	kg	965	kg
	Aluminum	207	kg		kg
	Resin (Recycled material)	0	kg		kg
	Resin (Non-recycled material)	0	kg		kg
	Others	726	kg	587	kg
	Reduced weight after conversion into identical function [1]		kg		kg
	(2) Weight of recycled material	664	kg	905.4	kg
	(3) Weight of reused parts	0	kg	0	kg
	(4) Weight of 3R material [(2) + (3)]	664	kg	905.4	kg
	(5) Consumption of virgin resources [(1) – (4)]	2061	kg	2902.6	kg
	(6) Recyclable weight (3R possible)	2665	kg	3733	kg
	(7) Nonrecyclable weight [(1) – (6)]	60	kg	75	kg
E	Power consumption during annual operation (E1)	4.853	kWh	2	kWh
	Power consumption in annual standby state (E2)	0	kWh	0.0	kWh
	Total (Annual power consumption)		kWh		kWh
T	Lead usage in solder (T1)	0.000	g	0.000	g
	Cadmium usage (T2)	0.000	g	0.000	g
	Mercury usage (T3)	0.000	g	0.000	g
	Hexavalent chromium usage (T4)	74.000	g	0.000	g
	PBB usage (T5)	0.000	g	0.000	g
	PBDE usage (T6)	0.000	g	0.000	g
	HCFC refrigerant [2]				
	Total				

Factors with 3R viewpoint: Addition method

		Quantitative data				Standard product	Evaluated product
		Standard product	(Unit)	Evaluated product	(Unit)		
M	2 x Weight -3R-3R possible [(5) + (7)]	-	kg	-	kg	1	1.4
E	Reduction in energy consumption	-	kWh	-	kWh	1	0.43
T	Reduction in hazardous substances	-	g	-	g	1	0
Environmental load (MET resultant value)						1.7321	1.465
Environmental load factor						1.183	

1 The weight of the function absent in the standard product, which cannot be expressed as an influence on environmental load or as the added value of the product. It is the weight of the part not subject to evaluation. (Oxygen adding function and ventilation function)

2 Evaluation after HCFC refrigerant is added to the environmentally hazardous substances.

Performance factor

Example of improvement of performance/life	Performance/life index
Performance factor	1

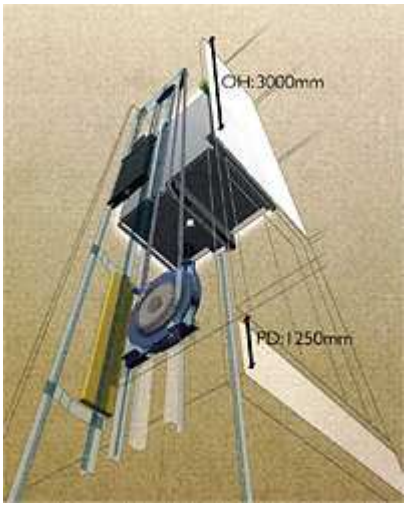
Product Information

Energy & Electric Systems

Super Energy Efficient Transformers | Elevator Systems | Escalator

Elevator Systems: Number of persons: 9, Speed: 60m/min., 6 stops

Factor 1.09: Performance Factor 1.00: Environmental Load Factor 1.094
(applies only to lift equipment)
* Factors for standard products are fiscal 1996 products.



Responding to diversifying needs, we enhanced the performance and functionality of existing elevator equipment. In addition, to provide greater construction and design freedom, we reduced the amount of space necessary for elevator shafts.

Detailed equipment data

- P9-CO-60, 6stop

M Materials: Effective use of resources

- Reduced the weight of car equipment. (Car floor: Approx. 20kg; Car balustrade: Approx. 5kg; Counterweight: Approx. 25kg)
- Employed corn-based plastic for part of the car control panel.

E Energy: Efficient use of energy

- Switched to inverter technology for lighting, and reduced electricity consumption by up to 35%.
- Use regenerative electric power to reduce electricity consumption by about 20%. (When equipped with the optional "Ele-save" package)

T Toxicity: Avoidance of substances that are potentially harmful to the environment

- RoHS-compliant parts and materials are used. (Switched to lead-free options for six types of boards, and plating free of hexavalent chrome.)
- Reduced usage of toluene, xylene, and other atmospheric and the soil contaminants.
- In compliance with sick-house laws and regulations, reduced emissions of controlled substances to levels at or below standards for entire elevator systems. Reduced formaldehyde concentrations to levels below the standard of 100μg/m³.

Elevator Systems

Summary data

		Environmental load				Value of product
		M: Effective utilization of resources	E: Effective utilization of energy	T: Avoidance of discharge of environmentally hazardous substances		
Standard product	1996 product	1	1	1	1.732	1
Evaluated product	2005 product P9-CO-60, 6stop	0.829	0.906	1	1.584	1
	Details of improvement	Reduction in weight of equipment around cage Reduction in environmental load during disposal due to use of plant-derived plastic	Promotion of energy saving	Adoption of RoHS compliant parts and materials Reduction in toluene, xylene, and other hazardous substances that contaminate the air and soil Prevention of sick-house syndrome		(Details) (1) Application of variable-speed elevator system (2) Increased safety by universal door system
Environmental load factor: A		(1/Environmental load of new product)/ (1/Environmental load of standard product)			1.094	
Performance factor: B		(Added value of new product)/ (Added value of standard product)			1	
Factor X: AxB		(Added value of new product/Environmental load of new product)/ (Added value of standard product/Environmental load of standard product)			1.094	

Environmental load factor

		Standard product (1990 product equivalent)		Evaluated product	
M	(1) Weight of product	280	kg	232	kg
	Iron	280	kg	232	kg
	Copper		kg		kg
	Aluminum		kg		kg
	Resin (Recycled material)		kg		kg
	Resin (Non-recycled material)		kg		kg
	Others		kg		kg
	Reduced weight after conversion into identical function [1]		kg		kg
	(2) Weight of recycled material	98	kg	81.2	kg
	(3) Weight of reused parts		kg		kg
	(4) Weight of 3R material [(2) + (3)]	98	kg	81.2	kg
	(5) Consumption of virgin resources [(1) – (4)]	182	kg	150.8	kg
	(6) Recyclable weight (3R possible)		kg		kg
	(7) Nonrecyclable weight [(1) – (6)]	280	kg	232	kg
E	Power consumption during annual operation (E1)	2869	kWh	2600	kWh
	Power consumption in annual standby state (E2)		kWh		kWh
	Total (Annual power consumption)		kWh		kWh
T	Lead usage in solder (T1)	0	g	0	g
	Cadmium usage (T2)	0	g	0	g
	Mercury usage (T3)	0	g	0	g
	Hexavalent chromium usage (T4)		g		g
	PBB usage (T5)	0	g	0	g
	PBDE usage (T6)	0	g	0	g
	HCFC refrigerant [2]				
	Total				

Factors with 3R viewpoint: Addition method

		Quantitative data				Standard product	Evaluated product
		Standard product	(Unit)	Evaluated product	(Unit)		
M	2 x Weight -3R-3R possible [(5) + (7)]	—	kg	—	kg	1	0.829
E	Reduction in energy consumption	—	kWh	—	kWh	1	0.906
T	Reduction in hazardous substances	—	g	—	g	1	1
Environmental load (MET resultant value)						1.732	1.584
Environmental load factor						1.094	

1 The weight of the function absent in the standard product, which cannot be expressed as an influence on environmental load or as the added value of the product. It is the weight of the part not subject to evaluation. (Oxygen adding function and ventilation function)

2 Evaluation after HCFC refrigerant is added to the environmentally hazardous substances.

Product Information

Energy & Electric Systems

Super Energy Efficient Transformers | Elevator Systems | Escalator

Elevator Systems: Escalator ZJ-S

ZJ-S constitutes a new escalator design providing even greater quality and reliability. Particular attention was paid to safety and convenience in creating this design.

M Materials: Effective use of resources

- The ZJ-S design is characterized by its relatively small number of parts and light weight. Employing ZJ escalators for floor heights of 6.5m - 7.0m results in the use of less material than required by other escalator equipment.
- To minimize the amount of material used in trusses, we scaled down the sizes of truss chords and took other steps that resulted in overall reductions.
- We also incorporated as standard parts recyclable thermoplastic polyurethane handrails and rollers.

E Energy: Efficient use of energy

- We employ an automatic operation function, which makes escalators more energy efficient. We have created a line of VVVF inverter-based post and postless products that stop or slow down when not in use, and are working to expand the adoption of automatic operation functions in combination with variable speed functions.

T Toxicity: Avoidance of substances that are potentially harmful to the environment

- RoHS-compliant parts and materials are used. (Switched to lead-free boards, and plating free of hexavalent chrome.)
- Reduced usage of toluene, xylene, and other atmospheric and the soil contaminants.

Product Information

Industrial Automation Systems

In industrial Mechatronics, we help customers reduce their environmental burden by increasing the energy- and resource-efficiency of various devices that are indispensable for industry.

Energy Measuring Unit

Laser Processing Machine

EPS Motor

Product Information

Industrial Automation Systems

Energy Measuring Unit | Laser Processing Machine | EPS Motor

Energy Measuring Unit (EcoMonitorPro)

Hyper Eco-Product

Factor 3.96: Performance Factor 2.50: Environmental Load Factor 1.582

These gauges make it possible to measure electricity usage for electric power systems covering multiple factories and buildings at the level of individual facilities or lines, and at 1-second or 1-minute intervals.

Reasons for Hyper Eco-Product Certification

- Factor rating of 2 or more

Detailed equipment data

- EMU2-HM1-B

M Materials: Effective use of resources

- Reduced virgin resource usage in products by 45%.
- Reduced the volume of unrecyclable materials by 45%.

E Energy: Efficient use of energy

- Reduced electricity consumption by 51% during usage and 82% during standby.

T Toxicity: Avoidance of substances that are potentially harmful to the environment

- Reduced the amount of lead used in solder by 12.5%.

