CORPORATE SOCIAL RESPONSIBILITY 2007
Enviromental Report

Changes for the Better

MITSUBISHI ELECTRIC

Environmental Report

Japanese Site

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

Special Report

Mitsubishi Electric is rising to the challenge of reducing greenhouse gas emissions company-wide.

More

A Guide to Mitsubishi Electric Environmental Technologies

An introduction to some of our technologies that contribute to preservation of the environment.

More

Outdoor Classroom of Nature Conservation Lectures

Helping young people develop an environmental mindset through nature observation and activities.

More

Introduction

View the period, scope and basic items of the Mitsubishi Electric Group's Environmental Report.

More

Vision

Learn about Mitsubishi Electric's 5th Environmental Plan to bring about a sustainable society.

More

Environmental Management

Features of the Mitsubishi Electric Group's environmental management system.

More

Environmental Performance

Mitsubishi Electric's environmental achievements for fiscal 2007 (year ending March 31, 2007).

More

Eco-Product Information

An overview of our eco-products and hyper eco-products with lower environmental impact.

More

Communication

Find out more about Mitsubishi Electric's environmental communications activities.

More

Fiscal 2007 Awards Back Issues

About this Environmental 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, 2006 to March 31, 2007
*The report also includes some information on policies, targets and plans beyond fiscal 2007.

Report Scope

Companies with an environmental plan: Mitsubishi Electric and 101 affiliates (79 domestic, 22 overseas)

79 Domestic Affiliates

Inaryo Technica Corporation	Mitsubishi Electric Control Software Corporation
Uemori Denki Co., Ltd.	Mitsubishi Electric System & Service Co., Ltd.
Osram-Melco Ltd.	Mitsubishi Electric Information Network Corporation
Kita Koudensha Corporation	Mitsubishi Electric Lighting Corporation
Kohshin Electric Corporation	Mitsubishi Electric Documentex Ltd.
The Kodensha Co., Ltd.	Mitsubishi Electric Tokki Systems Corporation
Koryo Electric Co.,Ltd.	Mitsubishi Electric Business Systems Co., Ltd.
Sun-A Micro-Semiconductor Co., Ltd.	Mitsubishi Electric Building Techno-Service Co., Ltd.
Sanshin Electronics Co., Ltd.	Mitsubishi Electric Plant Engineering Corporation
Sanryo Technica Co., Ltd.	Mitsubishi Electric Home Appliance Co., Ltd.
Sanwa Electric Co., Ltd.	Mitsubishi Electric Micro-Computer Application Software Co., Ltd.
SPC Electronics Corporation	Mitsubishi Electric Mechatronics Software Corporation
Japan Net Corporation	Mitsubishi Electric Metecs Co., Ltd.
Super Communications, Inc.	Mitsubishi Electric Logistics Corporation
Seiryo Technica Co., Ltd.	Mitsubishi Electric Life Service Corporation
Setsuyo Astec Corporation	Mitsubishi Space Software Co., Ltd.
Setsuryo Technica Co., Ltd.	Mitsubishi Hitachi Home Elevator Corporation
Soryo Electronic Devices Corporation	Mitsubishi Precision Co., Ltd.
Sowa Technica Inc.	Miyoshi Electronics Corporation
Taiyo Musen Co., Ltd.	Meiryo Technica Corporation
Tada Electric Co., Ltd.	Melco Airtec Corporation
Churyo Technica Co., Ltd.	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	Ryoden Elevator Construction Ltd.
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.
Mitsubishi Electric Elevator Products Co., Ltd.	Waryo Technica Co., Ltd.
Mitsubishi Electric Engineering Co., Ltd.	

22 Overseas Affiliates

Electric Power steering 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.
China Electric Manufacturing Corp

Referenced Guidelines

- Environmental Reporting Guidelines (2003), Ministry of the Environment
- Business Owner Environmental Performance Indicator Guideline (2002), Ministry of the Environment
- Environmental Reporting Guidelines 2001-With Focus on Stakeholders, Ministry of Economy, Trade and Industry
- Sustainability Reporting Guidelines 2002, Global Reporting Initiative

Regarding Future Projections, Plans and Targets

This report contains not only statements of past and present fact related to Mitsubishi Electric Corporation and its affiliates (Mitsubishi Electric Group), but also future projections, plans, targets and other forward-looking statements. Such projections, plans and targets constitute suppositions or judgments based on information available as of the time they are stated. The results of future business activities and events may differ from projections, plans and targets due to changes in various factors. Your understanding of the aforementioned is appreciated.

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MITSUBISHI ELECTRIC

Taking on the Challenge of Global Warming

Mitsubishi Electric CO_2 Emissions and CO_2 Reduction Efforts

Reduce CO_2 emissions per nominal net sales to 40% of fiscal 1991 levels (60% reduction) by fiscal 2011

Reduce CO_2 emissions by 46,000 tons by fiscal 2011 through aggressive investment in energy saving facilities

comments

We plan to achieve our targets by investing in energy efficiency, steadily implementing initiatives, and continuing to formulate effective strategies.

Kanji Ota, Corporate Environmental Sustainability Group

Section 1	Section 2	Section 3	Section 4
Factory and Office Challenges	Logistics Challenges	Product Challenges	Customer Proposal Challenges

MITSUBISHI ELECTRIC

Taking on the Challenge of Global Warming

Mitsubishi Electric CO_2 Emissions and CO_2 Reduction Efforts

Reduce CO_2 emissions per nominal net sales to 40% of fiscal 1991 levels (60% reduction) by fiscal 2011

Management indicator changed from CO_2 emissions per unit of net sales to CO_2 emissions per nominal net sales as Mitsubishi Electric takes on the challenge of a more demanding target

Mitsubishi Electric emitted 459,000 tons of carbon dioxide from production activities in fiscal 2007. This figure is 76.8% of fiscal 1991 levels (a 23.2% reduction) per unit of net sales. One of our strategies is to invest in energy saving facilities every year at a target rate of 0.1% of net sales, and this strategy is starting to yield results. By reducing emissions according to this year's investment plan, we are on track to achieve our voluntary target of reducing emissions to 75% of fiscal 1991 levels (a 25% reduction) per unit of net sales by fiscal 2011 at the end of fiscal 2008, which would be three years ahead of schedule.

Given this development, we created a new, more demanding target for fiscal 2011: reduce CO_2 emissions per nominal net sales to 40% of fiscal 1991 levels (a 60% reduction) by fiscal 2011. Emissions per nominal net sales is a management indicator that uses net sales adjusted by the corporate goods price index. Emissions per unit of net sales is calculated by dividing CO_2–converted energy input by net sales. But when sales prices (goods prices) change, the unit changes as well, so it is impossible with this indicator to accurately ascertain reduction achievements. We have therefore adopted emissions per nominal net sales, which is closer to CO_2 emissions per unit of production volume, as our new management indicator in order to clarify reduction successes. Emissions per nominal net sales directly reflects the results of our energy savings efforts or neglect, so it is a more demanding management indicator than emissions per unit of net sales. We intend to tackle the challenge of meeting this new target.

Reduction Target for CO_2 Emissions from Production Activities

Reduce CO_2 emissions per unit of net sales to 75% of fiscal 1991 levels (25% reduction) by fiscal 2011

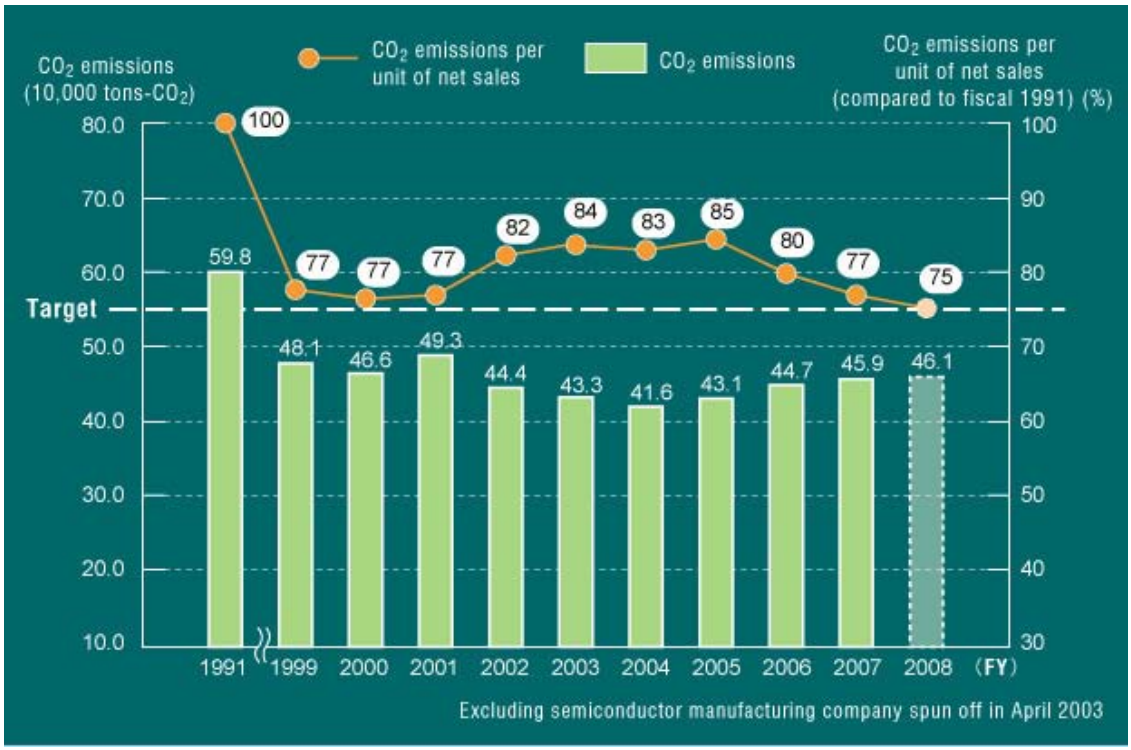
FY2007 Reduction in CO_2 Emissions

Reduced CO_2 emissions to 76.8% of fiscal 1991 levels (23.2% reduction) (Set to achieve target in fiscal 2008)

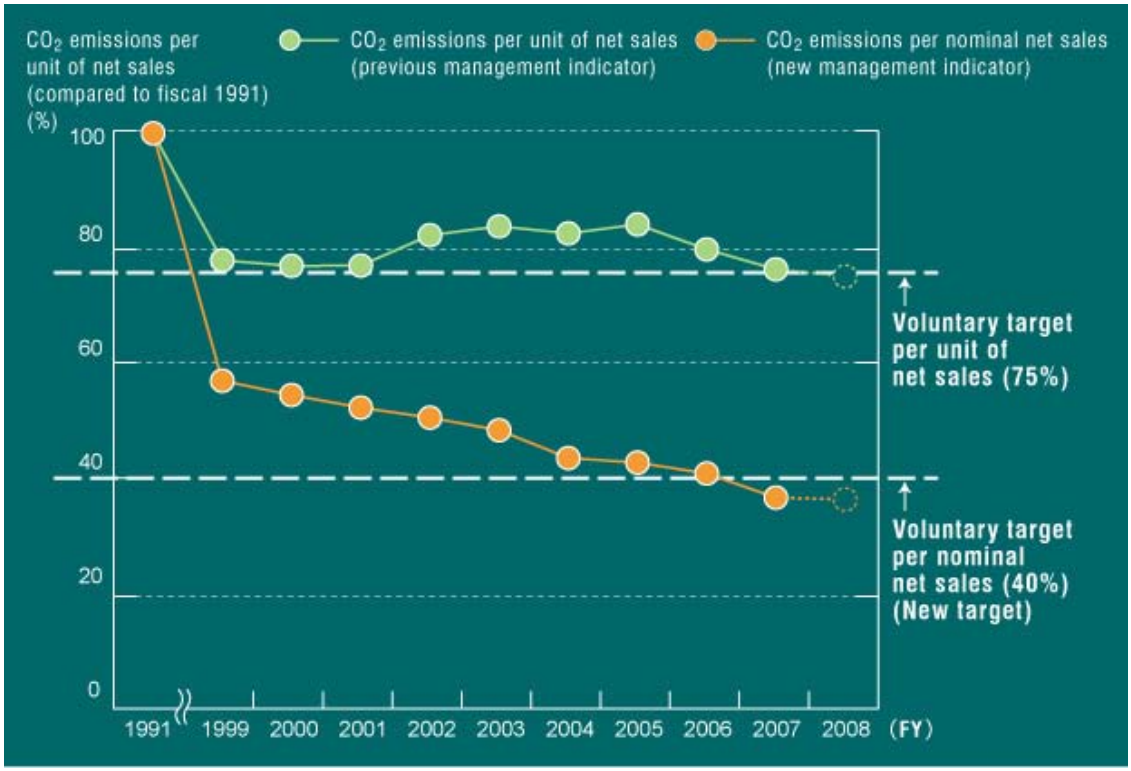
New CO_2 Emissions Reduction Target for Fiscal 2011

Reduce CO_2 emissions per unit of real net sales to 40% of fiscal 1991 levels (60% reduction) by fiscal 2011

CO_2 Emissions and CO_2 Emissions Per Unit of Net Sales



CO_2 Emissions Per Unit of Net Sales and Nominal Net Sales



MITSUBISHI ELECTRIC

Taking on the Challenge of Global Warming

Mitsubishi Electric CO_2 Emissions and CO_2 Reduction Efforts

Reduce CO_2 emissions by 46,000 tons by fiscal 2011 through aggressive investment in energy saving facilities

We will strive to meet this target by implementing an energy conservation action plan that calls for investing 0.1% of net sales in energy saving facilities

Mitsubishi Electric has set a target of reducing CO_2 emissions by 46,000 tons on a cumulative basis over the seven-year period from fiscal 2005 to fiscal 2011. Initiatives to achieve this target have been organized into an energy conservation action plan, which is comprised of the three strategies listed below. We have committed to making investments at a target annual rate of 0.1% starting in fiscal 2007. In fiscal 2007, we invested a total of ¥2.662 billion and reduced CO_2 by 10,052 tons. This is equivalent to 2.2% of the previous fiscal year's emissions. Since fiscal 2005, we have invested a cumulative total of ¥5.787 billion and have reduced CO_2 by 22,746 tons.

Reduction Target for CO_2 Emissions from Production Activities

Reduce by 46,000 tons-CO_2 over 7-year period from FY2005 to FY2011

CO_2 Reduction as of FY2007

22,746 tons-CO_2

1) Installation of high efficiency equipment

This strategy calls for proactively installing best-in-class products ("Top Runner products" (Note)) and other highly energy efficient equipment and devices (high efficiency transformers, high efficiency air conditioners, high efficiency lighting, inverter power sources, etc.). In fiscal 2007, we invested ¥2.481 billion and reduced CO_2 by 8,842 tons.

Note: Top Runner products are those that meet certain standards based on the "Top Runner" approach to setting performance standards established in the Law Concerning the Rational Use of Energy. The approach involves putting energy efficiency standards at, or above, the most energy efficient products currently on the market.

2) Energy Loss Minimization Activities

This strategy calls for making energy usage readily apparent at the factory production process level and facility level so that it can be tracked in real time and inefficient energy usage can be reduced. Making energy usage readily apparent involves installing energy measuring monitors, measuring energy usage in real time, converting the measurements to data and making the data easy to understand. The measurement data is shared over the Internet, which makes it possible to quickly detect waste or loss based on the data while tracking energy consumption. Waste and loss in standby power can also be detected. In fiscal 2007, we committed ¥156 million under this strategy and reduced CO_2 by 890 tons.