Energy Measuring Unit

Summary data

		Environmental load				Value of product
		M: Effective utilization of resources	E: Effective utilization of energy	T: Avoidance of discharge of environmentally hazardous substances		
Standard product	1998 product EMU-B3P5	1	1	1	1.732	1
Evaluated product	2003 product EMU2-HM1-B	0.55	0.37	0.88	1.095	2.5
	Details of improvement	45% reduction in consumption of virgin resources for product 45% reduction in nonrecyclable weight	Reduction of power consumption during use by 51% 82% reduction in the standby state	12.5% reduction in lead in solder		(Details) Number of factors of energy measurement 4 → 10: 2.5 times greater
Environmental load factor: A		(1/Environmental load of new product)/ (1/Environmental load of standard product)			1.582	
Performance factor: B		(Added value of new product)/ (Added value of standard product)			2.5	
Factor X: AxB		(Added value of new product/Environmental load of new product)/(Added value of standard product/Environmental load of standard product)			3.96	

Environmental load factor

		Standard product (1990 product equivalent)		Evaluated product	
M	(1) Weight of product	0.282	kg	0.155	kg
	Iron		kg		kg
	Copper		kg		kg
	Aluminum		kg		kg
	Resin (Recycled material)		kg		kg
	Resin (Non-recycled material)		kg		kg
	Others	0.282	kg	0.155	kg
	Reduced weight after conversion into identical function [1]		kg		kg
	(2) Weight of recycled material	0	kg	0	kg
	(3) Weight of reused parts		kg		kg
	(4) Weight of 3R material [(2) + (3)]	0	kg	0	kg
	(5) Consumption of virgin resources [(1) – (4)]	0.282	kg	0.155	kg
	(6) Recyclable weight (3R possible)	0.027	kg	0.0163	kg
	(7) Nonrecyclable weight [(1) – (6)]	0.255	kg	0.1387	kg
E	Power consumption during annual operation (E1)	0.0043	kWh	0.0021	kWh
	Power consumption in annual standby state (E2)	0.0035	kWh	0.0006	kWh
	Total (Annual power consumption)		kWh		kWh
T	Lead usage in solder (T1)	0.8	g	0.7	g
	Cadmium usage (T2)	0	g	0	g
	Mercury usage (T3)	0	g	0	g
	Hexavalent chromium usage (T4)	0	g	0	g
	PBB usage (T5)	0	g	0	g
	PBDE usage (T6)	0	g	0	g
	HCFC refrigerant [2]				
	Total				

Factors with 3R viewpoint: Addition method

		Quantitative data				Standard product	Evaluated product
		Standard product	(Unit)	Evaluated product	(Unit)		
M	2 x Weight -3R-3R possible [(5) + (7)]	-	kg	-	kg	1	0.546927374
E	Reduction in energy consumption	-	kWh	-	kWh	1	0.365988426
T	Reduction in hazardous substances	-	g	-	g	1	0.875
	Environmental load (MET resultant value)					1.7321	1.094852538
	Environmental load factor					1.5820	

1 The weight of the function absent in the standard product, which cannot be expressed as an influence on environmental load or as the added value of the product. It is the weight of the part not subject to evaluation. (Oxygen adding function and ventilation function)

2 Evaluation after HCFC refrigerant is added to the environmentally hazardous substances.

Performance factor

Example of improvement of performance/life	Performance/life index
Number of factors of energy measurement 4 → 10: 2.5 times greater	2.5

Product Information

Industrial Automation Systems

Energy Measuring Unit | Laser Processing Machine | EPS Motor

Laser Processing Machine LVP-40CF

Hyper Eco-Product

Factor 3.108: Performance Factor 3.50: Environmental Load Factor 0.888

Laser processing machines fall into the "Special Processing Machinery" JIS classification. Laser processing machines heat, weld, and ablate by using the characteristics and high energy of a laser beam. The LVP-40CF creates a φ10 hole in the SPCCt1.0 sample part 3.5 times faster than existing machines.

Reasons for Hyper Eco-Product Certification

- An environmental load factor of 2 or higher

Detailed equipment data

- LVP-40CF

M Materials: Effective use of resources

- Increase in resource usage through higher rigidity achieved with greater processing speed and precision.

E Energy: Efficient use of energy

- Increase in drive energy usage through high-speed, high-precision processing.

T Toxicity: Avoidance of substances that are potentially harmful to the environment

- Lead-usage reduction through the use of fewer parts attached with solder.

Note

Our laser oscillation and processing technology has been recognized for its excellence and has received the following awards.

- 2001 Nikkan Kogyo Shimbun's 43rd Great New Product Award
- 2002 Japan Machinery Foundation's Chairman's Prized at the Outstanding Energy Efficient Device Awards

Laser Processing Machine

Summary data

		Environmental load				Value of product
		M: Effective utilization of resources	E: Effective utilization of energy	T: Avoidance of discharge of environmentally hazardous substances		
Standard product	1990 product equivalent	1	1	1	1.732	1
Evaluated product	2006 product LVP-40CF	1.26	1.33	0.67	1.951	3.108
	Details of improvement	Increase in resource usage to ensure higher rigidity for high speed and high precision	Increase in energy usage in driving unit for high speed and high precision	Reduction in lead usage by reduction of soldered parts		(Details) The sample part SPCCt1.0 Φ10 drilling speed is 3.5 times faster.
Environmental load factor: A		(1/Environmental load of new product)/ (1/Environmental load of standard product)			0.888	
Performance factor: B		(Added value of new product)/ (Added value of standard product)			3.5	
Factor X: AxB		(Added value of new product/Environmental load of new product)/(Added value of standard product/Environmental load of standard product)			3.108	

Environmental load factor

		Standard product (1990 product equivalent)		Evaluated product	
M	(1) Weight of product	12000	kg	15100	kg
	Iron	11770	kg	14720	kg
	Copper	100	kg	150	kg
	Aluminum	80	kg	150	kg
	Resin (Recycled material)	0	kg	0	kg
	Resin (Non-recycled material)	50	kg	80	kg
	Others	0	kg	0	kg
	Reduced weight after conversion into identical function [1]		kg		kg
	(2) Weight of recycled material	4145.9	kg	5197	kg
	(3) Weight of reused parts	0	kg	0	kg
	(4) Weight of 3R material [(2) + (3)]	4145.9	kg	5197	kg
	(5) Consumption of virgin resources [(1) – (4)]	7854.1	kg	9903	kg
	(6) Recyclable weight (3R possible)	11400	kg	14345	kg
	(7) Nonrecyclable weight [(1) – (6)]	600	kg	755	kg
E	Power consumption during annual operation (E1)	120000	kWh	190650	kWh
	Power consumption in annual standby state (E2)	5660	kWh	5660	kWh
	Total (Annual power consumption)		kWh		kWh
T	Lead usage in solder (T1)	30,000	g	20,000	g
	Cadmium usage (T2)	0.000	g	0.000	g
	Mercury usage (T3)	0.000	g	0.000	g
	Hexavalent chromium usage (T4)	0.000	g	0.000	g
	PBB usage (T5)	0.000	g	0.000	g
	PBDE usage (T6)	0.000	g	0.000	g
	HCFC refrigerant [2]				
	Total				

Factors with 3R viewpoint: Addition method

		Quantitative data				Standard product	Evaluated product
		Standard product	(Unit)	Evaluated product	(Unit)		
M	2 x Weight -3R-3R possible [(5) + (7)]	-	kg	-	kg	1	1.26
E	Reduction in energy consumption	-	kWh	-	kWh	1	1.33
T	Reduction in hazardous substances	-	g	-	g	1	0.67
	Environmental load (MET resultant value)					1.7321	1.948
	Environmental load factor					0.888	

1 The weight of the function absent in the standard product, which cannot be expressed as an influence on environmental load or as the added value of the product. It is the weight of the part not subject to evaluation. (Oxygen adding function and ventilation function)

2 Evaluation after HCFC refrigerant is added to the environmentally hazardous substances.

Performance factor

Example of improvement of performance/life	Performance/life index
Performance factor	3.5

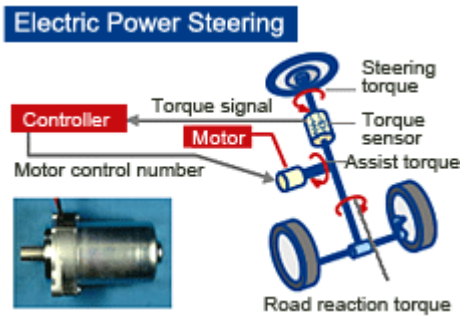
Product Information

Industrial Automation Systems

Energy Measuring Unit | Laser Processing Machine | EPS Motor

EPS Motor (30A Class)

Factor 1.451: Performance Factor 1.085: Environmental Load Factor 1.337



The EPS Motor is used in power steering systems, which provide assistance in turning automobile steering wheels. Because the electric power steering system (EPS) engages the motor only when the steering wheel is being turned, it consumes less energy than the traditional hydraulic power steering system (HPS), which is driven by a hydraulic pump that is constantly in operation when an engine is on. This can result in a fuel efficiency improvement of about 3%-5%. Replacing HPSs with EPSs, therefore, would increase fuel economy and significantly reduce CO_2 emissions.

M Materials: Effective use of resources

- Use of closed-loop recycled plastic consisting of waste recovered from the formation process to make a holder for protecting and securing a magnet on the stator.
- Reduction of copper coil edge line parts volume through innovations in edge line processing for windings.
- Weight reduction through simplification of the structure of the connection parts for attachment of the mechanism side to the motor.

E Energy: Efficient use of energy

- Increased energy efficiency through optimal electromagnetic design of the rotor winding coil.

T Toxicity: Avoidance of substances that are potentially harmful to the environment

- Eliminated environmental burden substances covered by the EU-ELV Directive's phased usage restrictions, and reduced usage of other heavy metals.

Note

Received the fiscal year 2007 Commendation for Science and Technology by the Minister of Education Culture, Sports, Science and Technology.

Received the fiscal year 2007 Commendation for Science and Technology by the Minister of Education Culture, Sports, Science and Technology for our EPS (motor and controller). Mitsubishi Electric was praised for benefiting the global environment by making it possible to switch from HPSs to EPSs, and increase fuel economy by 3%-5%.

Product Information

Information & Communication Systems

In information and communication systems, Mitsubishi Electric provides solutions based on advanced IT technology, and supports customers' environmental activities by helping them to gather, analyze, and apply environmental burden information.