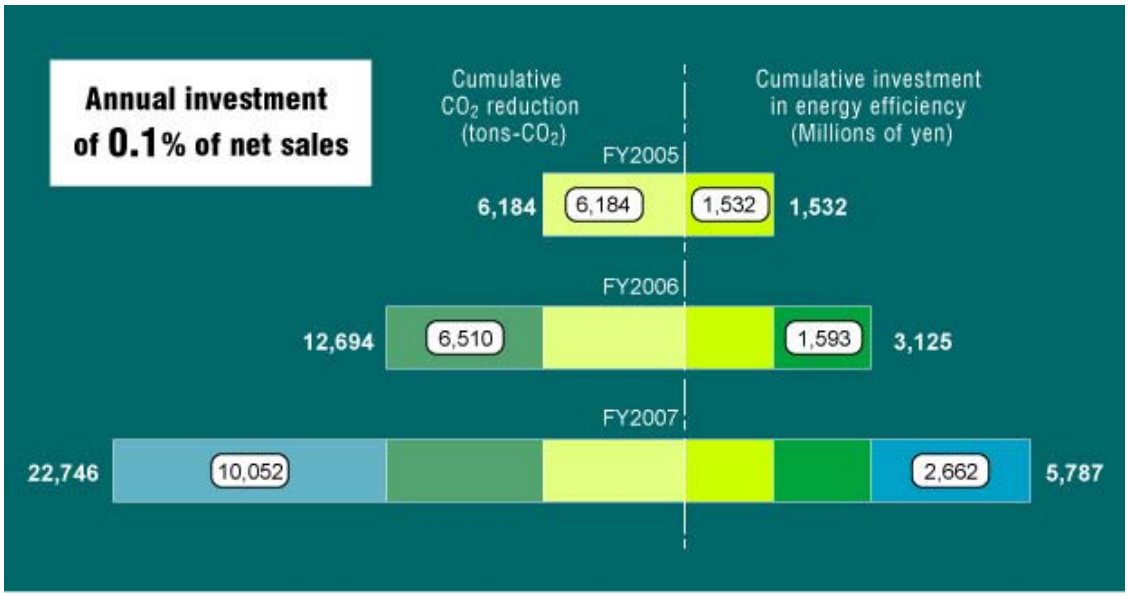
3) Shift to Alternative Fuels

Shifting to alternative fuels involves switching from fuel oil-fired boilers to gas-fired boilers. In fiscal 2007, we invested ¥25.0 million and reduced carbon dioxide by 320 tons.

Energy Conservation Action Plan Progress

Action Plan	FY2011 Reduction Target (tons-CO_2)	FY2005 Result		FY2006 Result		FY2007 Result		Cumulative Result		FY2008 Plan	
		Reduction (t-CO_2)	Investment (Millions of yen)	Reduction (t-CO_2)	Investment (Millions of yen)	Reduction (t-CO_2)	Investment (Millions of yen)	Reduction (t-CO_2)	Investment (Millions of yen)	Reduction (t-CO_2)	Investment (Millions of yen)
Installation of highly energy-efficient equipment	34,800	4,098	1,443	5,910	1,468	8,842	2,481	18,850	5,392	9,389	2,590
Energy-loss minimizing project	8,000	214	41	266	76	890	156	1370	273	759	94
Conservation to alternative fuels	3,200	1,872	48	334	49	320	25	2,526	122	52	40
Total	46,000	6,184	1,532	6,510	1,593	10,052	2,662	22,746	5,787	10,200	2,724
Cumulative	–	6,184	1,532	12,694	3,125	22,746	5,787				

CO_2 Reduction Achieved by Energy Conservation Action Plan (Investment)



MITSUBISHI ELECTRIC

Taking on the Challenge of Global Warming

Mitsubishi Electric CO_2 Emissions and CO_2 Reduction Efforts

Comments

We plan to achieve our targets by investing in energy efficiency, steadily implementing initiatives, and continuing to formulate effective strategies.

Kanji Ota,
Corporate Environmental Sustainability

I have been in charge of promoting energy conservation at Mitsubishi Electric since 2002. We started with the creation of detailed energy management ledgers for all of our production sites. This was because I reasoned that effective improvement measures could not be undertaken without finding out how much energy is used by facilities and equipment, including production facilities, motors, pumps, air conditioners and lighting. Take the coating process, for example. Energy is needed to create steam in order to remove oil from the coated surface and it is also needed to run the coating equipment. The ledgers were a low-key initiative, but I believe they eventually served as a shortcut. In creating the ledgers, we closely investigated installation dates and operating ratios for the equipment so that the information could also be used when considering facility upgrades.

These efforts led to the formulation of an energy conservation action plan and a program to create model, energy efficient factories. The energy conservation action plan is really an extension of efforts to update facilities so that they help to save energy and efforts to reduce loss by making energy usage readily apparent. The model factory program was started because we manufacture a large number of"Top Runner" products, such as transformers and air conditioners, which are on the cutting edge of energy efficiency, and we figured that, if we were to build factories using these products on a priority basis, it would not only improve energy efficiency but also provide customers with a view of the benefits of installing them.

We learned that investing in energy efficiency through implementing these strategies not only helps protect the environment but also serves to reduce production costs. Mitsubishi Electric has committed to investing 0.1% of net sales in environmental facilities annually, and as a result we are set to achieve our voluntary target--reducing CO_2 emissions per unit of net sales to 75% or less of fiscal 1991 levels by fiscal 2011--three years ahead of schedule. For fiscal 2011, we have established a more demanding target: a 60% reduction in emissions per nominal net sales compared to fiscal 1991 levels. I am convinced that we will achieve this goal through steady, persistent efforts and by continuing to formulate effective strategies.

MITSUBISHI ELECTRIC

Taking on the Challenge of Global Warming

Preventing Global Warming a Challenge for the Whole Group

Section 1

Factories and Offices

Case 1 Proactive Energy Conservation Through Managing Specific Consumption 【Fukuyama Works】

At Mitsubishi Electric's Fukuyama Works, which develops and manufactures power meters, breakers and other devices for power distribution and governing, we have long been actively engaged in environmental protection and energy conservation activities. One such activity is energy loss minimization, which centers on making energy usage readily apparent and easily grasped. Making full use of support devices for energy efficiency developed by Mitsubishi Electric, we manage energy usage (power, steam flows, etc.) in terms of specific consumption. This proactive energy conservation initiative seeks to improve energy productivity.

Note: Specific consumption is energy usage divided by production volume

Case 2 Conserving Energy by Raising Production Efficiency 【Air Conditioning and Refrigeration Systems Works】

As Mitsubishi Electric's chief air conditioning and refrigeration plant, the Air Conditioning and Refrigeration Systems Works, delivers a steady stream of highly reliable products that include air conditioning systems, such as multi-unit air conditioners for buildings and package air conditioners for facilities, and low-temperature products for industrial applications. The plant kicked off just-in-time reform initiatives in the second half of 2003 and is currently devoting itself to environmental JIT initiatives that seek to bring about energy conservation by improving productivity and eliminating barriers, irregularities, and waste in all processes.

MITSUBISHI ELECTRIC

Taking on the Challenge of Global Warming

Preventing Global Warming a Challenge for the Whole Group

Section 1 Factories and Offices

Case 1 Proactive Energy Conservation Through Managing Specific Consumption 【Fukuyama Works】

Demonstrating the Benefits of Energy Efficiency Products Using Our Own Factory

Fukuyama Works began full-fledged energy loss minimization (EM) activities in 1997. The aims of the activities were to give consideration to the environment and pursue economic efficiency, while at the same time demonstrating the benefits of support devices and systems for energy efficiency developed and manufactured by Mitsubishi Electric.

At that time, the sales division of Fukuyama Works listened to the concerns of many of our customers, who said that energy efficiency was definitely an important issue for them, but that greater energy efficiency would be meaningless if it caused decreased productivity. We were also asked what the actual benefits would be of installing support systems for energy efficiency, and customers would tell us that they would not be able to take the plunge without knowing what those benefits would be.

We were able to immediately show customers test data on the performance of individual energy efficiency support products. But the benefits of operating these products as a system cannot be demonstrated except on an actual production floor. We decided to conduct this demonstration on the floor of one of our own factories. It was a strategy with dual significance: we would work for environmental consideration and improved productivity by promoting energy conservation using Mitsubishi Electric products, and we would show customers the effectiveness of our products on an actual production floor.

MITSUBISHI ELECTRIC

Taking on the Challenge of Global Warming

Preventing Global Warming a Challenge for the Whole Group

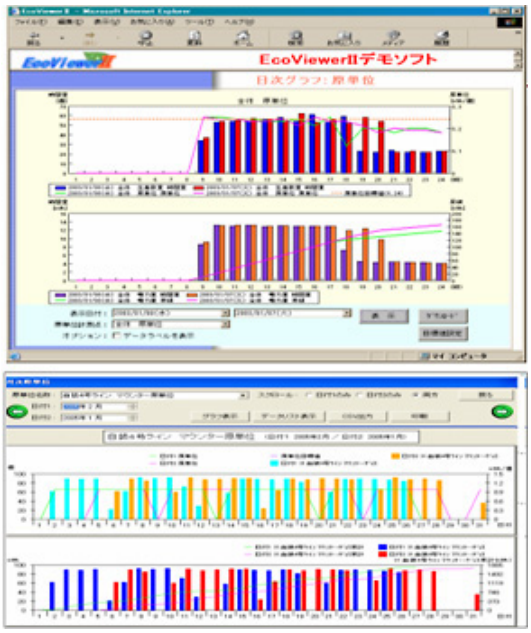
Section 1 Factories and Offices

Case 1 Proactive Energy Conservation Through Managing Specific Consumption 【Fukuyama Works】

Managing Specific Energy Consumption for Each Facility

The basis of energy conservation activities is tracking the current state of affairs on the production floor, which means measuring energy usage. At Fukuyama Works, we moved ahead by first clarifying power consumption by each division, then further refining the process to measure each shop (group) and each facility. We then made improvements, prioritizing shops and facilities that consumed the most power.

The graph shows specific consumption. It is not effective to make improvements on the basis of simple measurements of power consumption alone. Almost like a living organism, a production line is in constant state of flux. When production volume increases, energy consumption also naturally goes up. However, this increase alone does not necessarily amount to energy loss. Rather, it was crucial to discover when and where energy was being used inefficiently.



To do this we began tracking specific energy consumption. This involves managing energy usage using energy consumption per unit of production volume as an indicator. Detailed measurements of specific energy consumption for each division and each facility enable inefficiency and loss to be identified.

As a result of fully implementing improvement activities based on specific consumption in each division in accordance with ISO 14001 management techniques, we were successful in greatly improving energy efficiency and raising production efficiency over a short period of time. In 1998, the year after the project was launched, we were awarded the Energy Conservation Center, Japan Chairman's Award for Excellence in Energy Conservation. We also started a factory tour to actually show customers the benefits of energy conservation on the production floor.

Based on know-how acquired through promoting EM activities at our own factories, Fukuyama Works subsequently began developing devices and systems for efficiently and effectively supporting energy conservation.

MITSUBISHI ELECTRIC

Taking on the Challenge of Global Warming

Preventing Global Warming a Challenge for the Whole Group

Section 1 Factories and Offices

Case 1 Proactive Energy Conservation Through Managing Specific Consumption 【Fukuyama Works】

Fukuyama Works Employees Work Together to Develop Devices and Systems

In 1998 we developed the EMU Power Meter, which efficiently measures power consumption by individual facilities, and in 2000, we advanced the technology and developed the EcoMonitor, a multi-circuit power meter that simultaneously measures power over multiple circuits. We subsequently developed a series of industry-leading new device and software products designed to support energy conservation from novel perspectives. In 2002, we created EcoServer II, an energy efficient data collection server that handles everything from collecting energy efficiency data to transmitting it over the web. In 2003, we developed E-Energy, an energy efficient demand monitoring server that monitors and controls power demand.

In developing these products, we had employees in the factory's various divisions serve as monitors to verify their usability and workability from the customer's perspective, and provide valuable advice to the development division. All employees of Fukuyama Works truly came together to create these highly practical devices and systems.

EcoMonitor II
– A multi-circuit power meter

EcoServer II
– An energy efficient data collection server

E-Energy
– An energy efficient demand monitoring server

MITSUBISHI ELECTRIC

Taking on the Challenge of Global Warming

Preventing Global Warming a Challenge for the Whole Group

Section 1 Factories and Offices

Case 1 Proactive Energy Conservation Through Managing Specific Consumption 【Fukuyama Works】

Clarifying Areas of Improvement with Real-Time Measurement of Specific Consumption

These Mitsubishi Electric products are currently in operation all around Fukuyama Works. EcoMonitors have been installed on the power distribution boards of each facility to measure power consumption and production volume. This measurement data is sent to EcoServer II, which instantly calculates specific energy consumption. Trends in power consumption and specific consumption are graphed in an easy-to-understand manner so that they can be checked in real time via a LAN by the plant manager and division managers as well as by all other employees at their own computers.

On the basis of these efforts to make energy usage readily apparent, we have set targets for the factory as a whole, for each division, and at the production floor level for each product. We have also established systems for making specific improvements. In this way the entire process can be readily grasped.

If specific consumption worsens for some reason, the situation is checked against actual conditions on the production floor, which allows the causes, whether a setup mistake, equipment failure or idling machinery, to be immediately uncovered and appropriate improvement measures taken. Thoroughly eliminating energy loss in this way makes it possible to use the necessary energy for production at the necessary time, in the necessary places and in the necessary amounts -- a "just-in-time energy" system.

This initiative at Fukuyama Works has earned high praise from various quarters. In 2004, we received the Chugoku Bureau of Economy, Trade and Industry Director-General's Award for Excellence in Energy Conservation, and in 2006, we were honored with the Chugoku Bureau of Economy, Trade and Industry Director-General's Award for Outstanding Energy Conservation at Factories.

MITSUBISHI ELECTRIC

Taking on the Challenge of Global Warming

Preventing Global Warming a Challenge for the Whole Group

Section 1 Factories and Offices

Case 1 Proactive Energy Conservation Through Managing Specific Consumption 【Fukuyama Works】

Contributing to Society with Best-in-Class Energy Efficiency Support Devices

The challenge continues at Fukuyama Works. Since fiscal 2006, we have worked to more thoroughly and appropriately manage demand by linking E-Energy, our energy efficient demand monitoring server, with the G50, a web-compatible centralized controller for air conditioning developed by Wakayama Works. In addition, we have upgraded to high efficiency air conditioners in administrative buildings and made operational improvements that include automatic operational curtailment (rotation control), preset temperature restrictions, and prevention of shutoff oversights.

Fukuyama Works

As a result of these initiatives, in fiscal 2007, we successfully reduced energy consumption per unit of production output by 27% from fiscal 1991 levels. We have also been converting from fuel oil and LPG to electricity and city gas, and in fiscal 2007, we replaced heating equipment used for steam from models powered with fuel oil to models run on electricity. This served to substantially reduce fuel oil usage.

We intend to continue to make improvements and ramp up energy loss minimization activities in order to make all forms of energy, not just electricity, readily apparent and readily grasped, including fuel oil, steam, gas, air and water. Our goal is to have our production floors lead the pack in Japan. We hope that the initiatives taking place at Fukuyama Works will serve as a reference for many customers and that our expertise in this area will help customers promote energy efficiency at their own factories. This is another social contribution that Mitsubishi Electric can make.

A showroom at Fukuyama Works presents features of energy efficiency support and system outlines in an easy-to-understand manner.

MITSUBISHI ELECTRIC

Taking on the Challenge of Global Warming

Preventing Global Warming a Challenge for the Whole Group

Section 1 Factories and Offices

Case 2 Conserving Energy by Raising Production Efficiency 【Air Conditioning and Refrigeration Systems Works】

Environmental JIT (E-JIT) as a Symbol for Energy Conservation

The Air Conditioning and Refrigeration Systems Works has goals of reducing energy consumption per unit of production value by 25% from fiscal 1991 levels and reducing carbon dioxide emissions derived from energy by 2% every year. To achieve these goals the plant is engaged in energy conservation initiatives that center on saving energy with high-efficiency equipment, expanding the scope of JIT to include energy conservation activities, and installing energy efficiency support devices.

Of these initiatives, the plant is putting particular emphasis on expanding the scope of JIT to include energy conservation activities, an effort being promoted by each and every employee involved in production. The term JIT, short for "just in time," is normally used to mean having the necessary things in the necessary amounts at the necessary times. The Air Conditioning and Refrigeration Systems Works was the first of all our manufacturing plants to use Environmental JIT (E-JIT) as a Symbol for Energy Conservation activities. Saving energy does not mean not using energy; it means using it in the necessary amounts at the necessary times in the necessary places. Based on this thinking, the plant has adopted six perspectives-Change, Discontinue, Stop, Lower, Fix, Recover-that it uses to verify energy usage and carry out specific improvement initiatives.