Mitsubishi Logistics Information System: Dr. Logis

Integrated Environmental Information System

GE-PON ONU

Product Information

Information & Communication Systems

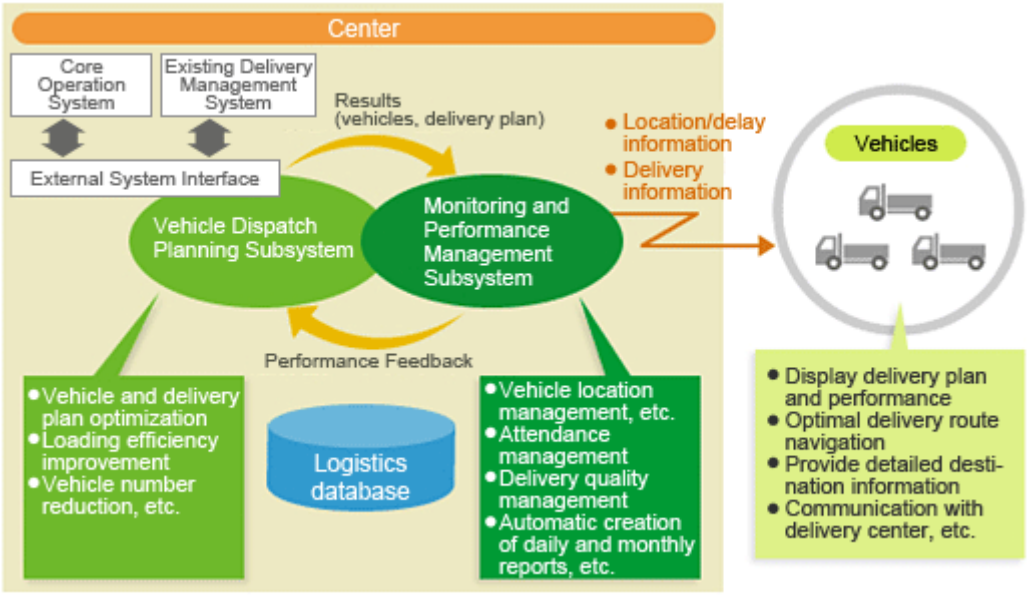
Mitsubishi Logistics Information System: Dr. Logis

Integrated Environmental Information System | GE-PON ONU

Information & Communication: Mitsubishi Logistics Information System: Dr. Logis

Dr. Logis is a system that supports optimal, realistic vehicle dispatch planning for distribution. It reduces the number of vehicles, distance traveled, and time required when delivering the same quantities under the same conditions.

Trucks burning diesel, gasoline, or other fossil fuels are used in delivery work. Reducing distance and time traveled by minimizing the number of vehicles used and optimizing distribution routes for cases in which the same quantities are being delivered reduces fuel usage and, ultimately, NOx and CO_2 emissions.



Product Information

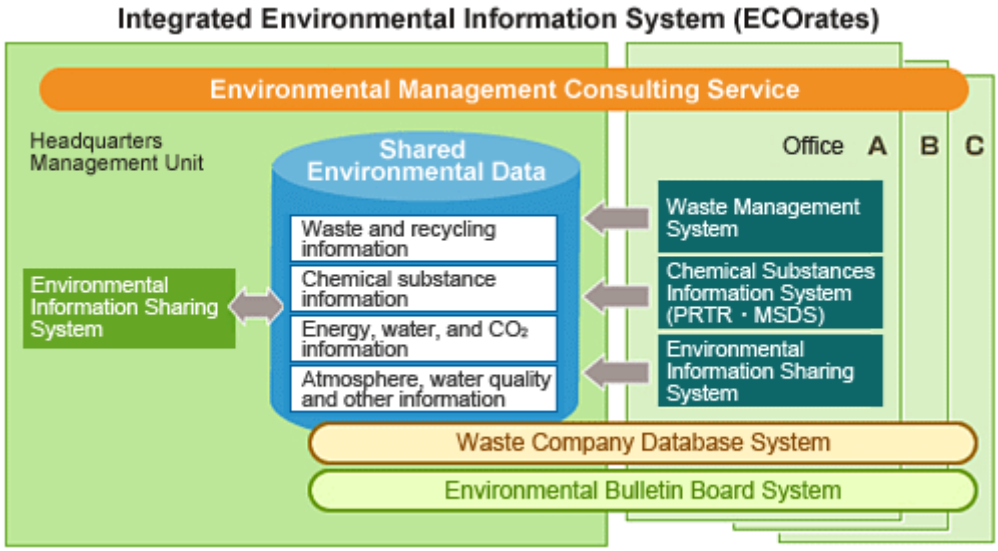
Information & Communication Systems

Mitsubishi Logistics Information System: Dr. Logis

Integrated Environmental Information System | GE-PON ONU

Information & Communication: Integrated Environmental Information System (ECOrates)

ECOrates is an information system that, when applied in information sharing and communication, promotes legal compliance, risk avoidance, and environmentally conscious management through the introduction of IT to environmental management. ECOrates is comprised of three subsystems: the Waste Management System, Environmental Information Sharing System and Chemical Substances Information System.



M Materials: Effective use of resources

- Adding to our use of industrial waste management systems, we have taken steps that make it possible to manage all wastes generated, including general waste and materials with value. These measures allow us to determine volumes and relative percentages of recyclable and other valuable materials, and promote 3R (recycle, reuse, reduce) activities.

E Energy: Efficient use of energy

- The Chemical Substance Management System makes it possible to manage controlled substances by simplifying the work of determining amounts of PRTR Law and other controlled substances purchased and used, and assembling data on atmospheric and waterway emissions, and transfers. Furthermore, it helps to reduce chemical substance usage by making it possible to reference purchase data.

T Toxicity: Avoidance of substances that are potentially harmful to the environment

- The Environmental Information Sharing System makes it possible to gather environmental performance data on energy, paper, water, and other resource usage for group companies, including affiliates and overseas group members. Efficiency enhancement and usage reduction are aided by CO_2, fuel, and basic unit data conversions. This system also simplifies preparation of data for inclusion in environmental and CSR reports.

Product Information

Information & Communication Systems

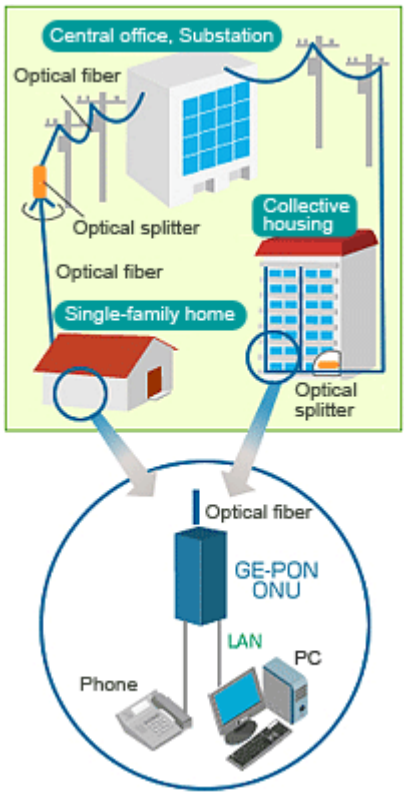
Mitsubishi Logistics Information System: Dr. Logis
Integrated Environmental Information System | GE-PON ONU

GE-PON ONU

Hyper Eco-Product

Factor 24.108: Performance Factor 6.667: Environmental Load Factor 3.616

The GE-PON system uses optical circuits to realize high-speed broadband communications. The GE-PON-ONU is installed in households and attached to an optical fiber cable as a terminal device.



Reasons for Hyper Eco-Product Certification

- Significant electricity consumption reduction achieved by reducing the number of parts compared to previous equipment
- Factor rating of 2 or more
- Lead-free

Detailed equipment data

- GE-PON ONU

M Materials: Effective use of resources

- Significant reduction in use of virgin material through product size reduction and elimination of metal as a material.
  Iron components: 0.046kg→0kg
  Aluminum: 0.306kg→0kg
  Plastic: 0.5kg→0.133kg

E Energy: Efficient use of energy

- Reduced electricity consumption 65% compared to previous product by eliminating use of a high-electricity-consumption part (FPGA).

T Toxicity: Avoidance of substances that are potentially harmful to the environment

- Complies with RoHS Directive.
- Complies with lead-free requirements.

GE-PON ONU

Summary data

		Environmental load				Value of product
		M: Effective utilization of resources	E: Effective utilization of energy	T: Avoidance of discharge of environmentally hazardous substances		
Standard product	1998 product ATM-DSU	1	1	1	1.732	1
Evaluated product	2007 product GEPON-ONU	0.31	0.36	0	0.479	1.1
	Details of improvement	Possibility of recycling plastic	Reduction in power consumption by reduction in the number of parts	Disuse of substances subject to European RoHS directives for lead-free product		(Details) The performance factor was evaluated by the transmission rate. ATM-DSU: 150Mbps GEPON: 1Gbps
Environmental load factor: A		(1/Environmental load of new product)/ (1/Environmental load of standard product)			3.616	
Performance factor: B		(Added value of new product)/ (Added value of standard product)			6.667	
Factor X: AxB		(Added value of new product/Environmental load of new product)/(Added value of standard product/Environmental load of standard product)			24.108	

Environmental load factor

		Standard product (1990 product equivalent)		Evaluated product	
M	(1) Weight of product	0.85	kg	0.219	kg
	Iron	0.046	kg	0	kg
	Copper	0	kg	0	kg
	Aluminum	0.306	kg	0	kg
	Resin (Recycled material)	0	kg	0	kg
	Resin (Non-recycled material)	0.5	kg	0.133	kg
	Others	0	kg	0.086	kg
	Reduced weight after conversion into identical function [1]		kg	-0.7	kg
	(2) Weight of recycled material	0.07	kg	0	kg
	(3) Weight of reused parts	0	kg	0	kg
	(4) Weight of 3R material [(2) + (3)]	0.07	kg	0	kg
	(5) Consumption of virgin resources [(1) – (4)]	0.78	kg	0.219	kg
	(6) Recyclable weight (3R possible)	0.6	kg	0.1	kg
	(7) Nonrecyclable weight [(1) – (6)]	0.25	kg	0.119	kg
E	Power consumption during annual operation (E1)	7.08	kWh	2.65	kWh
	Power consumption in annual standby state (E2)	77.89	kWh	27.382	kWh
	Total (Annual power consumption)	84.97	kWh	30.032	kWh
T	Lead usage in solder (T1)	2.7	g	0.0043	g
	Cadmium usage (T2)	0	g	0	g
	Mercury usage (T3)	0	g	0	g
	Hexavalent chromium usage (T4)	0	g	0	g
	PBB usage (T5)	0	g	0	g
	PBDE usage (T6)	0	g	0	g
	HCFC refrigerant [2]	0		0	
	Total				

Factors with 3R viewpoint: Addition method

		Quantitative data				Standard product	Evaluated product
		Standard product	(Unit)	Evaluated product	(Unit)		
M	2 x Weight -3R-3R possible [(5) + (7)]	-	kg	-	kg	1	0.312355
E	Reduction in energy consumption	-	kWh	-	kWh	1	0.363064
T	Reduction in hazardous substances	-	g	-	g	1	0.001593
Environmental load (MET resultant value)						1.732051	0.47894
Environmental load factor						3.6164	

1 The weight of the function absent in the standard product, which cannot be expressed as an influence on environmental load or as the added value of the product. It is the weight of the part not subject to evaluation. (Oxygen adding function and ventilation function)

2 Evaluation after HCFC refrigerant is added to the environmentally hazardous substances.

Performance factor

Example of improvement of performance/life	Performance/life index
Improvement of transmission velocity (150Mbps → 1Gbps)	6.667

Product Information

Electronic Devices

In the area of electronic devices, we are working to make critical electronic devices more energy efficient and reduce the use of lead and other controlled substances.