Six Perspectives

Practicing Energy Conservation from Six Perspectives

MITSUBISHI ELECTRIC

Taking on the Challenge of Global Warming

Preventing Global Warming a Challenge for the Whole Group

Section 1

Factories and Offices

Case 2 Conserving Energy by Raising Production Efficiency 【Air Conditioning and Refrigeration Systems Works】

Case Example 1: Change

Practicing "Change," means changing facilities and energy. This section introduces three examples.

Updating to High-Efficiency Lighting

We replaced conventional rapid-start fluorescent lighting (40W) with highly efficient high-frequency (HF) fluorescent lighting (32W). HF fluorescent lights provide bright light while consuming less power, so we were able to reduce the number of lighting fixtures used. As an example, at our two-storey administrative office, lighting fixtures were reduced by 32%, from 377 to 256. The resulting energy savings exceeds 6,884 kWh per month. Changing the fixtures to pull switch models also succeeded in making employees more diligent about turning off the lights.

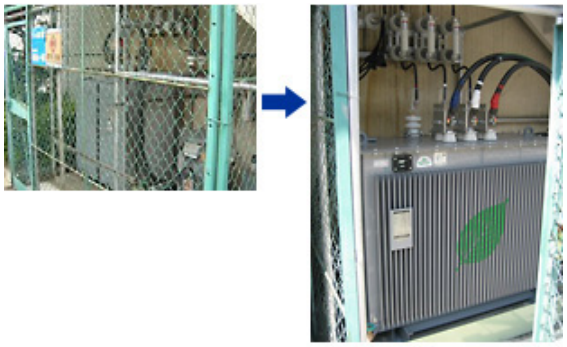
Rapid-start fluorescent light　　HF fluorescent lighting

Before: 377 fixtures　After 256 fixtures

32% reduction

Installing High-Efficiency Transformers

We replaced the transformers at onsite transformer substations with super high-efficiency models. We also installed automatic power factor adjustment devices that adjust the power factor in line with load fluctuations. This served to reduce power loss by 11.4%, from 257,653 kWh to 228,530 kWh.



Before: 257,653 kWh　After: 228,530 kWh

Power loss reduced by 11.4%

Converting to Alternative Fuels

Converting from fuel oil A and LPG, which have large CO_2 emissions coefficients, to city gas (13A), has enabled us to reduce CO_2 by 443 tons per year.

Ichiro Oka, Compressor Group Manager

Identifying and making as many improvements as possible eventually leads to major energy savings. For example, on the compressor processing line there are some 100 processors. Changing the indicator lights on the machines, which are green, orange and red, from incandescent lights to LED alone allowed us to save around ¥300,000 a year in electricity charges.

Juichi Asobe, Unit Group Manager

E-JIT means more than just energy conservation; it also involves reducing waste. For example, to improve packaging, we stopped using materials packaged with cardboard and PP-band and switched to having the materials supplied on dollies without packaging. Just one innovation with packaging materials can generate big savings. We plan to keep working on a variety of E-JIT initiatives.

MITSUBISHI ELECTRIC

Taking on the Challenge of Global Warming

Preventing Global Warming a Challenge for the Whole Group

Section 1 Factories and Offices

Case 2 Conserving Energy by Raising Production Efficiency 【Air Conditioning and Refrigeration Systems Works】

Case Example 2: Discontinue

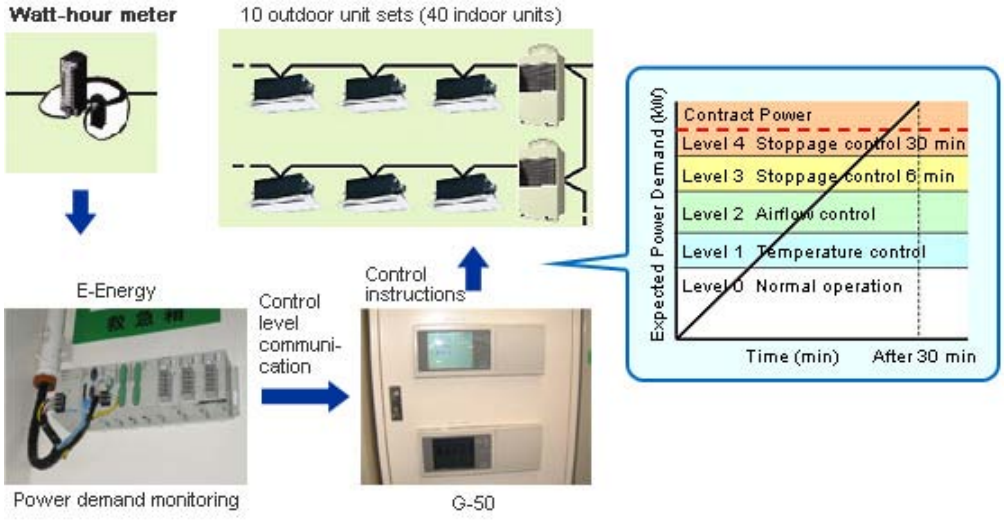
"Discontinue" refers to discontinuing unnecessary practices and operations. Two examples are introduced here.

Thinning Out Onsite Lighting

Surveying the plant surprisingly turned up areas where lighting was unnecessary. We thinned out fluorescent lighting in places where people are not engaged in work and limited lighting to only places where it is necessary. We removed 433 of the four factories･f 1979 total lights, saving some ¥935,000.

Conserving Energy Through Automatic Air Conditioning Control

We use a centralized air conditioning controller, G-50, and a demand monitoring server, E-Energy, which are both made by Mitsubishi Electric. They allow us to remotely monitor air conditioning with use of a computer and preset an operating schedule. Air conditioning is automatically controlled, including heating and cooling, airflow and stoppage, in line with the level of demand. This enables us to limit power usage and lowers our basic electricity bill.



Nobuyoshi Miyamoto, Stock Management Group Manager Waryo Technica Co., Ltd.

We store a wide variety of parts in the parts warehouse. Before, we stored these parts on automated racks, but in order to comply with short schedule, multi-cycle production and reduce excess stock through greater transparency, we eliminated the automated racks and switched to fixed shelves. The shelves are currently laid out to make everything easy to see and we work to keep things organized, orderly and clean. If the workplace is clean and well organized, abnormalities are readily spotted. When abnormalities are known, improvements can be made.

MITSUBISHI ELECTRIC

Taking on the Challenge of Global Warming

Preventing Global Warming a Challenge for the Whole Group

Section 1 Factories and Offices

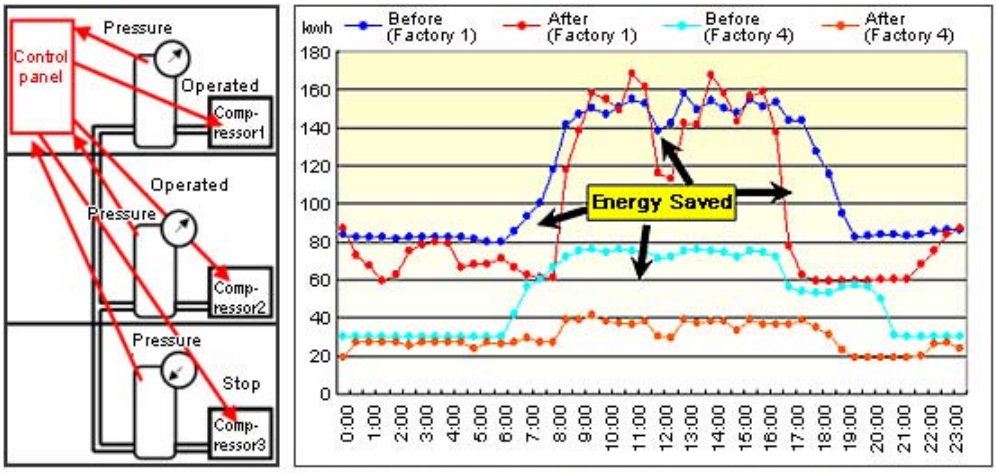
Case 2 Conserving Energy by Raising Production Efficiency 【Air Conditioning and Refrigeration Systems Works】

Case Example 3: Stop

"Stop" refers to stopping wasteful operations. Two case examples are introduced here.

Limiting Numbers of Air Compressors in Operation

We linked air compressors on each level through a control panel in an effort to save energy by automatically turning the compressors on or off depending on pressure standards. At Factory 1 and Factory 4, which use the control system, we succeeded in reducing annual energy consumption by 452,745 kWh, producing economic benefits of ¥6.97 million.



Before: 2,117,610 kWh After: 1,664,865 kWh Reduction of 452,745 kWh

Energy Savings Day on Second Saturday of Every Month

On the second Saturday of every month, we cut the electricity to circuits for which it is possible to do so.

Breakers that have been turned off are labeled as such to indicate energy savings.

Yasushi Takeda, Parts Group Manager

I am responsible for production of metal parts, plastic parts, valves for cooling circuits and other parts. These parts are completed after passing through a number of processes. In order to shorten lead times and reduce the work involved, we are working to consolidate processes. Our goal is to connect pre-processing and post-processing, eliminate intermediate processes and convert to single-item manufacturing in order to have the necessary items in the necessary amounts at the necessary times. Transport and parts back ups have been eliminated, which has served to substantially increase productivity. This E-JIT initiative has also made a significant contribution to energy conservation.

MITSUBISHI ELECTRIC

Taking on the Challenge of Global Warming

Preventing Global Warming a Challenge for the Whole Group

Section 1 Factories and Offices

Case 2 Conserving Energy by Raising Production Efficiency 【Air Conditioning and Refrigeration Systems Works】

Case Example 4: Lower

"Lower" refers to our efforts to lower pressure and air conditioning loads. Three examples of this initiative are introduced here.

Changing the Hydraulic Oil Used in Resin Molding Equipment

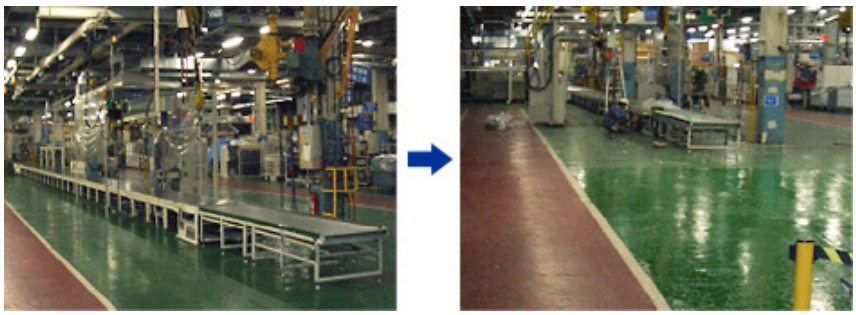
At the Air Conditioning and Refrigeration Systems Works, we switched to a low viscosity, low specific gravity hydraulic oil (in consultation with the manufacturer) in order to reduce the amount of power consumed by resin molding processes. Switching to a different oil reduced pressure loss in the equipment piping as well as power consumption when starting up the equipment. In terms of energy savings, we reduced power consumption by 13% on a per-hour basis. Switching oils has benefited us in another way as well. The previous oil was classified as a hazardous substance, but the new type is non-hazardous, so its handling is more straightforward.

Coating Roofs with a Reflective Paint

We coated our factory roofs with a reflective paint in order to reduce the air conditioning load and confirmed a drop in room temperatures directly below the roof of around two to three degrees. In terms of outdoor temperature, this would be equivalent to moving the factory from Wakayama north to Aomori. Based on our estimates, the power load from cooling has been reduced by around 7%.

Shortening Assembly Conveyors and Instituting a Dolly-Based Production System

The workflow for parts and product assembly normally involves the use of conveyors. At the Air Conditioning and Refrigeration Systems Works we substantially shortened conveyor length by closing gaps between work processes. This was a part of our E-JIT reform initiative and involved having the necessary things in the necessary places at the necessary times. We also introduced a dolly-based production system in which assembly takes place on top of moving platforms without the use of conveyors. The system was introduced in order to make it easier to accommodate changes in production volume, to better balance the burden among workers, and to shorten manufacturing lead times. These productivity improvements also make a substantial contribution to energy conservation.



Yutaka Maeda, Cooling Group Assistant Manager
Waryo Technica Co., Ltd.

Waryo Technica, which is contracted to produce some of the product lines at Mitsubishi Electric's Air Conditioning and Refrigeration Systems Works, is actively involved in E-JIT.

Improving productivity and closing gaps between processes to shorten assembly conveyors has lessened power costs, reduced onsite lighting and otherwise helped save substantial amounts of energy. We are currently working to have parts delivered from suppliers without packaging to save resources and reduce waste.

MITSUBISHI ELECTRIC

Taking on the Challenge of Global Warming

Preventing Global Warming a Challenge for the Whole Group

Section 1 Factories and Offices

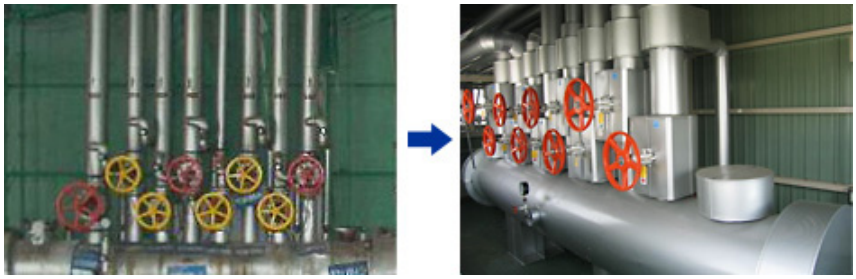
Case 2 Conserving Energy by Raising Production Efficiency 【Air Conditioning and Refrigeration Systems Works】

Case Example 5: Fix, Case Example 6: Recover

"Fix" involves working to conserve energy by fixing defective areas.

Replacing Worn Out Steam Piping

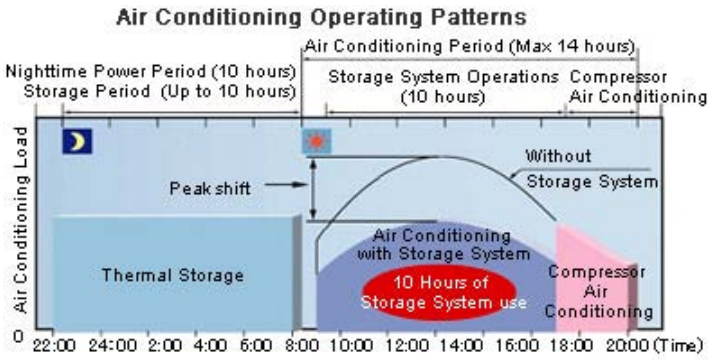
At the Air Conditioning and Refrigeration Systems Works, we replaced and reinstalled worn out steam piping and steam headers, which reduced the amount of city gas used by steam boilers by 2%.



"Recover" refers to activities to recover energy from waste. Three examples of these activities are introduced here.

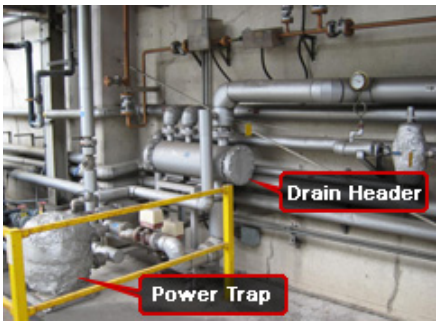
Installing Ice-Thermal Storage Air Conditioning Units

We installed ice-thermal storage air conditioning units to shift and reduce peak power usage. The units use inexpensive power at night to make ice and hot water that is used in the daytime for cooling and heating.



Heating Soft Water for Boilers by Recovering Steam Drain

We recover heat trapped in condensation from saturated vapor after production process work has been completed and reuse it to heat soft water used in city gas through-flow boilers. Doing so reduces the amount of city gas used by the boilers by 3% and raises the soft water temperature from 40-45° C, what it was before installation of the system, to 57-83° C.



MITSUBISHI ELECTRIC

Taking on the Challenge of Global Warming

Preventing Global Warming a Challenge for the Whole Group

Section 1 Factories and Offices

Case 2 Conserving Energy by Raising Production Efficiency 【Air Conditioning and Refrigeration Systems Works】

Active Promotion of E-JIT

The Air Conditioning and Refrigeration Systems Works is progressively conserving more energy by steadily carrying out activities on the basis of six perspectives. In fiscal 2007, we reduced energy consumption per unit of production value to 67% of fiscal 1991 levels (for a 37% reduction). The plant is not only involved in energy conservation but also in promoting E-JIT activities for the environment more broadly.

To reduce releases of harmful substances, we have begun using coatings with low solvent content. We developed a specialized thinner for use in solvent coatings and reduced the volume of toluene and xylene, both of which are classified as harmful substances, by half. Completely eliminating harmful substances would be ideal, but inadequate coating performance (rust resistance) would be problematic. So, we opted for low-solvent coatings instead of seeking to completely eliminate the chemicals. This has reduced our use of toluene and xylene by 1,300 kg annually.

Also, in an effort to reduce waste, we switched to translucent waste receptacles to make it possible for people to see what has been thrown out and made sorting waste more straightforward. We are also working to eliminate cardboard by switching to reusable pallets to transport a variety of materials.

Our watchword will continue to be E-JIT, and we will continue to make improvements, with every employee acutely aware of environmental issues, in order to conserve energy and help protect the environment.

Comments of Environment Control Section Members Responsible for Promoting Environmental E-JIT

Akira Hattori, Manager

The essence of E-JIT is doing things quickly. This means not taking our time and shooting for 100%, but doing things immediately because 50% is also good. We are working to entrench this way of thinking throughout the plant and raise the level and speed of improvements.

Mikio Hisamura

Making large capital investments is one way of bringing about energy savings, but steady, everyday improvement efforts are also important. Making steady improvements day to day also fosters an environmental mindset.

Shusei Tsumori

The six perspectives of Change, Discontinue, Stop, Lower, Fix and Recover are important in promoting greater energy conservation. Constantly thinking about which perspectives apply will inevitably lead to innovations.

MITSUBISHI ELECTRIC

Taking on the Challenge of Global Warming

Preventing Global Warming a Challenge for the Whole Group

Section 1 Factories and Offices

Feature

Participation in a Project for Sustainable Urban Development

Toward a Sustainable City: Participation in the Ecozzeria Project, A Base for Environmental Strategy in Marunouchi

Mitsubishi Electric participates in an environmental project centered on Ecozzeria, a base for environmental strategy established in the Shin-Marunouchi Building in the spring of 2007. Ecozzeria works to bring about environmentally harmonious urban development together with energy providers and other environmentally progressive companies located in the Marunouchi area of Tokyo. Below, staff members from Mitsubishi Estate Co., Ltd., which started the project, and Mitsubishi Electric discuss their thoughts on Ecozerria and expectations for the future.

Shigeru Inoue
Assistant General Manager
Area Planning Office
Mitsubishi Estate Co., Ltd

Tetsuya Oumi
Manager,
Environmental Unit
Area Planning Office
Mitsubishi Estate Co., Ltd.

Yoshiyuki Tsutsumi
General Manager
Marketing Research & Business Development Dept.
Corporate Marketing Group
Mitsubishi Electric Corp.

Kazuo Kanasawa
Marketing Research & Business Development Dept.
Corporate Marketing Group
Mitsubishi Electric Corp.

Kanji Ota
Corporate Environmental Sustainability Group
Mitsubishi Electric Corp.

Creating Infrastructure and Knowledge for Environmentally Harmonious Urban Development from an Eco Plaza

Tsutsumi : For some time now, Mitsubishi Electric has received advice and guidance from Mitsubishi Estate with respect to our urban development ideas. Ecozerria really is a project based on an extremely novel concept.

Oumi : The aim of Ecozerria is really as its name suggests: to be a plaza for environmental ideas. By allowing various people, objects, ideas and information to mingle here, we hope to create new technologies and systems for environmentally harmonious development.

Tsutsumi : Ecozerria calls to mind a salon, doesn't it, where many people can interact and freely exchange ideas. The space truly differs from a regular meeting room; it is filled with plants and seems to spur the imagination. I get the sense that discussing things in a place like this would produce novel ideas.

Inoue : It is fortunate that the Marunouchi area is home to many companies engaged in progressive environmental initiatives. They say two heads are better than one, so we felt that having these progressive companies brainstorm together would help generate infrastructure and knowledge that would benefit environmentally harmonious urban development in the future. We reached out to Mitsubishi Electric because of its leadership in this area.

Kanasawa : Thank you. When Mitsubishi Electric heard about the project, we very much wanted to participate. Because environmental initiatives engaged in by just a single company have a limited impact.

Tsutsumi : For several years now, Mitsubishi Electric has been promoting environmental activities not only for factories and offices but also from an urban development perspective. This project provides us with an opportunity to try and apply our accumulated technologies and expertise to a new field.

Ecozerria

Ecozerria was established on the tenth floor of the Shin-Marunouchi Building in May 2007. Its name was coined from the words "ecology," "plaza" and "area." The facility is broadly composed of two areas, a "Communication Zone" in the front and a "Salon Zone" in the back. The spaces are ambitiously adorned with materials that spur thinking about environmental harmony, like recycled and reused furniture from Japan and abroad, and indoor green areas that include vegetation growing on the walls.

→ Ecozerria's website

New Forms of Environmental Communication with a Multi-User "Touch Table"

Inoue : Actually, one of the areas we hope that Mitsubishi Electric can help in is making environmental initiatives and their benefits readily apparent. It is important to make readily apparent such benefits as a feeling of coolness when walking through the streets compared to two or three years ago. Right from the beginning we hoped that Mitsubishi Electric would be able to provide exceptional technology and expertise for this type of making readily apparent.

Kanasawa : I think the multi-user touch table (Note) in the Communication Zone was the first product that came from thinking together about making information readily apparent.

Oumi : Yes, that's right. We originally had the idea of creating a space where everyone could search for information together. We didn't want visitors sitting behind computers alone by themselves, so we searched for a device that would enable the people gathered in the space to engage the information on the screen in a two-way manner while openly having discussions about it.

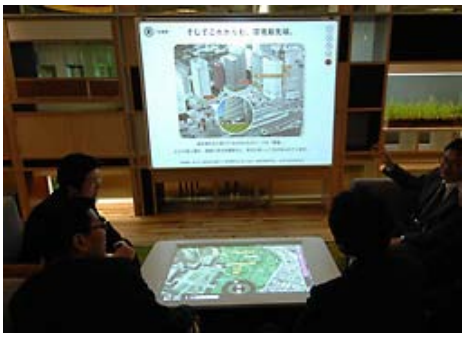
Tsutsumi : And you ended up finding the multi-user touch table.

Oumi : Yes. With the table, everyone is able to travel to the same area and search spots that they are interested in. Moreover, by plotting information related to the area, we thought it would be possible to create a virtual tour unlike any before.

Tsutsumi : The multi-user touch table was developed by our U.S. research center in Boston. Kamakura Works is developing it to make it practically viable as a system for facilitating decision making by leaders involved in disaster response. It allows simultaneous input and output operations by multiple users, is used in research applications at universities and other institutions in Japan and the U.S., and has just started to be used for government purposes here at home. Frankly we were surprised when you discussed with us the possibility of loading it with environmental software and adapting it for general use.

Oumi : But, expanding multi-user touch tables to the private sector was a welcome development for us as well, and we are more than happy to be able to use it in an environmental application.

Tsutsumi : No, we should thank you.



Multi-User Touch Table

A multi-user touch table is a table with a tabletop interface that enables the simultaneous participation and collaboration of many people. It is trademarked in the U.S. under the name DiamondTouch

Exploring the Development History of an Area and Environmental Initiatives Across Time and Space

Oumi : The software used in the multi-user touch table is still in the prototype stage, but we are developing data on an experimental basis to map changes in the Marunouchi area over the past 400 years in an attempt to make a kind of time machine that allows you to move back and forth across time and space.

Ota : So that will allow a person to directly understand the development history of a place and changes that have occurred in the environment. Even though it is a prototype, the software is still really fun. Being able to go back over the history of the place brings about new discoveries and a sense of affection for the place. I think this would also spur new ideas.

Oumi : In addition to the time machine function, plotting projects currently underway and future plans on the map will create a type of virtual eco museum. I also have hopes that the device will help in teaching people about the environment. They will study images first on the map, then go outside and see the real thing.

Tsutsumi : This is a really fresh approach that can be applied to many different things. For example, the area could be expanded to Tokyo as a whole, or tours could be planned for other cities like Osaka or Nagoya. We are grateful to you for opening up all these possibilities for communication on the environment.

Inoue : Not only the multi-user touch table, but also features like the space that displays data from instruments set up in the Maruouchi area in real time on a sand screen were made possible by the technical assistance provided by Mitsubishi Electric.

Kanasawa : Mitsubishi Electric will of course continue to help with technology, but even after the technologies have been implemented, we want to help with planning and other ideas, like what kind to data to gather and display.

Inoue : We would very much welcome your help. Because Mitsubishi Electric has an amazing storehouse of know-how in the field of the environment, we would very much like to see you move forward on a making readily apparent project for this.

Connecting CSR Activities Horizontally Across Companies for Unprecedented Scale

Inoue : Ecozerria will be managed from now on by an intermediary organization, the Daimaruyu Environmental Urban Development Promotion Association, but I would like to involve as many people as possible; not as a forced endeavor, but by creating mechanisms that will bring people together naturally.

Tsutsumi : I think using an intermediary organization that is neither tenant nor owner is a first for Japan and it may well end up being the model for environmental measures in Japan's commercial districts. I have high expectations for this project in this sense as well.

Oumi : For example, we can only make progress in building energy efficiency in common areas that we manage. How to improve energy efficiency in areas of the building used exclusively by tenants is an important issue. As a tenant, we hope that Mitsubishi Electric will play a leading role in this area.

Ota : This is because we have made significant progress over the past several years in energy conservation at offices. We would like to use our involvement in this project as an opportunity to demonstrate in the Marunouchi area what we have accomplished.

Inoue : As a developer, this space is a way to help our tenant companies in their business development efforts, and it would be wonderful if, as a result, it would also contribute to society in other ways.

Oumi : If the CSR activities of various companies were to be connected with each other horizontally, I think it would lead to major, unprecedented accomplishments, something we would like to be involved in creating. Kind of like taking the "C" in CSR and changing its meaning from "company" to "community."

Tsutsumi : CSR as "community social responsibility." That is just the sort of progressive project we want to be involved in. Thanks to everyone for today's discussion.

MITSUBISHI ELECTRIC

Taking on the Challenge of Global Warming

Preventing Global Warming a Challenge for the Whole Group

Section 2

Logistics

From Just-in-Time Logistics to Eco-Logistics for Products

The Mitsubishi Electric Group is carrying out activities to reduce CO_2 emissions from product (sales) transport and reduce usage of disposable packaging materials. We refer to these activities as "eco-logistics" (Note). Reducing CO_2 emissions involves first of all promoting a modal shift, which means switching from truck transport to rail and ocean transport, which have less environmental impact. It further entails building integrated international transport systems that combine ocean and rail transport as well as developing new loading techniques and expertise. Reducing usage of disposable packaging materials consists of promoting use of lighter weight, more compact packaging, beginning at the product development stage. We are striving to carry out these multifaceted initiatives, which think not only from the standpoint of logistics but also as a part of improvements using production technology that are being made to our just-in-time logistical systems.

Note: Eco-logistics refers to both ecological and economical logistics processes. The aim of the program is to create environmental logistics systems that minimize costs by linking logistical improvements with activities to minimize environmental impact.

Launching Eco-Logistics Centering on Modal Shift

Reducing CO_2 Emissions from Logistics While Cutting Distribution Costs

Effective, Efficient Transport with Containers Developed to Match Product Shapes

Developing Integrated International Transport Systems and Measures Beyond Modal Shift

Reducing Usage of Disposal Packaging Through Environmental Considerations that Start at Product Design

Setting New Targets and Taking on the Challenge of Just-in-Time Logistics

MITSUBISHI ELECTRIC

Taking on the Challenge of Global Warming

Preventing Global Warming a Challenge for the Whole Group

Section 2 Logistics

From Just-in-Time Logistics to Eco-Logistics for Products

Launching Eco-Logistics Centering on Modal Shift

The Mitsubishi Electric Group began initiatives in this area in 1993 with efforts to reduce usage of polystyrene foam under our 1st Environmental Plan. Broader environmental activities that included efforts to reduce CO_2 emissions in product transport got their full-fledged start in 2002. Under the 4th Environmental Plan, which began in 2003, we began programs to reduce CO_2 emissions from product transport based on the concept of "eco-logis," an in-house phrase meaning economical and ecological logistics, and set a target of reducing carbon dioxide emissions by 20% per unit of shipping weight by fiscal 2006 compared to fiscal 2003.

Modal shift is our basic eco-logistics strategy for reducing CO_2 emissions in product transport. Modal shift refers to switching from truck transport to rail and ship, which have less environmental impact. There were a number of problems that needed to be solved, however, in order to advance this strategy.

One problem was ensuring quality. With rail transport, products are put into containers and placed on railcars, so boxes tend to rub up against the container walls and stacked products tend to fall due to the vibration and jolting of the train. In order to prevent these problems and ensure quality during distribution, we developed a number of ideas and innovations. In particular, for loading cardboard boxes, we pack them from the back of the container forward without leaving any empty space and hold them in place with a belt so the products positioned on the door side do not move during transport. We also load boxes tightly against the container walls and insert air-packing materials into open spaces to eliminate any gaps.

With rail transport, measures must be taken to prevent stacked cargo from collapsing due to vibration, etc.

Mitsubishi Electric innovation to ensure logistics quality

Stacks of cardboard containers susceptible to collapsing are secured with a belt to ensure the products do not move during transport.

Products are packed in tight and air-packing material is inserted to eliminate gaps in open spaces.

MITSUBISHI ELECTRIC

Taking on the Challenge of Global Warming

Preventing Global Warming a Challenge for the Whole Group

Section 2 Logistics

From Just-in-Time Logistics to Eco-Logistics for Products

Reducing CO_2 Emissions from Logistics While Cutting Distribution Costs

The issue of cost is significant. The "eco" in eco-logistics also refers to economical, and a major goal was to reduce CO_2 emissions by switching from truck transport, while at the same time maintaining or cutting costs.

The cost of rail transport includes both rail charges, and collection and delivery charges for truck transport to and from the rail terminal.

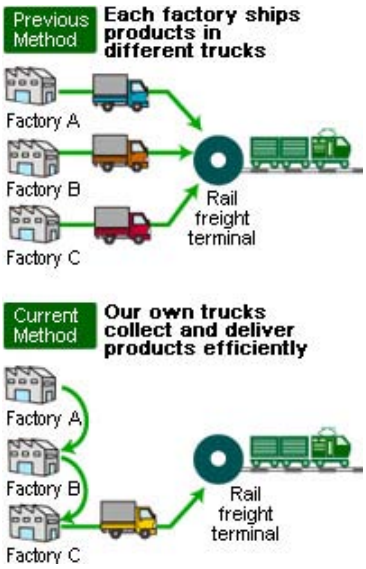
However, the transport distance for the truck portion of the Tokyo to Osaka route totals 20 kilometers and the distance for the rail portion is 600 kilometers, giving a 1:30 ratio. However, the transport cost ratio is 4:6, meaning the relatively expensive truck segment was pushing up overall costs.

In order to resolve this problem, manufacturing plants involved in industrial automation systems had distribution companies within the Group deploy dedicated collection and delivery trucks to handle loading and delivery processes that had been contracted out to delivery companies. We also switched to roundtrip transport between efficient train stations in line with the timing of factory shipments. In this way, we worked to reduce both CO_2 emissions and costs.