DIP-IPM Module

IGBT Module

Product Information

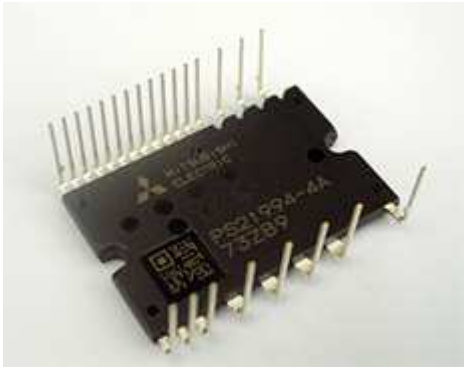
Electronic Devices

DIP-IPM Module | IGBT Module

Power Module DIP-IPM PS21994

Factor 2.466: Performance Factor 1.50: Environmental Load Factor 1.644

Power module for driving inverters for home appliances and industrial motors.



Detailed equipment data

- PS21994

M Materials: Effective use of resources

- Use of a high heat dissipation insulation structure achieved a reduced junction temperature rise in power chips. This allowed for a smaller package and led to a significant reduction (about 40%) of the mounting area on the PCB compared to our current products.

E Energy: Efficient use of energy

- By integrating a full-gate CSTBT™*, which is one of Mitsubishi Electric's advanced IGBTs, electric power consumption in the system was reduced.
  *CSTBT: Carrier Stored Trench Gate Bipolar Transistor

T Toxicity: Avoidance of substances that are potentially harmful to the environment

- Introduction of lead-free process for soldering power chips and plating outer terminals realized all lead-free products (RoHS compliant).

Note

Awarded the 52nd Okochi Prize
(Production award)

At the 52nd (2006) Okochi Prize ceremony held on March 14, 2006, the Dual Inline Package-type Intelligent Power Module (DIP-IPM) developed by Mitsubishi Electric's Power Device Works was awarded the Okochi Memorial Foundation Manufacturing Prize for the development and production of a transfer mold intelligent power module. In making its decision, the selection committee praised the development of a highly reliable, low-cost part using a transfer mold to unify multiple power chips, comprising inverter power circuits, with controller ICs. The DIP-IPM is being adopted increasingly for use in not only major appliances using inverters but also for induction heating devices and in the industrial devices market.

DIP-IPM Module

Summary data

		Environmental load				Value of product
		M: Effective utilization of resources	E: Effective utilization of energy	T: Avoidance of discharge of environmentally hazardous substances		
Standard product	2002 PS21564	1	1	1	1.732	1
Evaluated product	2007 PS21994	0.47	0.94	0	1.054	1.5
	Details of improvement	Miniaturization of package	Introduction of full-gate CSTBTTM™	Completely lead-free product (both external plating and interior)		(Details) Reduction in heat resistance by adoption of high heat dissipation structure
Environmental load factor: A		(1/Environmental load of new product)/ (1/Environmental load of standard product)			1.644	
Performance factor: B		(Added value of new product)/ (Added value of standard product)			1.500	
Factor X: AxB		(Added value of new product/Environmental load of new product)/(Added value of standard product/Environmental load of standard product)			2.466	

Environmental load factor

		Standard product (1990 product equivalent)		Evaluated product	
M	(1) Weight of product	0.02	kg	0.0094	kg
	Iron		kg		kg
	Copper		kg		kg
	Aluminum		kg		kg
	Resin (Recycled material)		kg		kg
	Resin (Non-recycled material)		kg		kg
	Others		kg		kg
	Reduced weight after conversion into identical function [1]		kg		kg
	(2) Weight of recycled material	0	kg	0	kg
	(3) Weight of reused parts		kg		kg
	(4) Weight of 3R material [(2) + (3)]	0	kg	0	kg
	(5) Consumption of virgin resources [(1) – (4)]	0.02	kg	0.0094	kg
	(6) Recyclable weight (3R possible)		kg		kg
	(7) Nonrecyclable weight [(1) – (6)]	0.02	kg	0.0094	kg
E	Power consumption during annual operation (E1)	98	kWh	92	kWh
	Power consumption in annual standby state (E2)	0	kWh	0	kWh
	Total (Annual power consumption)	98	kWh	92	kWh
T	Lead usage in solder (T1)	0.21	g	0	g
	Cadmium usage (T2)	0	g	0	g
	Mercury usage (T3)	0	g	0	g
	Hexavalent chromium usage (T4)	0	g	0	g
	PBB usage (T5)	0	g	0	g
	PBDE usage (T6)	0	g	0	g
	HCFC refrigerant [2]	0	g	0	g
	Total	0.21	g	0	g

Factors with 3R viewpoint: Addition method

		Quantitative data				Standard product	Evaluated product
		Standard product	(Unit)	Evaluated product	(Unit)		
M	2 x Weight -3R-3R possible [(5) + (7)]	0.04	kg	0.0188	kg	1	0.47
E	Reduction in energy consumption	98	kWh	92	kWh	1	0.942981335
T	Reduction in hazardous substances	0.21	g	0	g	1	0
Environmental load (MET resultant value)						1.7321	1.0536
Environmental load factor						1.6439	

1 The weight of the function absent in the standard product, which cannot be expressed as an influence on environmental load or as the added value of the product. It is the weight of the part not subject to evaluation. (Oxygen adding function and ventilation function)

2 Evaluation after HCFC refrigerant is added to the environmentally hazardous substances.

Performance factor

Example of improvement of performance/life	Performance/life index
Reduction in heat resistance by adoption of new high heat dissipation structure (Standard: Max. 4.5˚ C/W → 3.0˚ C/W)	1.5

Product Information

Electronic Devices

DIP-IPM Module | IGBT Module

Power Module IGBT Module

Hyper Eco-Product

Factor 2.146: Performance Factor 1.228: Environmental Load Factor 1.747

The NX series of modules allows the configuration of various circuits and packages through the mixing and matching of interchangeable package parts and various semiconductor chips. Interchangeable mother cases, pin terminals, and screw block terminals mean it is possible to create various power module configurations to match a wide range of capacities when developing new packages. This eliminates the need to create molds for each package configuration.

Reasons for Hyper Eco-Product Certification

- Industry-leading electric power conversion efficiency (97.5%)
- Factor rating of 2 or more

Detailed equipment data

- CM300DX-24A

M Materials: Effective use of resources

- Reduced package size contributes to a more compact final product (inverter).
- Cu base plate material thinned from 4mm, to 3.5mm.

E Energy: Efficient use of energy

- Power loss reduced by approximately 30% compared to H series (3rd generation) through use of 5th generation IGBT (CSTBT).

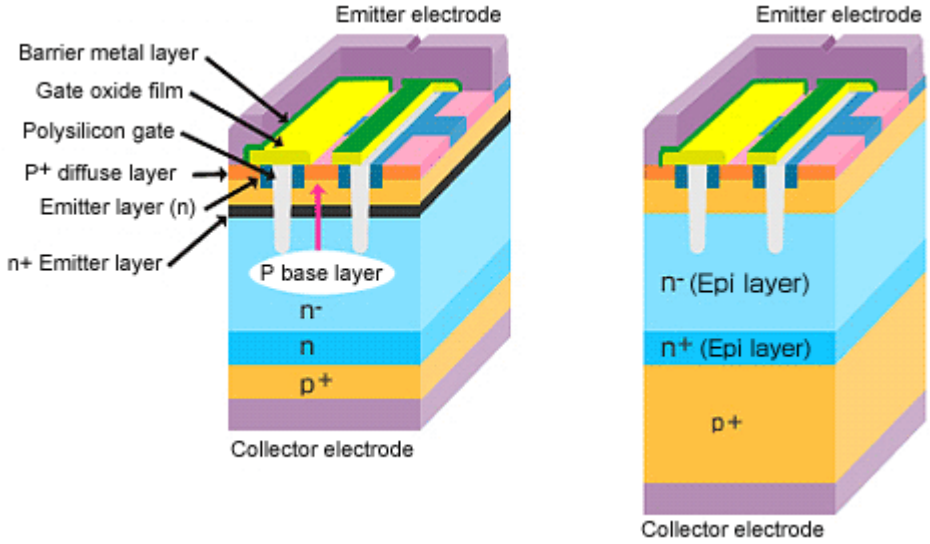
T Toxicity: Avoidance of substances that are potentially harmful to the environment

- Eliminated all use of substances subject to the EU's RoHS Directive or JIS's J-Moss.

Note

A major improvement in IGBT voltage characteristics through use of CSTBT

The NX series is equipped with a CSTBT that includes an N layer with relatively high impurity density between the P base layer and N layer of the traditional IGBT. The result is a significant improvement in on-state voltage characteristics, compared to a traditional trench IGBT.



IGBT Module

Summary data

		Environmental load				Value of product
		M: Effective utilization of resources	E: Effective utilization of energy	T: Avoidance of discharge of environmentally hazardous substances		
Standard product	2000 product CM300DY-24H	1	1	1	1.732	1
Evaluated product	2008 product CM300DX-24A	0.66	0.740	0	0.991	1.228
	Details of improvement	Miniaturization of package Resource saving	Reduction in power loss during use of inverter Promotion of energy-saving	Disuse of lead and hexavalent chromium Disuse of substances subject to European RoHS directives		(Details) Improvement of characteristics Consideration of long life
Environmental load factor: A		(1/Environmental load of new product)/ (1/Environmental load of standard product)			1.747	
Performance factor: B		(Added value of new product)/ (Added value of standard product)			1.228	
Factor X: AxB		(Added value of new product/Environmental load of new product)/(Added value of standard product/Environmental load of standard product)			2.146	

Environmental load factor

		Standard product (1990 product equivalent)		Evaluated product	
M	(1) Weight of product	0.5	kg	0.33	kg
	Iron		kg		kg
	Copper		kg		kg
	Aluminum		kg		kg
	Resin (Recycled material)		kg		kg
	Resin (Non-recycled material)		kg		kg
	Others		Reduction in power loss during use of inverter		kg
	Reduced weight after conversion into identical function [1]		kg		kg
	(2) Weight of recycled material	0	kg	0	kg
	(3) Weight of reused parts	0	kg	0	kg
	(4) Weight of 3R material [(2) + (3)]	0	kg	0	kg
	(5) Consumption of virgin resources [(1) – (4)]	0.5	kg	0.33	kg
	(6) Recyclable weight (3R possible)	0	kg	0	kg
	(7) Nonrecyclable weight [(1) – (6)]	0.5	kg	0.33	kg
E	Power consumption during annual operation (E1)	3705	kWh	2740	kWh
	Power consumption in annual standby state (E2)	0	kWh	0	kWh
	Total (Annual power consumption)	3705	kWh	2740	kWh
T	Lead usage in solder (T1)	8.6	g	0	g
	Cadmium usage (T2)	0	g	0	g
	Mercury usage (T3)	0	g	0	g
	Hexavalent chromium usage (T4)	0.0002	g	0	g
	PBB usage (T5)	0	g	0	g
	PBDE usage (T6)	0	g	0	g
	HCFC refrigerant [2]	0		0	
	Total				

Factors with 3R viewpoint: Addition method

		Quantitative data				Standard product	Evaluated product
		Standard product	(Unit)	Evaluated product	(Unit)		
M	2 x Weight -3R-3R possible [(5) + (7)]	-	kg	-	kg	1	0.66
E	Reduction in energy consumption	-	kWh	-	kWh	1	0.73954116
T	Reduction in hazardous substances	-	g	-	g	1	0
Environmental load (MET resultant value)						1.7321	0.9912
Environmental load factor						1.7474	

1 The weight of the function absent in the standard product, which cannot be expressed as an influence on environmental load or as the added value of the product. It is the weight of the part not subject to evaluation. (Oxygen adding function and ventilation function)

2 Evaluation after HCFC refrigerant is added to the environmentally hazardous substances.

Performance factor

Example of improvement of performance/life	Performance/life index
Design for long life (Improvement of power cycle life: (ΔTj=100℃))	1.228
Performance factor	1.228

Product Information

Home Appliances

In home appliances, we're developing and introducing various products that are energy efficient and make life more comfortable.
NOTE: Many of the products shown on these pages are for the Japanese market only.


Color TV


Room Air Conditioner

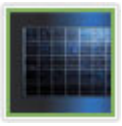

Package Air Conditioner


Refrigerator


Heat Pump Water Heater


Ventilator


Energy Recovery Ventilator


Photovoltaic Modules


Photovoltaic Inverter

Product Information

Home Appliances

Color TV | Room Air Conditioner | Package Air Conditioner | Refrigerator
Heat Pump Water Heater | Ventilator | Energy Recovery Ventilator
Photovoltaic Modules | Photovoltaic Inverter

Color TV LCD-H32MX75

Hyper Eco-Product

Factor 13.324: Performance Factor 5.00: Environmental Load Factor 2.665

Our LCD-H32MX75 color TV for the Japanese market is equipped with a "home viewing mode" that automatically optimizes picture quality for the age of the viewer and brightness of the room to offer image quality that is easy on the eyes. In addition, its slim, compact design means this 32-inch television requires relatively little space. Accommodating a larger screen than past televisions with the same exterior dimensions, the LCD-H32MX75 offers better viewing in delivering both energy efficiency and a higher-quality entertainment experience.

Reasons for Hyper Eco-Product Certification

- Industry-leading energy efficiency based on seven energy-efficiency designs
- Greater space efficiency through a slim, compact design
- Factor rating of 2 or more

Detailed equipment data

- LCD-H32MX75

M Materials: Effective use of resources

- Smaller mass/volume through product downsizing.
- Use of recycled material in stand.
- Use of labels with information on material, fire-resistance grade, and fire retardant use on plastic parts that weigh 25 grams or more and can be labeled, to promote recycling.

E Energy: Efficient use of energy

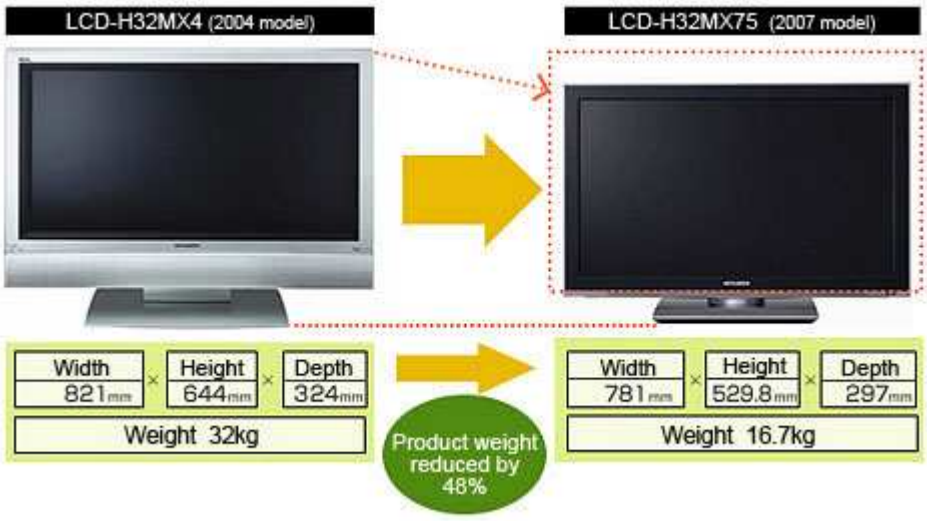
- Industry-leading energy efficiency based on seven energy-efficiency designs.
  (1) "0W" electricity consumption when main power switch is off
  (2) Lower power consumption through "home viewing mode" function
  (3) Automatic power-off when no signal detected (after approx. 10 min.)
  (4) Automatic power-off when no controls are executed (after approx. 3hrs.)
  (5) Lower power consumption through use of power-saving mode
  (6) "Brightness sensor" automatic power-off
  (7) Lower power consumption through image-off mode

T Toxicity: Avoidance of substances that are potentially harmful to the environment

- Eliminated all use of substances subject to the EU's RoHS Directive or JIS's J-Moss.

Note

- Through use of the seven energy-efficiency designs, annual power consumption was reduced to 44% (243kwh/yr.→135kwh/yr.) compared to the LCD-H32MX4 television from fiscal 2005.
- Downsizing through slim, compact design made it possible to product weight 47.8% (32.0kg→16.7kg) compared to a similar television model from fiscal 2005.



Color TV

Summary data

		Environmental load				Value of product
		M: Effective utilization of resources	E: Effective utilization of energy	T: Avoidance of discharge of environmentally hazardous substances		
Standard product	2001 product 32F-BD401	1	1	1	1.732	1
Evaluated product	2007 product LCD-H32MX75	0.31	0.57	0	0.65	5
	Details of improvement	Reduction in product weight by replacing CRT by liquid crystal panel	Promotion of industry-leading energy saving	Disuse of hazardous substances by complying with RoHS directives		(Details) Longer life Lower power consumption Reduction in volume and weight of product
Environmental load factor: A		(1/Environmental load of new product)/ (1/Environmental load of standard product)			2.665	
Performance factor: B		(Added value of new product)/ (Added value of standard product)			5	
Factor X: AxB		(Added value of new product/Environmental load of new product)/(Added value of standard product/Environmental load of standard product)			13.324	

Environmental load factor

		Standard product (1990 product equivalent)		Evaluated product	
M	(1) Weight of product	52.6	kg	16.7	kg
	Iron	3.8	kg	9.37	kg
	Copper	0.199	kg	0.085	kg
	Aluminum	0	kg	0.11	kg
	Resin (Recycled material)	0	kg	0.49	kg
	Resin (Non-recycled material)	5.1628	kg	4.51	kg
	Others	43.4382	kg	2.135	kg
	Reduced weight after conversion into identical function [1]		kg		kg
	(2) Weight of recycled material	1.35388	kg	3.7995	kg
	(3) Weight of reused parts	0	kg	0	kg
	(4) Weight of 3R material [(2) + (3)]	1.35388	kg	3.7995	kg
	(5) Consumption of virgin resources [(1) – (4)]	51.24612	kg	12.9005	kg
	(6) Recyclable weight (3R possible)	38.2402	kg	9.352	kg
	(7) Nonrecyclable weight [(1) – (6)]	14.3598	kg	7.348	kg
E	Power consumption during annual operation (E1)	236	kWh	135	kWh
	Power consumption in annual standby state (E2)		kWh		kWh
	Total (Annual power consumption)		kWh		kWh
T	Lead usage in solder (T1)	20.1	g	0	g
	Cadmium usage (T2)	0	g	0	g
	Mercury usage (T3)	0	g	0	g
	Hexavalent chromium usage (T4)	1	g	0	g
	PBB usage (T5)	0	g	0	g
	PBDE usage (T6)	0	g	0	g
	HCFC refrigerant [2]	0		0	
	Total	21.1		0	

Factors with 3R viewpoint: Addition method

		Quantitative data				Standard product	Evaluated product
		Standard product	(Unit)	Evaluated product	(Unit)		
M	2 x Weight -3R-3R possible [(5) + (7)]	-	kg	-	kg	1	0.30863831
E	Reduction in energy consumption	-	kWh	-	kWh	1	0.5720339
T	Reduction in hazardous substances	-	g	-	g	1	0
Environmental load (MET resultant value)						1.7321	0.65
Environmental load factor						2.6648	

1 The weight of the function absent in the standard product, which cannot be expressed as an influence on environmental load or as the added value of the product. It is the weight of the part not subject to evaluation. (Oxygen adding function and ventilation function)

2 Evaluation after HCFC refrigerant is added to the environmentally hazardous substances.

Performance factor

Example of improvement of performance/life	Performance/life index
Longer life by using liquid crystal panel	5

Product Information

Home Appliances

Color TV | Room Air Conditioner | Package Air Conditioner | Refrigerator
Heat Pump Water Heater | Ventilator | Energy Recovery Ventilator
Photovoltaic Modules | Photovoltaic Inverter

Room Air Conditioner MSZ-ZW408S

Hyper Eco-Product

Factor 2.41: Performance Factor 1.10:
Environmental Load Factor 2.19

The MSZ-ZW408S room air conditioner's new energy conservation human move-eye sensor detects not only floor temperature and the locations of people but also human activity levels and living areas. In so doing, it increases both comfort and energy efficiency, and helps to increase energy-efficiency consciousness through its 4-mode energy-efficiency display.

Reasons for Hyper Eco-Product Certification

- New energy conservation human move-eye sensor as an energy-efficiency technology that also improves comfort
- Factor rating of 2 or more
- Use of closed-loop recycled plastic

Detailed equipment data

- MSZ-ZW408S

M Materials: Effective use of resources

- Use of closed-loop recycled plastic recovered from used household appliances in indoor unit cross-flow fans and outdoor unit decorative panels.
- Bodies that are made to be easy to clean and disassemble for recycling.
- Ability to use (reuse) installed tubing. Significant waste reduction.

E Energy: Efficient use of energy

- Optical energy efficiency is realized through the detection of floor temperature and the locations of people by the new energy conservation human move-eye sensor, and the cooling/heating of entire rooms and areas where people are concentrated. The new energy conservation human sensor also detects human activity and the temperatures people feel depending on their activity level to produce energy efficiency of up to 50%.
- The indoor unit features an energy-efficiency display that helps to promote awareness of comfort and energy efficiency.
- The automatic filter cleaning function also promotes energy efficiency by preventing inefficiencies due to clogged filters.