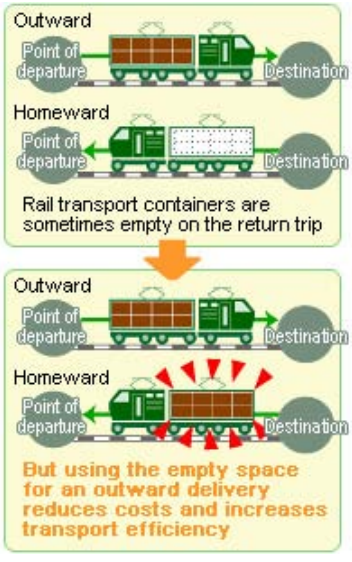
For the rail transport portion, we also began using containers that were on their way back after delivering the products of other companies in order to further reduce CO_2 emissions and cut costs.

Cost Measures Also Necessary to Accelerate Modal Shift

Innovations by Mitsubishi Electric to Reduce Transport Costs



Loading as much as possible in one container serves to reduce costs



Using containers returning after transporting other companies' products serves to reduce costs.

MITSUBISHI ELECTRIC

Taking on the Challenge of Global Warming

Preventing Global Warming a Challenge for the Whole Group

Section 2 Logistics

From Just-in-Time Logistics to Eco-Logistics for Products

Effective, Efficient Transport with Containers Developed to Match Product Shapes

Loading efficiency is an important issue in promoting modal shift. It is an issue that is also closely connected to cost.

The 12-foot rail container (normally called the five-ton container) is the standard type of container used in rail transport. Three 12-foot containers have a loading capacity equivalent to one large ten-ton truck. In actuality, however, it is often the case that one truck's worth of cargo cannot simply be reloaded into three containers due to the size and shape of the products being transported. In order to solve this problem, we have begun using 31-foot containers, which allow the contents of a ten-ton truck to be directly reloaded into the rail container.

We currently use the larger containers to transport room air conditioners and refrigerators from Shizuoka Works to the Kyushu Logistics Center (Tosu, Saga Prefecture) and washing machines from Nihon Kentetsu (Funabashi, Chiba Prefecture) to the Kansai Logistics Center (Kobe, Hyogo Prefecture) and Kyushu Logistics Center.

In addition, logistics divisions have been promoting an effective modal shift by developing new types of containers that match product and packaging shapes along with new ideas on how to load the products.

As a result of these efforts, our Living Environment & Digital Media Equipment Group was certified as an "Eco-Rail" company (Note) in September 2005 by the Railway Freight Association.

Note: A company that manufacturers consumer products and has been certified by the Railway Freight Association for using rail for at least 15% of ground shipments of 500 km or more (rail and truck) on a per-company basis or for at least 30% on a per-product basis.

Rail containers must have a loading efficiency equivalent to trucks

Mitsubishi Electric innovation to improve loading efficiency

We introduced 31-foot containers allow cargo contained in a ten-ton truck to be directly reloaded into the container.

We developed a new ultra-high container for transporting products in 2.4-meter-high packaging.

MITSUBISHI ELECTRIC

Taking on the Challenge of Global Warming

Preventing Global Warming a Challenge for the Whole Group

Section 2 Logistics

From Just-in-Time Logistics to Eco-Logistics for Products

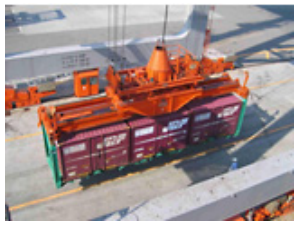
Developing an Integrated International Transport System and Measures Beyond Modal Shift

Mitsubishi Electric is carrying out various eco-logistics activities in addition to modal shift initiatives. One such activity is addressing environmental issues in global logistics, which has been growing in scale due to ongoing globalization. For example, for logistical operations between China and Japan, we built an integrated international transport system that uses 12-foot rail containers. When products are transported from China for sale in Japan, three 12-foot containers are combined on a flat rack specially designed for that purpose so that they can be shipped by sea just like a 40-foot ocean container. When the cargo reaches port, the three 12-foot rail containers are split apart at the cargo terminal and shipped by rail to distribution centers located in close proximity to where the products will be sold. By seamlessly linking ocean transport and rail transport, this system makes it possible to transport small lots with high frequency internationally.

Logistics divisions have also implemented a number of other measures to simultaneously reduce both costs and CO_2 emissions, including unloading cargo at ports closest to where the imported products will be sold, raising truck loading efficiency by loading and unloading in multiple locations, developing products and packaging that take into account loading rack dimensions, and routing deliveries through hubs using distribution centers.

Rail containers must have a loading efficiency equivalent to trucks

Mitsubishi Electric innovation for transporting high-frequency small-lots internationally



Three 12-foot containers are loaded onto a flat rack that is transported by sea just like a 40-foot ocean container. After reaching port, the rack is spit back up into the three containers, which are then transported by rail.

MITSUBISHI ELECTRIC

Taking on the Challenge of Global Warming

Preventing Global Warming a Challenge for the Whole Group

Section 2 Logistics

From Just-in-Time Logistics to Eco-Logistics for Products

Reducing Usage of Disposal Packaging Through Environmental Considerations that Start at Product Design

Our efforts to reduce usage of packaging materials began with reductions to polystyrene foam under our 1st Environmental Plan in 1993. During the period from the 2nd Environmental Plan in 1996 and the 4th Environmental Plan, we made progress in reducing total usage volume for all types of packaging materials.

Recently, we have been switching to packaging that takes into account the 3R program (reduce, reuse and recycle) being led by the Ministry of Economy, Trade and Industry out of consideration for the environment. Mitsubishi Electric works to integrate transport and storage considerations into product design. Packaging is separated into reusable and disposable at the design stage.

In order to minimize the use of disposable packaging, we have been working to make it lighter and more compact. An example of our improved packaging was submitted to the Japan Packaging Contest organized by the Japan Packaging Institute and honored with an award.

Disposable packaging must be reduced in order to effectively use resources

Mitsubishi Electric innovation to reduce use of cardboard materials

Packaging for semiconductor power modules tends to be excessively large in order to prevent impact during delivery. We designed a new package that supports the products with cutout cardboard rolled into cylinders. We succeeded in making the packaging more compact and reducing cardboard usage by 51%.

MITSUBISHI ELECTRIC

Taking on the Challenge of Global Warming

Preventing Global Warming a Challenge for the Whole Group

Section 2 Logistics

From Just-in-Time Logistics to Eco-Logistics for Products

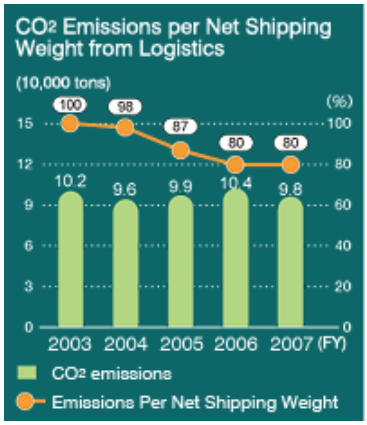
Setting New Targets and Taking on the Challenge of Just-in-Time Logistics

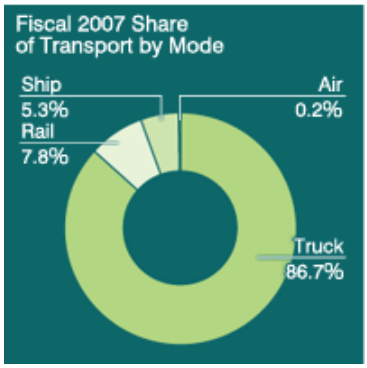
The Mitsubishi Electric Group has now started carrying out initiatives under our 5th Environmental Plan, which has a target year of fiscal 2009. While engaged in eco-logistics activities, logistics divisions are working to achieve even loftier goals, which include reducing CO_2 emissions from product logistics per unit of shipping weight by 30% by fiscal 2009 compared to fiscal 2003 levels, reducing disposable packaging per unit of shipping weight by 10% by fiscal 2009 compared to fiscal 2005 levels, and further reducing wood packaging materials.

In fiscal 2007, we reduced CO_2 emissions from product logistics by 20% and disposable packaging by 10%.

But the challenge goes on. We are working to horizontally expand best practices, including modal shift, building integrated logistics systems that incorporate ocean transport, and promoting lighter, smaller packaging, in an effort to achieve targets at factories and affiliates.

Our ideal is just-in-time logistics, which involves transporting the necessary goods at the necessary times in the necessary amounts with minimal packaging. In order to accomplish this, Mitsubishi Electric will work to make transport processes readily apparent, thoroughly eliminate inefficiencies, and coordinate with our many business partners to reduce CO_2 emissions and usage of disposable packaging.





MITSUBISHI ELECTRIC

Taking on the Challenge of Global Warming

Preventing Global Warming a Challenge for the Whole Group

Section 3 Products

Case 1 Room Air Conditioner with Energy Conservation Sensor

Air conditioning accounts for around 25% of household power consumption, the most of any appliance. The energy efficiency of appliances is improved with each passing year, but there are limits. Given this situation, Mitsubishi Electric has developed technology that makes it possible to conserve electricity based on how appliances are used. Our human-sensing energy conservation sensor simultaneously detects where people are located in a room and the floor temperature in order to conserve energy.

Case 2 Photovoltaic Power Generation System

Photovoltaic power generation involves producing electricity from solar energy. Such systems make clean energy, meaning they produce power without giving off CO_2, the cause of global warming. As a manufacturer engaged in start-to-finish production, Mitsubishi Electric has been working to increase generating efficiency for the entire system, from solar cells to power conditioners.

MITSUBISHI ELECTRIC

Taking on the Challenge of Global Warming

Preventing Global Warming a Challenge for the Whole Group

Section 3 Products

Case 1 Room Air Conditioner with Energy Conservation Sensor

High Levels of Air Conditioning Comfort and Energy Efficiency

28° C for cooling and 20° C for heating -- these are the recommended temperature presets for air conditioning, but there are still only a few people who run their air conditioners with these presets. The reason is that the temperature that people perceive differs in the middle of the room compared to near the floor and walls.

Noting this discrepancy, Mitsubishi Electric has developed an air conditioner with a human-sensing energy conservation sensor that simultaneously detects the location of people in a room and the floor temperature. We succeeded in substantially improving energy efficiency while ensuring comfort by controlling the perceived temperature without heating and cooling the entire room. An automatic cleaning function was also added for longer lasting energy efficiency.

Unique Mitsubishi Electric Energy Saving Features

Perceived temperature controlled by sending the right airflows to the necessary places

Learn more

Energy efficiency and cleanliness last longer thanks to automatic cleaning function

Learn more

MITSUBISHI ELECTRIC

Taking on the Challenge of Global Warming

Preventing Global Warming a Challenge for the Whole Group

Section 3 Products

Case 1 Room Air Conditioner with Energy Conservation Sensor

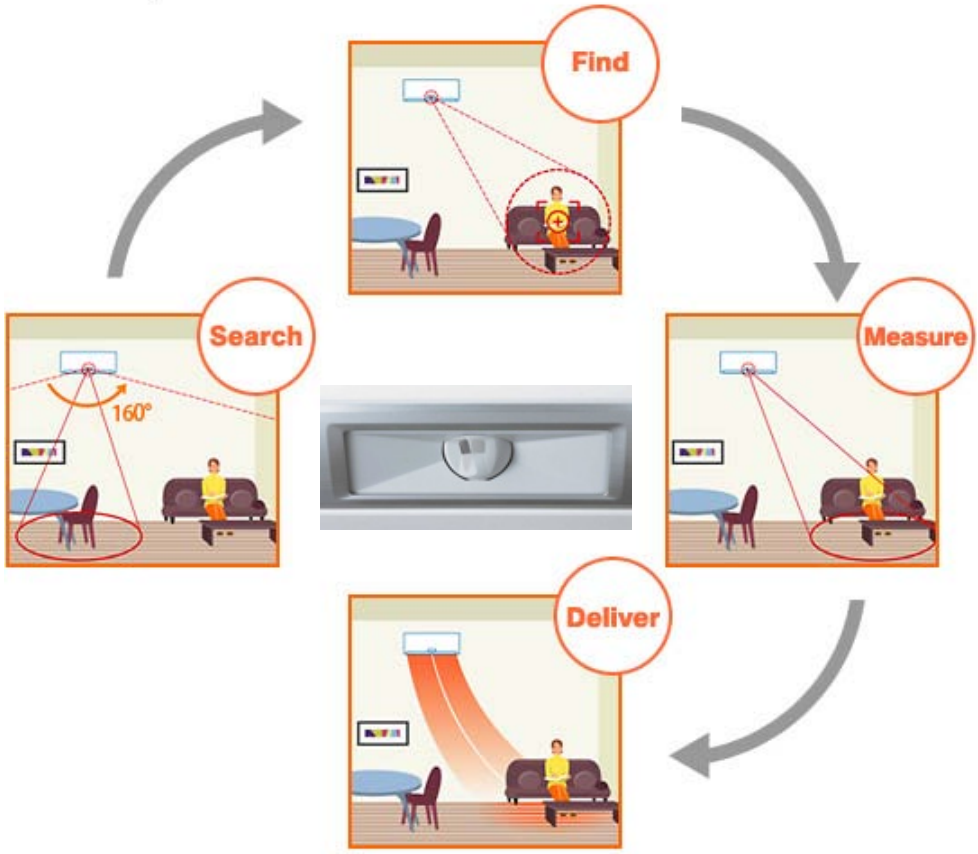
High Levels of Air Conditioning Comfort and Energy Efficiency

Perceived temperature controlled by sending the right airflows to the necessary places

Energy efficiency changes by about 10% for each degree Celsius the preset temperature is raised or lowered, so the way in which an air conditioner is used can make great changes to energy consumption. Given this fact, Mitsubishi Electric looked at how air conditioners are used in order to further improve their energy efficiency.

Common points of dissatisfaction with air conditioners are closely connected to their preset temperatures: temperature irregularity, cold feet (in heating mode), the airflow not going to the right place, etc. Air conditioners have conventionally been developed to air condition the entire room, but a completely new perspective is necessary to put an end to such complaints. Human-sensing energy conservation sensor, developed by Mitsubishi Electric, is the result of applying science to how air conditioners are used. The feature makes it possible to send appropriate airflows to the necessary spaces by sensing the people in the room, and floor and wall temperatures. Energy savings are up to 40% (Note 1).

The sensor finds people in the room and automatically air conditions their location.



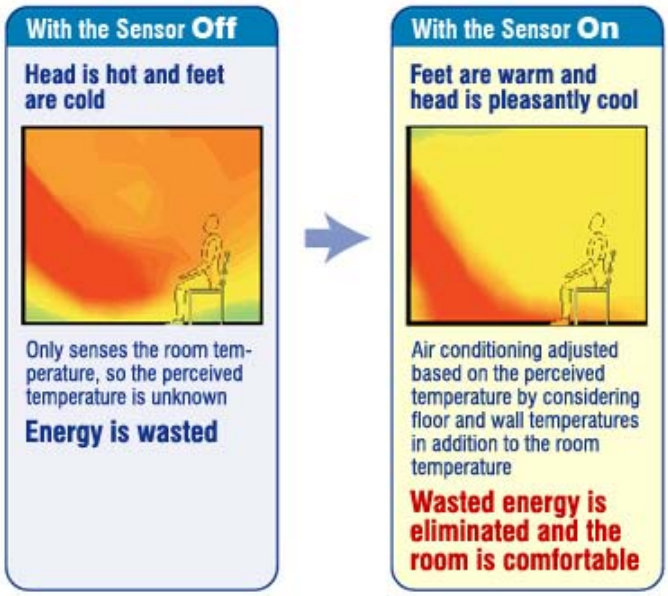
Only Our Product

Nothing Wasted! The Secret of 40%(Note1) Energy Savings

Human-sensing energy conservation sensor controls air conditioning based on the perceived temperature

The temperature that people perceive is more strongly affected by radiant heat from the walls and floors than by the temperature and humidity of the air. Human-sensing energy conservation sensor broadly monitors the temperature around people's feet and the temperature of the walls, and ingeniously adjusts the air conditioning based on the perceived temperature. This serves to reduce wasted electricity while also further improving comfort levels.

Perceived Temperature Control (As Seen on Thermographs)



Note 1: MSZ-ZW407S model. Cumulative power consumption reduced by up to 40% after four hours of heating with temperature settings at Automatic Area Air Conditioning (auto; perceived temperature 20° C) compared to when Move-Eye is off (room temperature 23° C) (temperature settings differ in order to obtain the same perceived temperature), after starting up the air conditioner following six hours of suspended operation in a stable indoor environment (Mitsubishi Electric's environmental testing lab (area of approx. 23 m2)) with a constant outside air temperature of 2° C. The savings were around 30% by controlling the perceived temperature on the basis of the floor temperature, and about 10% by restricting the heated area to one place where people were located.

MITSUBISHI ELECTRIC

Taking on the Challenge of Global Warming

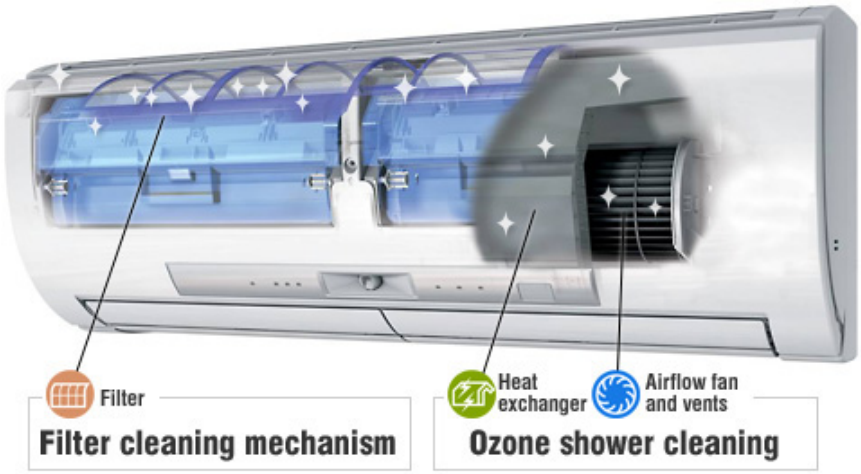
Preventing Global Warming a Challenge for the Whole Group

Section 3 Products

Case 1 Room Air Conditioner with Energy Conservation Sensor

High Levels of Air Conditioning Comfort and Energy Efficiency

Energy efficiency and cleanliness last longer thanks to automatic cleaning function



Dust accumulated in an air conditioner's filter, and dirt and mold on the inside of the unit (on the airflow fan, heat exchanger, etc.) can cause power consumption to increase. When dirt and mold accumulate in substantial amounts, heating and cooling become less effective and extra energy is consumed. In other words, maintaining a clean air conditioner leads to greater energy efficiency and comfort.

Kirigamine features an automatic cleaning mechanism for the filter and an "ozone shower" feature that limits the occurrence and growth of mold on the inside of the unit using low-density ozone. These innovations for keeping the air conditioner completely clean can prevent the user's electricity bill from rising by as much as 30% (Note). This is truly an air conditioner that thinks about energy savings and comfort ten years down the road.

Note: Increase in electricity bill for an air conditioner running at a constant perceived temperature in Mitsubishi Electric's environmental testing lab with a dirty heat exchanger and fan (8 g of dust on fan) (Mitsubishi Electric research).

MITSUBISHI ELECTRIC

Taking on the Challenge of Global Warming

Preventing Global Warming a Challenge for the Whole Group

Section 3 Products

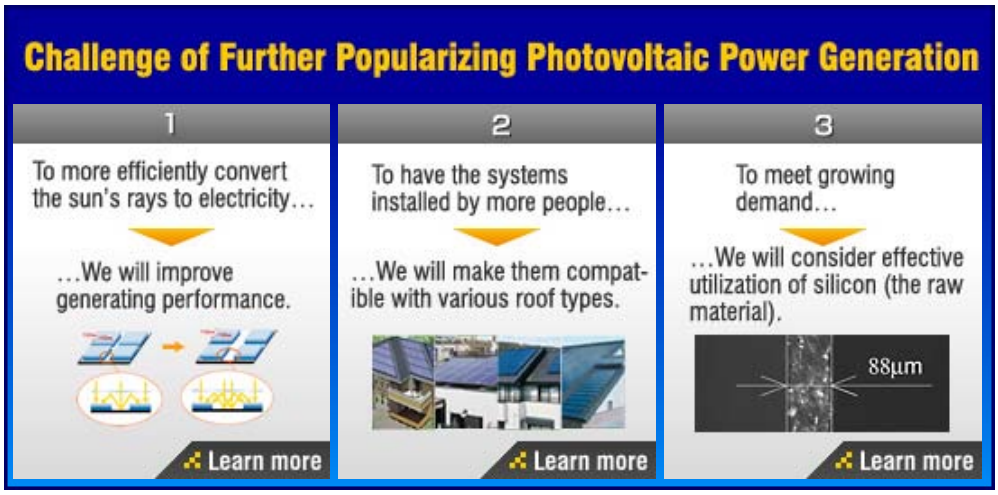
Case 2 Photovoltaic Power Generation System

Popularizing Photovoltaic Power Generation: A Clean Source of Energy With No CO_2

Photovoltaic power generation involves creating electricity from solar energy. Such systems are a clean source of energy, meaning that power generation does not give off CO_2, the cause of global warming. For example, the amount of CO_2 that can be reduced in one year using a 3.7-kilowatt photovoltaic system is equivalent to planting approximately 14 camphor trees (Note 1). Photovoltaic power generation is an effective system for putting an end to global warming, and efforts have now turned to increasing its use around the world.

Mitsubishi Electric is continuing to take on various challenges to further increase use of the system and help prevent global warming.

Note 1: Calculated based on camphor trees with a diameter of 10 cm, from the Pollution-Related Health Damage Compensation and Prevention Association's manual on tree-planting to reduce air pollution.



MITSUBISHI ELECTRIC

Taking on the Challenge of Global Warming

Preventing Global Warming a Challenge for the Whole Group

Section 3 Products

Case 2 Photovoltaic Power Generation System

Popularizing Photovoltaic Power Generation: A Clean Source of Energy With No CO_2

1) To more efficiently convert the sun's rays to electricity…
…We will improve generating performance.

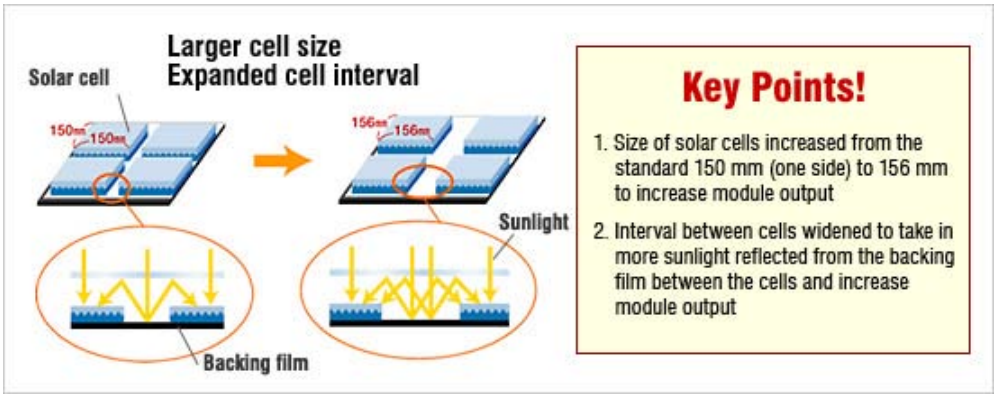
Photovoltaic power generation systems consist of a solar cell module, which convert solar energy from the sun into electricity (direct current), and a power conditioner, which converts the direct current produced by the solar cell module into alternating current that can be used in the home.

Mitsubishi Electric is working to improve the performance of these devices with a start-to-finish production system in order to more efficiently convert sunlight into electricity.

Solar Cell Module

Polycrystalline silicon solar cells provide a conversion efficiency of 18% (Note 1), the highest in the world (Note 2).

Output per solar cell module (multiple solar cells together) is 185W, also the highest in the world (Note 3).



Power Conditioner

Uses a fifth-generation inverter power module developed by Mitsubishi Electric to deliver power conversion efficiency of 95.5%, the highest in the world (Note 4).

Notes 1. Findings of an evaluation done by the National Institute of Advanced Science and Technology, a public certification body for conversion efficiency
Notes 2. As of May 2007; Mitsubishi Electric survey
Notes 3. As of May 2007; Mitsubishi Electric survey. Maximum nominal output per one solar cell module (polycrystalline silicon; mass production model) for Japanese homes.
Notes 4. As of May 2007; Mitsubishi electric survey. PV-PN33G model.

MITSUBISHI ELECTRIC

Taking on the Challenge of Global Warming

Preventing Global Warming a Challenge for the Whole Group

Section 3 Products

Case 2 Photovoltaic Power Generation System

Popularizing Photovoltaic Power Generation: A Clean Source of Energy With No CO_2

2) To have the systems installed by more people…

…We will make them compatible with various roof types.

Simply increasing the number of places where photovoltaic power generation systems can be installed will lead to greater usage. Mitsubishi Electric has created a lineup of solar cell modules that can be attractively installed on roofs of various shapes and types.

Installation examples: http://www.mitsubishielectric.co.jp/service/taiyo/jutaku/zirei/

MITSUBISHI ELECTRIC

Taking on the Challenge of Global Warming

Preventing Global Warming a Challenge for the Whole Group

Section 3 Products

Case 2 Photovoltaic Power Generation System

Popularizing Photovoltaic Power Generation: A Clean Source of Energy With No CO_2

3) To meet growing demand...

...We will consider effective utilization of silicon (the raw material).

Solar cells are made from silicon, and with use of photovoltaic systems currently on the rise around the world, silicon supply-and-demand is tight. If materials are lacking, it will be impossible to produce solar cells no matter how much demand increases. There is a need therefore to generate more electricity using less silicon.

Along with technology to improve generating efficiency, Mitsubishi Electric has been carrying out research and development on silicon thinning technology in order to make more effective use of silicon. It is said that ultra-thin silicon substrate of around 100 microns will be needed by around 2010, and recently we became the first in the world to verify principles for slicing silicon substrate using electrical discharging in order to make this a reality. Currently, the mainstream method for slicing silicon involves using wire, but there is a limit to how thin it can be sliced due to the enormous amount of force applied. Chipping also occurs in proportion to the size of the wire. However, with electrical discharging, the silicon is sliced without touching it, so it can be sliced extremely thin with minimal chipping.

MITSUBISHI ELECTRIC
Taking on the Challenge of Global Warming
Preventing Global Warming a Challenge for the Whole Group
Section 3 Products

Overseas Report

Installing a Photovoltaic Power System at a School in Cambodia in Need of Electricity

Mitsubishi Electric has teamed up with the New Energy and Industrial Technology Development Organization (NEDO) and electric power utilities to conduct wide-ranging research activities related to solar power generation. We are also delivering clean energy to schools and public facilities around the country by installing photovoltaic power generation systems. Moreover, in regions overseas that are off the power grid, our solar power systems are helping to improve people's quality of life.

A Mitsubishi Electric solar cell module (3.96 kW) has been installed at Angkor Thom Junior High School in Siem Reap, Cambodia. The main goal for the system was to supply power that was needed for the school to begin computer classes. Since this area of Cambodia is off the power grid, it did not even have lights at night, let alone computers.

Advertisement introducing a power system installed at a school

The Mitsubishi brand is well known in Cambodia. The local systems integrator that handled this project, Advantec Solar, had thought highly of our solar cell modules for some time, so the reliability of Mitsubishi Electric and its products were major considerations when planning the project.

The system that was installed was designed for regions off the grid. It includes solar cell modules, batteries, an inverter and a controller.

Once the system was up and running, the opportunity to touch a computer for the first time in their lives filled the students with joy. The teachers were also very appreciative of the project, commenting that learning about computers would be extremely valuable for the children's futures.

Mitsubishi Electric solar cell modules have also been installed to power computers at other schools in Cambodia, including a 2.42 kW system at Banteay Srey and a 1.32 kW system at Svay Chek. Furthermore, Zamboanga del Sur is a region of the Philippines that does not have access to electricity. Four 110W Mitsubishi modules were installed there to power the village's community television, DVD player and karaoke machine.


Community project in Zamboanga Del Sur, Philippines

Mitsubishi Electric plans to continue using its photovoltaic power generation systems to supply society will environmentally friendly energy, and to help children around the world living without electricity.

Mitsubishi Electric has teamed up with the New Energy and Industrial Technology Development Organization (NEDO) and electric power utilities to conduct wide-ranging research activities related to solar power generation. We are also delivering clean energy to schools and public facilities around the country by installing photovoltaic power generation systems. Moreover, in regions overseas that are off the power grid, our solar power systems are helping to improve people's quality of life.

Major Photovoltaic Power System Installations in Regions Overseas Without Electricity

Installation Site	Applications for Generated Power	Output
Ulu Kalabakan, Tawau Sabah, Malaysia, School	Computer, fan, lights, refrigerator and TV	10.8kW
Sebatik Island, Tawau Sabah, Malaysia, School	Computer, fan, lights, refrigerator and TV	7.2kW
Kalimantan, Indonesia, Telecom Base Station	Telecommunications equipment	13.2kW
Bihar, India, School	Computers	1.65kW
Phnom Penh, Cambodia, Solar Home System	Fan, lights and small TV	0.33kW
Pulau Ubin, Singapore, Public Restrooms	Water pump, lights and fans	1kW
Papua New Guinea, Solar Home System	Fans, lights and small TV	0.48kW
Sumatra, Indonesia, Solar Dryer	Drying of shrimp and fruit	0.22kW
Zamboanga Del Sur, Philippines, Community Project	Color TV, DVD player and karaoke	0.44kW

MITSUBISHI ELECTRIC

Taking on the Challenge of Global Warming

Preventing Global Warming a Challenge for the Whole Group

Section 3 Products

Customer Comments

Installing the Largest Photovoltaic Power System in the Prefecture as Part of Our Efforts to Counter Global Warming

Kenji Morino

Project Leader, Environment
Project Head Business Group
Kofu Plant

In 2006, TDK established a basic plan for environmental activities called "TDK Environmental Action 2015." We are developing initiatives on the basis of five areas established by the plan: improving environmental management systems, preventing global warming, dealing with waste, managing environmental risks, and creating environmentally conscious products.

In the area of preventing global warming, we are actively working to utilize solar energy, alongside measures to reduce the size of products, decrease process numbers, and improve the energy efficiency of production facilities. We have installed photovoltaic power systems at three of our plants: in Japan at the Kofu Plant in Yamanashi Prefecture, and in China at the Changan Factory and Songshan Lake Factory.

At the Kofu Plant, we installed a 300W solar power system, the largest in Yamanashi Prefecture, to maximize our use of the area's abundant natural energy and take advantage of the prefecture's many hours of sunlight each year, the most of any prefecture in Japan. The system has been selected for a field test program for new solar power technologies run by the New Energy and Industrial Technology Development Organization. Experiments are being done in connection with exposure angles, seasonal changes and other variables.

Exceeding Expectations: Power Production at 107% of Forecasts

Photovoltaic power generation at the Kofu Plant features three different types of systems in operation. 100-kilowatt systems from three companies, including Mitsubishi Electric, have been installed in three locations, and we have been comparing the systems and running various experiments.

Before installing the systems, we considered proposals from eight Japanese companies and selected the three companies that excelled in terms of performance, track record, price and other factors. Mitsubishi Electric made an outstanding proposal for a 100 kW solar power system on the folded-plate roof of a plant building, and a monitoring system. Also, because this was the largest solar power facility in the prefecture, we had to carefully negotiate with the power utility regarding connecting to the grid and other issues. Mitsubishi Electric, with its experience and knowledge in heavy electrical machinery, joined technical deliberations with the power utility and handled the situation appropriately, which helped us successfully win the understanding of the utility.