T Toxicity: Avoidance of substances that are potentially harmful to the environment

- Eliminated all use of substances subject to the EU's RoHS Directive or JIS's J-Moss.

Room Air Conditioner

Summary data

		Environmental load				Value of product
		M: Effective utilization of resources	E: Effective utilization of energy	T: Avoidance of discharge of environmentally hazardous substances		
Standard product	1990 product MSZ-4010S	1	1	1	1.732	1
Evaluated product	2008 product MSZ-ZW408S	0.66	0.44	0	0.791	1.1
	Details of improvement	Disuse of plastic composite parts	Promotion of industry-leading energy saving	Disuse of HCFC refrigerant Disuse of substances subject to European RoHS directives		(Details) Improvement of heating performance Consideration of long life
Environmental load factor: A		(1/Environmental load of new product)/ (1/Environmental load of standard product)			2.19	
Performance factor: B		(Added value of new product)/ (Added value of standard product)			1.1	
Factor X: AxB		(Added value of new product/Environmental load of new product)/(Added value of standard product/Environmental load of standard product)			2.41	

Environmental load factor

		Standard product (1990 product equivalent)		Evaluated product	
M	(1) Weight of product	64	kg	45.69	kg
	Iron	28.9	kg	21.15	kg
	Copper	8.91	kg	9.15	kg
	Aluminum	7.54	kg	4.74	kg
	Resin (Recycled material)	0	kg	0.94	kg
	Resin (Non-recycled material)	10.7	kg	7.15	kg
	Others	7.95	kg	4.06	kg
	Reduced weight after conversion into identical function [1]		kg	-1.5	kg
	(2) Weight of recycled material	12.5414	kg	10.29338	kg
	(3) Weight of reused parts	0	kg	0	kg
	(4) Weight of 3R material [(2) + (3)]	12.5414	kg	10.29338	kg
	(5) Consumption of virgin resources [(1) – (4)]	51.4586	kg	35.39562	kg
	(6) Recyclable weight (3R possible)	49.9	kg	37.9	kg
	(7) Nonrecyclable weight [(1) – (6)]	14.08	kg	7.76713	kg
E	Power consumption during annual operation (E1)	3206	kWh	1406	kWh
	Power consumption in annual standby state (E2)	12	kWh	4	kWh
	Total (Annual power consumption)	3218	kWh	1410	kWh
T	Lead usage in solder (T1)	25	g	0	g
	Cadmium usage (T2)	0	g	0	g
	Mercury usage (T3)	0	g	0	g
	Hexavalent chromium usage (T4)	2	g	0	g
	PBB usage (T5)	0	g	0	g
	PBDE usage (T6)	350	g	0	g
	HCFC refrigerant [2]	1,000		0	
	Total				

Factors with 3R viewpoint: Addition method

		Quantitative data				Standard product	Evaluated product
		Standard product	(Unit)	Evaluated product	(Unit)		
M	2 x Weight -3R-3R possible [(5) + (7)]	-	kg	-	kg	1	0.6585852
E	Reduction in energy consumption	-	kWh	-	kWh	1	0.4381603
T	Reduction in hazardous substances	-	g	-	g	1	0
	Environmental load (MET resultant value)					1.7321	0.791
	Environmental load factor					2.1896	

1 The weight of the function absent in the standard product, which cannot be expressed as an influence on environmental load or as the added value of the product. It is the weight of the part not subject to evaluation. (Oxygen adding function and ventilation function)

2 Evaluation after HCFC refrigerant is added to the environmentally hazardous substances.

Performance factor

Example of improvement of performance/life	Performance/life index
Improvement of maximum capacity	1.12
30% energy saving by mounting Move-eye for reduction in wasteful operation	1.08

Product Information

Home Appliances

Color TV | Room Air Conditioner | Package Air Conditioner | Refrigerator
Heat Pump Water Heater | Ventilator | Energy Recovery Ventilator
Photovoltaic Modules | Photovoltaic Inverter

Package Air Conditioner Wide Place Inverter Air Conditioner MPLZ-WRP:B Series

Hyper Eco-Product

Factor 2.567: Performance Factor 1.00: Environmental Load Factor 2.567

Package air conditioners featuring the world's most compact outdoor unit, and energy efficiency among the highest in the industry.

Reasons for Hyper Eco-Product Certification

- Most compact outdoor unit among top commercial air conditioners (8-10 hp)
- APF of 4.6 among the highest in the industry (10 hp when combined with the 4-direction cassette-type indoor unit)
- Factor rating of 2 or more

Detailed equipment data

- MPLZ-WRP:B series

M Materials: Effective use of resources

- Converted previous top-flow 8hp and 10hp outdoor unit to side flow, reducing weight to 2/3, and bulk to 1/3, of previous model.
- Existing tubing and wiring can be used (reused) without cleaning. Significant reduction of waste.
- First in the industry to use a refrigerant level detector. Proper filling of refrigerant possible even when using existing tubing.

E Energy: Efficient use of energy

- Achieved an APF of 4.6, among the highest in the industry, through a heat exchanger equipped with densely packed fine tubine and inflex-to-fan, and a new high-efficiency scroll compressor.

T Toxicity: Avoidance of substances that are potentially harmful to the environment

- Uses a refrigerant (HFC410A) with an ozone damage coefficient of zero.
- Eliminated all use of substances subject to the EU's RoHS Directive or JIS's J-Moss.

Wide Place Inverter Air Conditioner

Summary data

		Environmental load				Value of product
		M: Effective utilization of resources	E: Effective utilization of energy	T: Avoidance of discharge of environmentally hazardous substances		
Standard product	1990 product PLH-125FKD × 2/ PUH-250EKD	1	1	1	1.732	1
Evaluated product	2007 product MPLZ-RP140BA × 2/ MPUZ-WRP280HA6	0.486	0.467	0	0.675	1
	Details of improvement	Substantial reduction in materials used for outdoor machine	Promotion of industry-leading energy saving	Disuse of HCFC refrigerant Disuse of substances subject to European RoHS directives		(Details) Improvement of heating performance Consideration of long life
Environmental load factor: A		(1/Environmental load of new product)/ (1/Environmental load of standard product)			2.567	
Performance factor: B		(Added value of new product)/ (Added value of standard product)			1	
Factor X: AxB		(Added value of new product/Environmental load of new product)/(Added value of standard product/Environmental load of standard product)			2.567	

Environmental load factor

		Standard product (1990 product equivalent)		Evaluated product	
M	(1) Weight of product	391	kg	195	kg
	Iron	166.38	kg	90.4	kg
	Copper	121.7	kg	46	kg
	Aluminum	16.42	kg	17.6	kg
	Resin (Recycled material)	2.63	kg	1.88	kg
	Resin (Non-recycled material)	29.99	kg	26.9	kg
	Others	53.23	kg	12.22	kg
	Reduced weight after conversion into identical function [1]		kg	0	kg
	(2) Weight of recycled material	78.42	kg	42.21	kg
	(3) Weight of reused parts	1.88	kg	2.63	kg
	(4) Weight of 3R material [(2) + (3)]	80.31	kg	44.84	kg
	(5) Consumption of virgin resources [(1) – (4)]	310.69	kg	150.16	kg
	(6) Recyclable weight (3R possible)	311.6	kg	155.4	kg
	(7) Nonrecyclable weight [(1) – (6)]	79.37	kg	39.59	kg
E	Power consumption during annual operation (E1)	20516	kWh	9590	kWh
	Power consumption in annual standby state (E2)	0	kWh	0	kWh
	Total (Annual power consumption)	20516	kWh	9590	kWh
T	Lead usage in solder (T1)	90	g	0	g
	Cadmium usage (T2)	0.192	g	0	g
	Mercury usage (T3)	22.5	g	0	g
	Hexavalent chromium usage (T4)	12	g	0	g
	PBB usage (T5)	0	g	0	g
	PBDE usage (T6)	0	g	0	g
	HCFC refrigerant [2]	11	kg	0	kg
	Total				

Factors with 3R viewpoint: Addition method

		Quantitative data				Standard product	Evaluated product
		Standard product	(Unit)	Evaluated product	(Unit)		
M	2 x Weight -3R-3R possible [(5) + (7)]	-	kg	-	kg	1	0.486
E	Reduction in energy consumption	-	kWh	-	kWh	1	0.467
T	Reduction in hazardous substances	-	g	-	g	1	0
Environmental load (MET resultant value)						1.7321	0.675
Environmental load factor						2.567	

1 The weight of the function absent in the standard product, which cannot be expressed as an influence on environmental load or as the added value of the product. It is the weight of the part not subject to evaluation. (Oxygen adding function and ventilation function)

2 Evaluation after HCFC refrigerant is added to the environmentally hazardous substances.

Product Information

Home Appliances

Color TV | Room Air Conditioner | Package Air Conditioner | Refrigerator
Heat Pump Water Heater | Ventilator | Energy Recovery Ventilator
Photovoltaic Modules | Photovoltaic Inverter

Refrigerator MR-G52N

Hyper Eco-Product

Factor 2.62

The MR-G52N refrigerator uses instantaneous fine-particle freezing to offer the world's first high-quality freezing in a home refrigerator. It also offers greater convenience in the form of freely adjustable refrigerator space.

Reasons for Hyper Eco-Product Certification

- Factor rating of 2 or more
- Expanded use of closed-loop recycled plastic and other recycled materials
- Quietest refrigerator in the industry

Detailed equipment data

- MR-G52N

M Materials: Effective use of resources

- Closed-loop recycled plastic (polypropylene, polystyrene) recovered from used refrigerators at a home appliance recycling plant is used in refrigerator parts.
- Increased capacity by 20L, compared to last year's similar-class products, and realized an enormous total capacity of 515L in a relatively compact width of 685mm by revising the thickness of insulated walls separating compartments and making part modules more compact.

E Energy: Efficient use of energy

- To improve the performance of the refrigerant circuit, we changed the layout of the condenser, reduced the wind resistance of the evaporator air duct, and reduced energy consumption.
- We switched from an anti-condensation heater to a condenser, revised the insulation specification, and reduced energy consumption by lowering the current carrying ratio of the heat-retention heater.
- Enhanced energy efficiency by improving inverter control efficiency and board power supply efficiency.

T Toxicity: Avoidance of substances that are potentially harmful to the environment

- Eliminated all use of substances subject to the EU's RoHS Directive or JIS's J-Moss.