In 2006, the amount of power produced by Mitsubishi Electric's system was 107% of forecasts, which were based on meteorological data from the past 30 years. We graded the system as demonstrating maximum efficiency, which included the match with the power conditioner. There is very little rainwater residue or dirt on the module, and we are also satisfied with the conscientious follow-up service we have received from the company.

We Expect Mitsubishi Electric's Comprehensive Strengths Will Lead to Further Popularization of the System

Converted from the amount of power generated, the greenhouse gas reduction benefits from the solar power system are really not very large. However, the system plays a valuable role in our environmental activities above and beyond direct reduction benefits.

For example, since installing the system at the Kofu Plant, many visitors have come for factory tours, in luding university researchers and students, local government officials, non-profit organizations and media members. The project has garnered substantial attention beyond what we expected and has led to an increased awareness throughout the company of the need to devote effort to preventing global warming in other areas. In other words, installation of the solar power system throughout the company has served to spur efforts to counter global warming throughout the entire company.

At present, Japan is the world's top producer of solar cells, but we are in second place behind Germany in terms of the amount of solar power systems that have been installed. In order to further increase use of these systems, effective policies for promoting them are needed, along with efforts on the manufacturing side. Further evolution in system performance-improvement in the solar energy conversion ratio, for example-will surely give a boost to their popularity. I expect Mitsubishi Electric, with its comprehensive strengths, to continue to be involved in dynamic initiatives on this front.

MITSUBISHI ELECTRIC

Taking on the Challenge of Global Warming

Preventing Global Warming a Challenge for the Whole Group

Section 4

Customer Proposal Challenges

Energy Conservation Seminars: Proposing Solutions that Draw on Mitsubishi Electric's Record of Achievement in Energy Conservation

Mitsubishi Electric is involved in promoting environmental management. This means we not only carry out a variety of energy conservation activities at our factories and offices, but also present our propriety technologies and accumulated expertise to customers in a number of ways, including factory tours and energy conservation seminars, in order to help customers effectively promote energy conservation. In fiscal 2007, we held small seminars that were more practically oriented than past seminars and proposed solutions to problems facing our customers.

Communicating Mitsubishi Electric Energy Conservation Methodology and Expertise to Industry

Learn more

Small, Practical Seminars for Making Initiatives a Reality

Learn more

Mutually Beneficial Information Exchange Via Factory Visits and Informal Discussions

Learn more

Long-Lasting Partnerships with Customers Through Assisting in Energy Conservation

Learn more

MITSUBISHI ELECTRIC

Taking on the Challenge of Global Warming

Preventing Global Warming a Challenge for the Whole Group

Section 4

Customer Proposal Challenges

Energy Conservation Seminars: Proposing Solutions that Draw on Mitsubishi Electric's Record of Achievement in Energy Conservation

Communicating Mitsubishi Electric Energy Conservation Methodology and Expertise to Industry

In promoting energy conservation activities in-house, Mitsubishi Electric has accumulated a range of technologies and expertise and has constructed unique methodologies. We have also conducted many initiatives aimed at sharing these technologies and methodologies with customers in order to help bring solutions to their problems.

For example, at Fukuyama Works we have given tours of our model factory for energy efficiency for the past 10 years or so. Customers are shown examples of thoroughgoing energy efficiency activities on the production floor, which are based on managing specific energy consumption. Various energy conservation seminars are also held as needed at the head office and branches to provide customers with an array of information, including the current state of laws and regulations, effective energy conservation methods, success stories, and solution approaches in various situations. Additionally, our managers in charge of energy conservation present examples of our initiatives in this area at various seminars held by newspapers, industry groups and other organizations in an effort to broadly communicate Mitsubishi Electric's approaches and know-how.

MITSUBISHI ELECTRIC

Taking on the Challenge of Global Warming

Preventing Global Warming a Challenge for the Whole Group

Section 4

Customer Proposal Challenges

Energy Conservation Seminars: Proposing Solutions that Draw on Mitsubishi Electric's Record of Achievement in Energy Conservation

Small, Practical Seminars for Making Initiatives a Reality

As a means of communicating this information and providing expertise, in the fall of 2006 we held a small seminar on how to bring about proactive energy conservation initiatives at factories.

With energy conservation regulations continuing to be strengthened at the government level, including the Law Concerning the Promotion of Measures to Cope with Global Warming, and the amended Law Concerning the Rational Use of Energy, industry is being pressed to make substantial changes and improvements to energy management systems. However, at present, there are many managers who understand the necessity of energy conservation and would like to try and implement initiatives at their own factories and offices but do not know where to begin. We therefore created a practical seminar to provide concrete support for customers faced with such concerns.

The seminar was kept small and focused on interactive communication among the small number of participants, not through the traditional lecture format. In order to help facilitate thinking about concrete, practical solutions with customers, the seminar was conducted over two days with participants staying overnight at the same facility. Through a visit to a Mitsubishi Electric factory, information was provided on how to directly make energy conservation initiatives a reality. Opportunities were also created for the free exchange of ideas in order to delve deeper into specific issues faced by customers as well as potential solutions to them.

MITSUBISHI ELECTRIC

Taking on the Challenge of Global Warming

Preventing Global Warming a Challenge for the Whole Group

Section 4

Customer Proposal Challenges

Energy Conservation Seminars: Proposing Solutions that Draw on Mitsubishi Electric's Record of Achievement in Energy Conservation

Mutually Beneficial Information Exchange Via Factory Visits and Informal Discussions

The first such seminar was held in Nagoya and at our Fukuyama Works in October 2006. A total of 22 companies participated; primarily manufacturers involved in machinery, metals, automobiles and food products.

On the factory visit, we presented the details of actual initiatives, including systems for promoting energy efficiency on production floors and at the factory overall, system installation and operation, and specific devices and their benefits. We took the stance of basically presenting everything possible as it really is, and with customers we looked at not only successes but also issues and problems. This was enough for some customers to exclaim that they couldn't believe we had opened up our factory to such an extent.

At the question-and-answer session following each lecture, the common concerns of managers involved in promoting energy conservation came into sharp relief: "How do we convince upper management," "How do we obtain the understanding of internal departments," How do we raise awareness on the production floor?" We advised the participants that first making energy usage by each division and facility readily apparent, and readily grasping and then managing usage in terms of specific consumption, would not only conserve energy but also translate directly into improved productivity. Through informal discussions with these customers, we realized that equipment requirements and points of data analysis were fairly different depending on the industry and sector. The information that was exchanged at the seminar proved extremely valuable for both the participating customers and Mitsubishi Electric.

MITSUBISHI ELECTRIC

Taking on the Challenge of Global Warming

Preventing Global Warming a Challenge for the Whole Group

Section 4

Customer Proposal Challenges

Energy Conservation Seminars: Proposing Solutions that Draw on Mitsubishi Electric's Record of Achievement in Energy Conservation

Long-Lasting Partnerships with Customers Through Assisting in Energy Conservation

The customers that participated in this energy conservation seminar praised it as being extremely unique and beneficial and encouraged us to hold more in the future. We are therefore in the progress of planning a second seminar for the summer of 2007. We plan to hold the next seminar at a location that will make it easy for customers in the Kanto area to attend. We are considering making the seminar a one-day event and customizing the curriculum and field outings to the needs of the area where it is held. The seminar, along with information and knowledge obtained from it, will also be progressively utilized in seminars held by branch offices and at other levels of the company.

Because Mitsubishi Electric provides broad ranging support for customer energy conservation activities, including diagnosis, consulting, system development and installation, device supply, maintenance, and operations follow-up, seminars that draw on successes we have had in energy conservation help lay the groundwork for long-lasting relationships with customers. We plan to continue to practice energy conservation at Group factories and offices to help counter global warming and continue to widely share the technologies and expertise accumulated through this practice in order to help build a sustainable society.

MITSUBISHI ELECTRIC

Taking on the Challenge of Global Warming

Preventing Global Warming a Challenge for the Whole Group

Section 4

Customer Proposal Challenges

Dialogue with Customers

Realizing the Power of Making Readily Apparent: Improvements Already Starting to Yield Benefits

Hiroshi Okuyama
Manager
Administrative Department
Mizushima Plant Mitsubishi Motors Corporation

The Mizushima Plant of Mitsubishi Motors took the advice of Mitsubishi Electric on energy conservation and in 2006 we installed EcoServer II a server for collecting energy efficiency data at our coating plant, which was constructed in 2004. We made the decision based on the server's relative ease of installation compared to other systems and its ability to flexibly accommodate production line alterations and other changes. This was needed because at an automobile plant positioning of manufacturing lines at the site changes depending on increases or changes to the models produced.

Installing the server has made it possible to display where power, gas and water is being used and in what amounts. We now realize the power of making specific consumption on production lines readily apparent. We can identify problems that need improvement by monitoring energy usage and the system is already starting to yield benefits. All employees are able to view energy usage on the plant's intranet, so the data is utilized at company meetings.

Last year's energy conservation seminar was an extremely interesting experience. The format was not based on the teacher–student dichotomy; rather there was an atmosphere that encouraged people to ask questions and state their opinions. I came away with the expectation that this experience would lead to additional discussions with managers of other companies in the same industry and different industries.

We intend to further promote to make readily apparent using management of specific consumption and implement more thoroughgoing initiatives to improve energy efficiency. One issue is what actions to take and what benefits to produce after energy usage has been made readily apparent. We would like to request the continuing support of Mitsubishi Electric on data analysis and other approaches to this issue.

Managing Specific Consumption for All Types of Energy—Power, Steam, Gas, Water and Air

Kuniaki Kondo
Manager
Measurement, Control and Energy Efficiency Solutions Group Sales Department
Fukushima Works Mitsubishi Electric Corporation

Hirokazu Sakano
Group Manager
Power Distribution and Control Group Chugoku Branch FA Systems Department Mitsubishi Electric Corporation

We had the opportunity to deepen out relationship with the staff at the Mizushima Plant during the electric power conference in Okayama. They were quick to understand our approach to energy conservation and methodology and, afterward, almost immediately installed our server for collecting energy efficiency date, the EcoServer II. The plant is also making exceptional progress in raising awareness in-house of the importance of making energy usage readily apparent. At the energy conservation seminar as well, the plant helped out in various ways, acting as a progressive company among the participants and asking pertinent questions to lead the overall flow of the dialogue on each point.

We plan to continue to assist the Mizushima Plant in promoting management of specific energy consumption. We are currently in the process of analyzing the data we have received from the plant and intend to propose data analysis software for making improvements on the production floor.

The goal is to build a system for managing specific consumption that makes energy usage readily apparent for all types of energy, including electric power, steam, gas, water and air. If this can be achieved at a factory as big as the Mizushima Plant, it would amount to a major accomplishment for us as well and lead to further development into the future.

Environmental Report

Environmental Policy and Code of Conduct

An introduction to Mitsubishi Electric's policies and guiding principles for protecting the environment for future generations

▶ More

Management Concept

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

▶ More

Our Environmental Mindset

A message from our Environmental Executive Officer on environmental activities conducted by the Mitsubishi Electric Group to bring about a sustainable society

▶ More

Fiscal 2007 Targets and Achievements

A report on fiscal 2007 targets and achievements in the areas of Management, Environmental Business, Communications; Eco-Products; Eco-Factories; and Eco-Logistics

▶ More

Environmental Vision

Core Environmental Policy and Environmental 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.

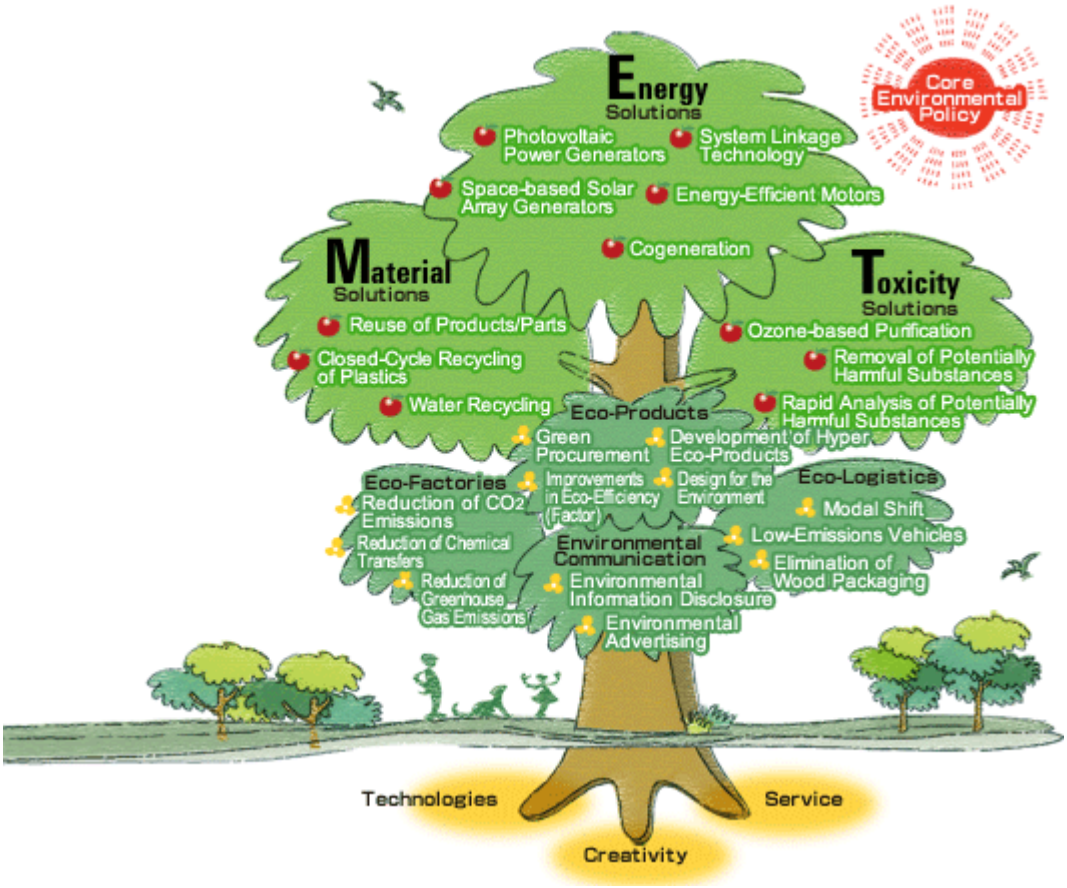
Core Environmental Policy

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 sound-technologies and processes.
- We work through our business activities 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 works 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.

Materials refer to the efficient use of resources, Energy, to the efficient use of energy, and Toxicity, to reducing the use of substances potentially harmful to the environment. It is from these three perspectives 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

Environmental Vision

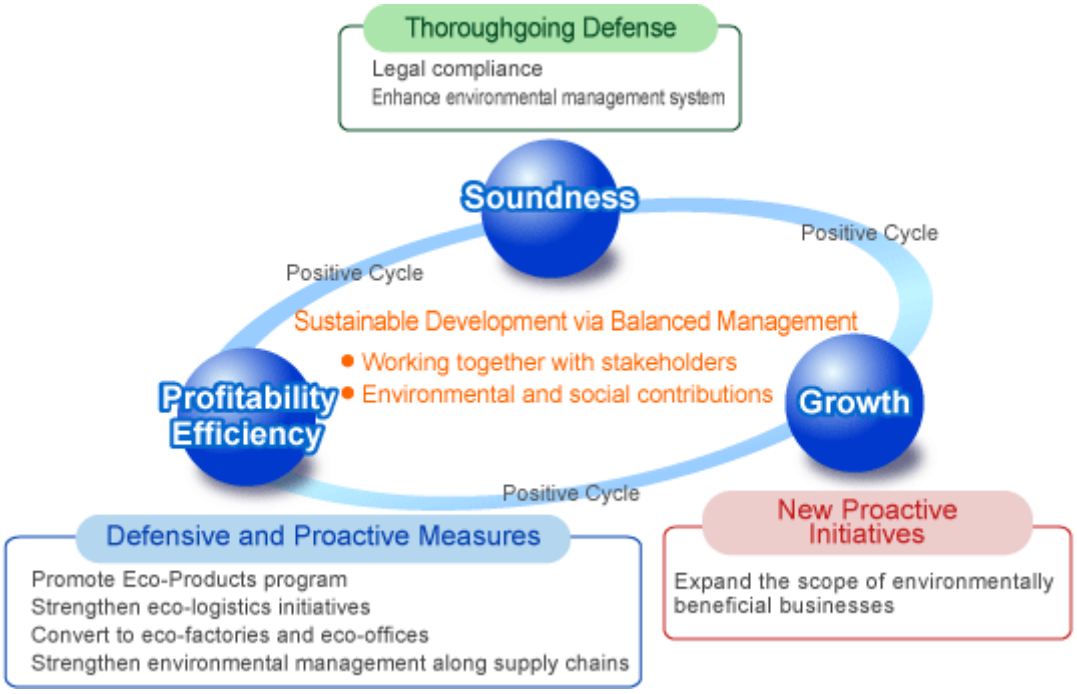
Management Concept

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 (FY1994-1997), 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 Vision

Our Environmental Mindset Promotes Ongoing Improvements

Commitment of the Environmental Executive Officer

Kenichiro Yamanishi
Environmental
Executive Officer

As a manufacturing company, the targets set by Mitsubishi Electric when advancing environmental activities have much in common with targets for improving productivity or quality. The goals of reducing energy usage in production as much as possible and not using harmful substances in products are two examples. Compared to other activities, however, environmental activities are strongly rooted in compassion -- specifically, the desire to protect human life, the eco-system and the earth. This kind of compassion could also be referred to as an environmental mindset.