Refrigerator

Summary data

		Environmental load				Value of product
		M: Effective utilization of resources	E: Effective utilization of energy	T: Avoidance of discharge of environmentally hazardous substances		
Standard product	1998 product MR-M37S	1	1	1	1.732	
Evaluated product	2007 product MR-G52N	0.54	0.36	0	0.659	
	Details of improvement	Expansion of utilization of recycled plastic	Promotion of energy-saving	Disuse of HCFC refrigerant Disuse of substances subject to European RoHS directives		
Environmental load factor: A		(1/Environmental load of new product)/ (1/Environmental load of standard product)			2.62	

Environmental load factor

		Standard product (1998 product equivalent)		Evaluated product	
M	(1) Weight of product	85	kg	94	kg
	Iron	39.04	kg	44.04	kg
	Copper	3.07	kg	4.61	kg
	Aluminum	0.7	kg	1.19	kg
	Resin (Recycled material)	0.12	kg	1.06	kg
	Resin (Non-recycled material)	38	kg	32.09	kg
	Others	3.07	kg	11.01	kg
	Reduced weight after conversion into identical function	0	kg	0	kg
	(2) Weight of recycled material	42.93	kg	50.9	kg
	(3) Weight of reused parts	0	kg	0	kg
	(4) Weight of 3R material [(2) + (3)]	42.93	kg	43.1	kg
	(5) Consumption of virgin resources [(1) – (4)]	42.07	kg	12.15	kg
	(6) Recyclable weight (3R possible)	42.93	kg	73.05	kg
	(7) Nonrecyclable weight [(1) – (6)]	42.07	kg	20.95	kg
E	Power consumption during annual operation (E1)	1050	kWh	530	kWh
	Power consumption in annual standby state (E2)		kWh	0	kWh
	Total (Annual power consumption)	1050	kWh	530	kWh
T	Lead usage in solder (T1)	6	g	0	g
	Cadmium usage (T2)	0	g	0	g
	Mercury usage (T3)	0	g	0	g
	Hexavalent chromium usage (T4)	4	g	0	g
	PBB usage (T5)	0	g	0	g
	PBDE usage (T6)	3.5	g	0	g
	CFC usage: Refrigerant (T7)	190	g	0	g
	CFC usage: Heat insulator (T8)	700	g	0	g
	Total				

Factors with 3R viewpoint: Addition method

		Quantitative data				Standard product	Evaluated product
		Standard product	(Unit)	Evaluated product	(Unit)		
M	2 x Weight -3R-3R possible [(5) + (7)]	-	kg	-	kg	1	0.5498774
E	Reduction in energy consumption	-	kWh	-	kWh	1	0.3646047
T	Reduction in hazardous substances	-	g	-	g	1	0
	Environmental load (MET resultant value)					1.7321	0.659
	Environmental load factor					2.6252	

Performance factor

Example of improvement of performance/life	Performance/life index
Capacity coefficient	1.3844086

Product Information

Home Appliances

Color TV | Room Air Conditioner | Package Air Conditioner | Refrigerator
Heat Pump Water Heater | Ventilator | Energy Recovery Ventilator
Photovoltaic Modules | Photovoltaic Inverter

Heat Pump Water Heater SRT-HP46W3

Factor X Factor 2.486: Performance Factor 2:
Environmental Load Factor 1.243

SRT-HP46W3 heat pump water heaters are electric water heaters that stand out in terms of both install ability and energy efficiency. This is the result of efforts to create a smaller, lighter electric heat pump water heater and achieve an Annual Performance Factor (APF) of 3.2.

Detailed equipment data

- SRT-HP46W3

M Materials: Effective use of resources

- A smaller, lighter heat pump unit.
- A lighter hot water tank.
- Reduction of cardboard and polystyrene in packaging.

E Energy: Efficient use of energy

- Achieved an APF of 3.2 by increasing the heat-retention performance of the hot water tank.

T Toxicity: Avoidance of substances that are potentially harmful to the environment

- Eliminated all use of substances subject to the EU's RoHS Directive.

Heat Pump Water Heater

Summary data

		Environmental load				Value of product
		M: Effective utilization of resources	E: Effective utilization of energy	T: Avoidance of discharge of environmentally hazardous substances		
Standard product	1992 product SRT-4661F	1	1	1	1.732	1
Evaluated product	2008 product SRT-HP46W3	1.35	0.35	0	1.393	1.1
	Details of improvement	Reduction in weight of HP unit and tank unit Reduction in usage of corrugated cardboard and foamed polystyrene	Achievement of annual hot-water supply efficiency of 3.2	Disuse of substances subject to European RoHS directives		(Details) Improvement of heating performance Consideration of long life
Environmental load factor: A		(1/Environmental load of new product)/ (1/Environmental load of standard product)			1.243	
Performance factor: B		(Added value of new product)/ (Added value of standard product)			2	
Factor X: AxB		(Added value of new product/Environmental load of new product)/(Added value of standard product/Environmental load of standard product)			2.486	

Environmental load factor

		Standard product (1990 product equivalent)		Evaluated product	
M	(1) Weight of product	104	kg	132	kg
	Iron	83.7	kg	94.36	kg
	Copper	13.1	kg	20.12	kg
	Aluminum	0	kg	3.08	kg
	Resin (Recycled material)	0	kg	0	kg
	Resin (Non-recycled material)	0.6	kg	10.14	kg
	Others	6.6	kg	4.2	kg
	Reduced weight after conversion into identical function [1]		kg	-0.7	kg
	(2) Weight of recycled material	30.867	kg	36.0128	kg
	(3) Weight of reused parts	0	kg	0	kg
	(4) Weight of 3R material [(2) + (3)]	30.867	kg	36.0128	kg
	(5) Consumption of virgin resources [(1) – (4)]	73.133	kg	95.9872	kg
	(6) Recyclable weight (3R possible)	97.4	kg	120.36	kg
	(7) Nonrecyclable weight [(1) – (6)]	6.6	kg	11.64	kg
E	Power consumption during annual operation (E1)	68651	kWh	23727	kWh
	Power consumption in annual standby state (E2)	0	kWh	0	kWh
	Total (Annual power consumption)	68651	kWh	23727	kWh
T	Lead usage in solder (T1)	2.4	g	0	g
	Cadmium usage (T2)		g	0	g
	Mercury usage (T3)		g	0	g
	Hexavalent chromium usage (T4)		g	0	g
	PBB usage (T5)		g	0	g
	PBDE usage (T6)		g	0	g
	HCFC refrigerant [2]			0	
	Total				

Factors with 3R viewpoint: Addition method

		Quantitative data				Standard product	Evaluated product
		Standard product	(Unit)	Evaluated product	(Unit)		
M	2 x Weight -3R-3R possible [(5) + (7)]	-	kg	-	kg	1	1.34984511
E	Reduction in energy consumption	-	kWh	-	kWh	1	0.34561769
T	Reduction in hazardous substances	-	g	-	g	1	0
Environmental load (MET resultant value)						1.7321	1.3934
Environmental load factor						1.243	

1 The weight of the function absent in the standard product, which cannot be expressed as an influence on environmental load or as the added value of the product. It is the weight of the part not subject to evaluation. (Oxygen adding function and ventilation function)

2 Evaluation after HCFC refrigerant is added to the environmentally hazardous substances.

Performance factor

Example of improvement of performance/life	Performance/life index
Annual hot-water supply efficiency: 3.2	2
Performance factor	2

Product Information

Home Appliances

Color TV | Room Air Conditioner | Package Air Conditioner | Refrigerator
Heat Pump Water Heater | Ventilator | Energy Recovery Ventilator
Photovoltaic Modules | Photovoltaic Inverter

Ventilator V-08PX6, V-08PD6 (for Japanese market only)

Hyper Eco-Product

Factor 1.87: Performance Factor 1.21: Environmental Load Factor 1.54

These compact ventilators are equipped with high-performance, compact motors ("minimo") for improved performance and energy efficiency.

Reasons for Hyper Eco-Product Certification

- Received the Agency for Natural Resources and Energy Director General's Prize at the Energy Conservation Grand Prize
- Resource conservation achieved through the use of a compact motor

Detailed equipment data

- V-08PD6

M Materials: Effective use of resources

- Equipped with the "minimo" compact motor, which is 70% smaller and lighter than previous motors.

E Energy: Efficient use of energy

- Increased ventilation air volume by at least 25% by expanding air passageways.
- Up to 30% energy savings from high-density windings based on a structure of separate winding frameworks.

T Toxicity: Avoidance of substances that are potentially harmful to the environment

- Eliminated the use of the six substances specified by the EU's RoHS directive.

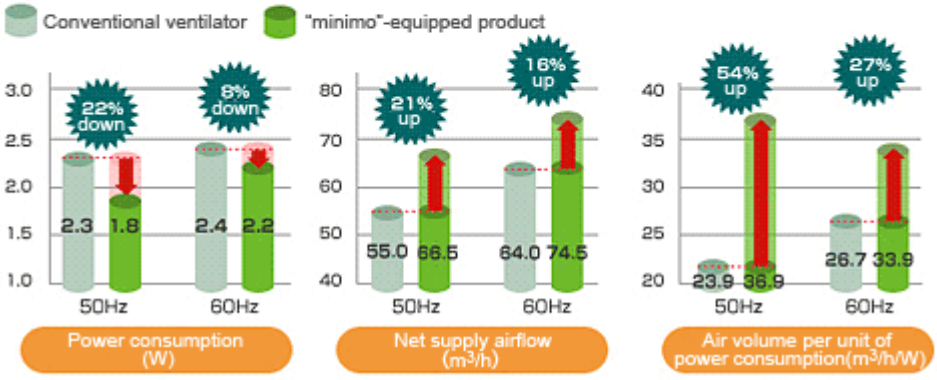
Note

Received the Agency for Natural Resources and Energy Director General's Prize at the Energy Conservation Grand Prize

The V-08PX6, and 15 other ventilator models, all equipped with the "minimo" compact motor, were named winners of the Agency for Natural Resources and Energy Director General's Prize at the Energy Conservation Grand Prize.

Model Name	Frequency (Hz)	Power consumption (W)	Net supply airflow (m^3/h)*1	Air volume per unit of power consumption ($m^3/h/W$)
"minimo" -equipped product V-08PX6	50	1.8	66.5	36.9
	60	2.2	74.5	33.9
Conventional ventilator V-08PX5	50	2.3	55.0	23.9
	60	2.4	64.0	26.7

*1 Air volume when installed with pipe of approximately 6.5m in length.



Ventilator V-08PD6

Summary data

		Environmental load				Value of product
		M: Effective utilization of resources	E: Effective utilization of energy	T: Avoidance of discharge of environmentally hazardous substances		
Standard product	2005 product V-08PD5	1	1	1	1.73	
Evaluated product	2007 product V-08PD6	0.59	0.96	0	1.12	
	Details of improvement	Reduction in weight by miniaturization of motor	Higher-density winding by using block-construction former	Adoption of lead-free solder		(Details) Improvement of ventilation air volume Reduction in power consumption
Environmental load factor: A		(1/Environmental load of new product)/ (1/Environmental load of standard product)			1.54	
Performance factor: B		(Added value of new product)/ (Added value of standard product)			1.21	
Factor X: AxB		(Added value of new product/Environmental load of new product)/(Added value of standard product/Environmental load of standard product)			1.87	

Environmental load factor

		Standard product		Evaluated product	
M	(1) Weight of product	0.609	kg	0.434	kg
	Iron	0.051	kg	0.216	kg
	Copper	0	kg	0	kg
	Aluminum	0	kg	0	kg
	Resin (Recycled material)	0	kg	0	kg
	Resin (Non-recycled material)	0.19	kg	0.031	kg
	Others	0.368	kg	0.18	kg
	(2) Weight of recycled material	0.018	kg	0.076	kg
	(3) Weight of reused parts	0	kg	0	kg
	(4) Weight of 3R material [(2) + (3)]	0.018	kg	0.076	kg
	(5) Consumption of virgin resources [(1) – (4)]	0.591	kg	0.358	kg
	(6) Recyclable weight (3R possible)	0.156	kg	0.180	kg
	(7) Nonrecyclable weight [(1) – (6)]	0.453	kg	0.254	kg
E	Power consumption during annual operation (E1)	4.198	kWh	4.015	kWh
	Power consumption in annual standby state (E2)	0	kWh	0	kWh
	Total (Annual power consumption)	4.198	kWh	4.015	kWh
T	Lead usage in solder (T1)	0.5	g	0	g
	Cadmium usage (T2)	0	g	0	g
	Mercury usage (T3)	0	g	0	g
	Hexavalent chromium usage (T4)	0	g	0	g
	PBB usage (T5)	0	g	0	g
	PBDE usage (T6)	0	g	0	g
	Total				

Factors with 3R viewpoint: Addition method

		Quantitative data				Standard product	Evaluated product
		Standard product	(Unit)	Evaluated product	(Unit)		
M	2 x Weight -3R-3R possible [(5) + (7)]	-	kg	-	kg	1	0.59
E	Reduction in energy consumption	-	kWh	-	kWh	1	0.96
T	Reduction in hazardous substances	-	g	-	g	1	0
	Environmental load (MET resultant value)					1.732	1.122
	Environmental load factor					1.544	

Performance factor

Example of improvement of performance/life	Performance/life index
Increase in ventilation air volume	1.21
Performance factor	1.21

Product Information

Home Appliances

Color TV | Room Air Conditioner | Package Air Conditioner | Refrigerator
Heat Pump Water Heater | Ventilator | Energy Recovery Ventilator
Photovoltaic Modules | Photovoltaic Inverter

Energy Recovery Ventilator (LOSSNAY) LGH-50RS5 (for Japanese market only)

Hyper Eco-Product

Factor 2.68: Performance Factor 2.18: Environmental Load Factor 1.23

Equipped with the Hyper Eco Core, which delivers a total heat exchange efficiency of 66%, the LGH-50RS5 is an Energy Recovery Ventilator that is both environmentally conscious and energy efficient. Thanks to the new ventilation pattern function, this product's Microprocessor type offers more precise control of ventilation to reduce the air conditioning/heating load caused by ventilation.

Reasons for Hyper Eco-Product Certification

- Environmentally effective product
- Factor rating of 2 or more

Detailed equipment data

- LGH-50RS5

M Materials: Effective use of resources

- Fewer parts, fewer screws, thinner sheet metal.

E Energy: Efficient use of energy

- Total heat exchange efficiency of 66%.

T Toxicity: Avoidance of substances that are potentially harmful to the environment

- Eliminated the use of the six substances specified by the EU's RoHS directive.

Note

With the Hyper Eco Core, a new heat exchanger (Lossnay Core), this ventilator delivers total heat exchange efficiency of 66%, which is the leading position in the market. Keeping air conditioning/heating losses to a minimum, the 50RS5 can deliver up to ¥50,000 savings in annual air conditioning/heating expenses compared to a ventilator that simultaneously takes in and exhausts air. In addition, the Microprocessor type of this product offers more flexible operation for individual days through its weekly timer function, while the Extra Low Mode makes it possible to implement 24-hour energy conservation ventilation. These functions provide more precise control of air volume, yielding much better energy-saving ventilation. Moreover, during the summer season, the Night Purge function draws cooler outside air into the room to reduce the load when the air conditioning is started the next morning, thereby boosting energy efficiency.

Ventilator LGH-50RS5

Summary data

		Environmental load				Value of product
		M: Effective utilization of resources	E: Effective utilization of energy	T: Avoidance of discharge of environmentally hazardous substances		
Standard product	1990 product LGH-50R6	1	1	1	1.73	1
Evaluated product	2008 product LGH-50RS5	0.51	1.31	0	1.4	2.18
	Details of improvement	Reduction in parts Reduction in screws Use of thinner plate		Lead-free solder for motor and board		(Details) · Heat exchange efficiency 58% → 66% · External static pressure 30 Pa → 130 Pa · Effective amount of ventilation 90% → 95%
Environmental load factor: A		(1/Environmental load of new product)/ (1/Environmental load of standard product)			1.23	
Performance factor: B		(Added value of new product)/ (Added value of standard product)			2.18	
Factor X: AxB		(Added value of new product/Environmental load of new product)/(Added value of standard product/Environmental load of standard product)			2.68	

Environmental load factor

		Standard product (1990 product equivalent)		Evaluated product	
M	(1) Weight of product	49.75	kg	30.64	kg
	Iron	33.2	kg	24.25	kg
	Copper	0.59	kg	0.59	kg
	Aluminum	0.13	kg	0	kg
	Resin (Recycled material)	0	kg	0.81	kg
	Resin (Non-recycled material)	3.68	kg	0.6	kg
	Others	12.15	kg	4.39	kg
	(2) Weight of recycled material	11.71	kg	9.37	kg
	(3) Weight of reused parts	0	kg	0	kg
	(4) Weight of 3R material [(2) + (3)]	11.71	kg	9.37	kg
	(5) Consumption of virgin resources [(1) – (4)]	38.04	kg	21.27	kg
	(6) Recyclable weight (3R possible)	33.92	kg	24.25	kg
	(7) Nonrecyclable weight [(1) – (6)]	15.83	kg	6.39	kg
E	Power consumption during annual operation (E1)	570	kWh	745	kWh
	Power consumption in annual standby state (E2)	0	kWh	0	kWh
	Total (Annual power consumption)	570	kWh	745	kWh
T	Lead usage in solder (T1)	3.33	g	0	g
	Cadmium usage (T2)	0	g	0	g
	Mercury usage (T3)	0	g	0	g
	Hexavalent chromium usage (T4)	0	g	0	g
	PBB usage (T5)	0	g	0	g
	PBDE usage (T6)	0	g	0	g
	Total				

Factors with 3R viewpoint: Addition method

		Quantitative data				Standard product	Evaluated product
		Standard product	(Unit)	Evaluated product	(Unit)		
M	2 x Weight -3R-3R possible [(5) + (7)]	-	kg	-	kg	1	0.513
E	Reduction in energy consumption	-	kWh	-	kWh	1	1.307
T	Reduction in hazardous substances	-	g	-	g	1	0
Environmental load (MET resultant value)						1.732	1.404
Environmental load factor						1.233	

Performance factor

Example of improvement of performance/life	Performance/life index
Improvement of heat exchange efficiency (58% → 66%)	1.138
Increase in external static pressure (30 Pa → 130 Pa)	4.333
Increase in effective amount of ventilation (90% → 95%)	1.056
Performance factor	2.176

Product Information

Home Appliances

Color TV | Room Air Conditioner | Package Air Conditioner | Refrigerator
Heat Pump Water Heater | Ventilator | Energy Recovery Ventilator
Photovoltaic Modules | Photovoltaic Inverter

Photovoltaic Modules PV-TD190MF5 (This product is a European Model certificated by TUV.)

Hyper Eco-Product

Factor 1.51: Performance Factor 1.03: Environmental Load Factor 1.47

PV-TD190MF5, these modules are installed mainly on the residential roof, commercial building.

Reasons for Hyper Eco-Product Certification

- Environmentally effective product
- Factor rating of 1.5 or more

M Materials: Effective use of resources

- Long-term reliability and long lifetime.
- Reduced weight-to-output ratio by improving the product to a high output specification.

E Energy: Efficient use of energy

- Achieved high-output high-efficiency performance.

T Toxicity: Avoidance of substances that are potentially harmful to the environment

- Lead content 0g in soldered parts; a new form of photovoltaic power generation, even more environmentally conscious.

Note

- Lead-free solder-coatingless cell: For the silver electrodes formed on the solar cell surface, we have succeeded in developing a composition and manufacturing process that excels in environmental resistance. This process has made us the first in the industry to mass produce this technology. The modules contain no lead, which is harmful to the human body, while the expanded light reflection effects produced due to the solder-less state help improve cell efficiency.
- Tightest tolerance: Our production management system can provide the strictest module output power tolerance (±3%) in the industry. This innovation can be expected to provide higher output power in your PV system by reducing module string losses
- Protection Bar: We have developed a unique Protection Bar back side module which can pass the IEC61215 2nd edition's static load test of 5400Pa.
- Four-layer structure back film: The newly developed PET-type back film offers four-layer construction. This design achieves a 1000V maximum system voltage, further improving the environmental characteristics of the module.

Product Information

Home Appliances

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Photovoltaic Inverter PV-PNS04ATL-GER

Hyper Eco-Product

Factor 2.33: Performance Factor 2.1:
Environmental Load Factor 1.11

Mitsubishi Electric Photovoltaic (PV) inverters lead the industry with a maximum power conversion efficiency of 96.2% and maximum input voltage rating of 700V.

Reasons for Hyper Eco-Product Certification

- Environmentally effective product
- Factor rating of 2 or more

E Energy: Efficient use of energy

- A high power conversion efficiency of 96.2% ensures effective utilization of generated power.

T Toxicity: Avoidance of substances that are potentially harmful to the environment

- Eliminated all use of substances subject to the EU's RoHS Directive.

Note

The PV inverters are equipped with a dedicated power module which Mitsubishi Electric has developed specifically for the European market. The inner circuit adopts a new "three level inverter system*," and the output waveform is filtered and adjusted using a reactor made of new material (ferrite core) that is resistant to high outputs and minimizes loss. These control technologies are behind the PV inverters' industry-leading power conversion efficiency of 96.2%.

* Patent pending