I believe that true environmental management makes this environmental mindset the basis of action and promotes activities oriented toward the future of the earth and the life it sustains, while at the same time striving to achieve the economic objectives that society requires of a company. It is only when every employee of the company possesses a highly aware environmental mindset and strives in his or her daily activities that true environmental management becomes possible.

Of all the environmental challenges we now face, the challenge of preventing global warming in particular has become a pressing priority throughout the world. Initiatives aimed at preventing global warming must be promoted in every aspect of corporate operations.

The Mitsubishi Electric Group has long endeavored to reduce carbon dioxide emissions in product manufacturing and logistics processes, but we are now attempting to integrate all business processes -- from development to manufacturing, sales, disposal and recycling -- in order to manage the total volume of carbon dioxide emitted by the Group. To accomplish this, we must continue to advance the Design for the Environment program in order to reduce total carbon dioxide emissions throughout product lifecycles. In promoting Design for the Environment, making products smaller and lighter is crucial to using resources effectively. At the same time, reducing costs is also an important issue. I believe that our various divisions must work together to robustly tackle these challenges.

Fusing top-down and bottom-up initiatives is the most effective way to promote corporate strategy. The same holds true for environmental management. Under our 5th Environmental Plan, which got underway in fiscal 2007, all Group organizations are involved in carrying out environmental management, which involves voluntarily incorporating environmental considerations into all business activities. In order to make these activities truly effective, top management must hammer out clear policies, formulate specific plans and carry out management on this basis while, at the same time, all employees must deeply foster within themselves a mindset and sensibility that befits people charged with promoting environmental management. Fusing these top-down and bottom-up initiatives is what will enable the environmental mindset of all employees to be a force in all business activities, including not only development, production and sales, but also public relations, personnel and finances.

This is the type of corporate group that Mitsubishi Electric is striving to become.

Fiscal 2007 Targets and Achievements

Overview of Activities in Fiscal 2007

Fiscal 2007 marked the first year of our 5th Environmental Plan, which seeks to bolster balanced management with defensive and proactive environmental initiatives. We successfully steadily embarked on challenges in the following three areas.

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

We strengthened 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, environmental audits were conducted at 13 non-production sites and 19 production sites belonging to Mitsubishi Electric. Also, the scope of environmental audits and compliance inspections at domestic affiliates was expanded to include non-production affiliates, and audits and inspections were conducted at 79 sites. We strengthened environmental management on the defensive front by continuing to train key environmental personnel for the future of the company and carrying out specialized training for environmental auditors. Overseas, we sent representatives to China and Europe to help develop systems at local affiliates, and conducted inspections of environmental activities at 12 sites. The inspections centered on promotion of measures to prevent environmental accidents.

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

We worked to reduce environmental impact at the stages of production, products and logistics. With respect to preventing global warming, we actively carried out investment in energy efficiency, which resulted in lowering carbon dioxide emissions by 459,000 tons-CO_2, a 63% reduction from fiscal 1991 per nominal net sales. This means that we have already achieved the voluntary target we set for 2010.

In the area of waste reduction, the final disposal ratio of Mitsubishi Electric was 0.29% on a non-consolidated basis, as we achieved zero emissions (defined as a final disposal ratio of less than 1%) for the fifth straight year. Affiliates in Japan improved to 1.4%, approaching zero emissions status.

With respect to reducing release volumes of chemical substances, we added 13 volatile organic compounds to the scope of management in line with amendments to the Air Pollution Control Law. As a result, atmospheric release and waste transfer volume increased by 354 tons.

With regard to environmental considerations in products, we are steadily expanding our Design for the Environment program as a proactive initiative, and achieved an Eco-Products ratio (to production value) of 82%. We also focused on developing and evaluating material recycling technologies for plastics. On the defensive front, we strictly complied with environmental regulations for products, which are becoming multinational in nature. We developed compliance systems and maintained compliance with the European Union's RoHS Directive, which bans the use of certain chemical substances. We also made serious progress inside and outside the Group in responding to the EU's REACH policy, which requires the management of chemical substances down the supply chain.

In the area of environmental logistics, in fiscal 2007, carbon dioxide emissions from product (sales) logistics were down 20% from fiscal 2003 on a Group basis and 30% on a non-consolidated basis. Packaging material usage dropped 10% on a Group basis and 17% on a non-consolidated basis. We achieved our targets for both (targets are per unit of net shipping weight).

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

We have set sales targets for our corporate energy saving solutions business. The business gradually grew in fiscal 2007, as sales rose by 7.3% over the previous year to ¥78.76 billion.

In order to continue to strengthen and develop these initiatives, steady execution of the 5th Environmental Plan and thorough compliance with ethical norms and legal regulations related to the environment will be the policies of the Mitsubishi Electric Group for fiscal 2008, and environmental management will be conducted on this basis. We will also continue to devote effort to environmental and social contributions and to improving communication, which is another pillar strengthened under the 5th Environmental Plan.

Fiscal 2007 Targets and Achievements

Well done Almost there More effort needed

Management, Environmental Business, Communications

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 environmental 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	FY2007 Targets	Hold regional conferences in the U.S., China, Asia and Europe Conduct auditing training at sites subject to audits and ensure auditor competence
	FY2007 Achievements	Held regional conferences in the U.S., China, Asia and Europe Conducted environmental audits at 13 sites and 19 factories in Japan, environmental audits and compliance inspections at 79 manufacturing and non-manufacturing affiliates in Japan, and environmental inspections at 12 manufacturing sites overseas. 143 people participated in entry-level training for environmental auditors conducted in Japan; 142 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	FY2007 Targets	Have at least 20 employees complete key environmental personnel training Formulate and execute a plan to quickly address soil and groundwater contamination Formulate a plan for processing stored PCBs, and promote processing
	FY2007 Achievements	23 employees completed key environmental personnel training Continued to carry out groundwater and soil contamination measures Devised plan to complete processing by 2010 and raised awareness of processing rules
	Level of Achievement (Self-Evaluation)	

Further develop an environmental mindset Raise environmental awareness and train personnel (motivate employees in the area of environmental protection and conduct environmental education)		
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	FY2007 Targets	Hold "Mitsubishi Electric Outdoor Classroom;" train 20 outdoor classroom leaders 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
	FY2007 Achievements	Held "Mitsubishi Electric Outdoor Classroom" (in Hibiya Park for 20 local kindergarten students) Prepared woodland conservation activities (Nagoya area) Conducted Mt. Fuji forest initiative three times Conducted in-house training for different stage in life (regular, specialized); total of 30,000 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	FY2007 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
	FY2007 Achievements	Increased sales from environmentally beneficial businesses for corporations by 7.3% (¥78.76 billion) over the previous 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	FY2007 Targets	Enhance environmental information provided on website and Environmental Sustainability Report Exhibit at Eco-Products 2006 (Japan) and the Eco-Products International Fair (Singapore) Conduct awareness-raising activities inside and outside the company linked with national campaigns against global warming
	FY2007 Achievements	Published 2006 Environmental Sustainability Report from a CSR perspective with more reporting on social responsibilities Exhibited at Eco-Products 2006 (Japan) and the Eco-Products International Fair (Singapore) Participated in the Team -6% campaign (Marunouchi watering event, etc.); raised awareness of the "Cool Biz" campaign in the company and promoted it to visitors
	Level of Achievement (Self-Evaluation)	

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

Environmental considerations down the supply chain		
FY2009 Targets Create Mitsubishi Electric Group Green Certification Guidelines and certify qualified suppliers	FY2007 Targets	Create Mitsubishi Electric Group Green Certification Guidelines
	FY2007 Achievements	Created Green Certification Guidelines and revised the Green Procurement Standards Guide; conducted green certification of major suppliers covered by the RoHS Directive
	Level of Achievement (Self-Evaluation)	
Create eco-products by promoting DFE		
FY2009 Targets Raise the ratio of Eco-Products to production value 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	FY2007 Targets	Achieve Eco-Products ratio (compared to production amount) of 80% Improve plastic recycling technology
	FY2007 Achievements	Achieved Eco-Products ratio (compared to production amount) of 82% (88% for mass produced products; 43% for others) Conducted environmental impact assessment of material recycling (mixed plastic processing) and verified superiority compared to other processing methods
	Level of Achievement (Self-Evaluation)	

Completely eliminate HCFC		
FY2009 Targets Abolish the use of HCFC for refrigerants by the end of FY2011	FY2007 Targets	Completely eliminate HCFC in package air conditioners for buildings (complete conversion to HFC)
	FY2007 Achievements	Completely eliminated HCFC in package air conditioners for buildings (completed conversion to HFC)
	Level of Achievement (Self-Evaluation)	
Comply with the RoHS Directive		
FY2009 Targets Continue to strictly comply with RoHS Directive	FY2007 Targets	Conduct inspections of management practices for contamination risk and strictly comply with RoHS
	FY2007 Achievements	Promoted risk management at the Business Group level and maintained RoHS compliance
	Level of Achievement (Self-Evaluation)	
Comply with REACH regulation		
FY2009 Targets Establish systems for managing chemical substances to comply with the REACH regulations	FY2007 Targets	Establish systems for managing chemical substances to comply with the REACH regulations
	FY2007 Achievements	Participated in JAMP (Japan Article Management Promotion Consortium) to build informational foundations for complying with the REACH regulations
	Level of Achievement (Self-Evaluation)	

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	FY2007 Targets	Create indicator for assessing environmental initiatives, develop an assessment system and operate on a trial basis
	FY2007 Achievements	Created eco-factory indicator and assessment tools Operated on a trial basis at five business 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	FY2007 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
	FY2007 Achievements	Mitsubishi Electric: Reduced final disposal volume to 0.29% of total waste emissions Affiliates and subsidiaries in Japan: Reduced final disposal volume to 1.4% 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	FY2007 Targets	Factories: Improve by 10% per nominal net sales amount from FY2005 Offices: Improve by 10% per unit of floor space from FY2005
	FY2007 Achievements	Factories: Improved by 15% from FY2005 Offices: Improved by 70% 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	FY2007 Targets	Confirm the status of water usage at Mitsubishi Electric's works and affiliates, and promote effective usage policies
	FY2007 Achievements	Water usage status confirmed at two Mitsubishi Electric manufacturing works
	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	FY2007 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
	FY2007 Achievements	Invested in energy saving facilities at a targeted rate of 0.1% of production amount and reduced emissions by 6% per year at domestic manufacturing works (including research centers) Started calculating on a floor space basis at head office, branch offices and non-manufacturing affiliates in Japan (Head office and branch offices: 3,720 tons-CO_2; non-manufacturing affiliates in Japan: 288,000 tons-CO_2) Started calculating on a real sales basis at manufacturing affiliates in Japan and overseas (Manufacturing affiliates in Japan: 172,000 tons-CO_2; Manufacturing affiliates overseas: 234,000 tons-CO_2)
	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	FY2007 Targets	Japan: Reduce by 24% per net shipping weight (kg-CO_2/ton) from FY2003 Overseas: Expand scope to manufacturing companies and sales companies
	FY2007 Achievements	Japan: Reduced by 30% in FY2007 (Mitsubishi Electric); reduced by 20% in FY2006 (Group) Overseas: Calculated for manufacturing companies (15 million tons-CO_2)
	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	FY2007 Targets	Establish method for calculating CO_2 emissions, and devise and execute reduction plans
	FY2007 Achievements	Established calculation method based on the ton-kilo method
	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	FY2007 Targets	Establish method for calculating CO_2 emissions from supply logistics
	FY2007 Achievements	Established calculation method 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)	FY2007 Targets	Disposable packaging materials Japan: Reduce by 4% per net shipping weight (kg/ton) from FY2005 Overseas: Reduce total usage at manufacturing companies Continue eliminating use of wood products (Japan only)
	FY2007 Achievements	Disposable packaging materials Japan: Reduced by 17% (Mitsubishi Electric); reduced by 10% (Group) Overseas: Calculated at manufacturing companies (22,000 tons) Continued eliminating use of wood products (Japan only) Mitsubishi Electric: Reduced by 3.5% from FY2005; Group: Reduced by 1.5% from FY2005
	Level of Achievement (Self-Evaluation)	

Environmental Report

Management System

Mitsubishi Electric is promoting environmental management on a global basis through building and implementing environmental management systems and proactively facilitating communication among environmental managers in Japan and overseas.

More

Environmental Audits

Internal environmental audits are conducted along with other rigorous checks in order to raise the overall level of environmental management. The company is involved in an ongoing cycle of discovering problems and making improvements.

More

Environmental Training

Mitsubishi Electric is currently training key environmental personnel on a company-wide basis to handle the actual work involved in environmental management, including auditors to carry out responsible auditing in order to further develop environmental management activities at a high level into the future.

More

Environmental Risk Management

The company is committed to the early discovery of potential environmental contamination through environmental assessments and work to make risks readily apparent.

More

Environmental Accounting

Mitsubishi Electric has instituted an environmental accounting system to raise the efficiency of environmental activities and facilitate ongoing improvement. We allocate management resources to environmental activities and disclose information on their benefits.

More

Environmental Management

Management System

Integrated Management System Based on the Environmental Plan

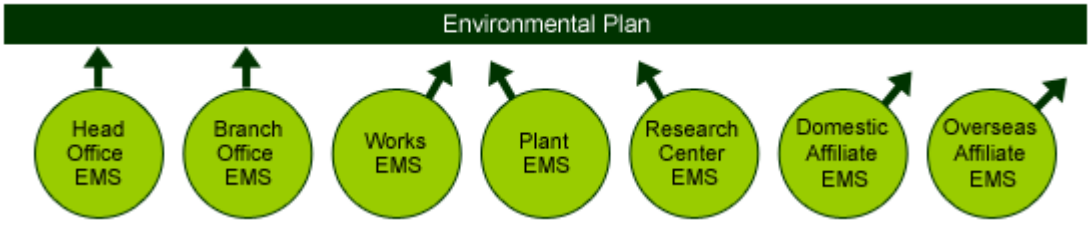
Under Mitsubishi Electric's 5th Environmental Plan, which went into effect in fiscal 2007, we are working toward the integrated operation of environmental management systems (EMS) at our business sites by sharing the goals stated in the plan with the entire Mitsubishi Chemical Group.

At our head office and branches, we launched integrated EMS operations when updating systems to meet the requirements of ISO 14001:2004. For the environmental management systems at our manufacturing works, plants and research centers, in fiscal 2007 we identified issues pertaining to integrated operations at the head office and manufacturing works and considered solutions. Our goal is to launch integrated operations for these sites by the end of fiscal 2009.

Organization Chart for Environmental Management

In addition, by extending environmental management to non-production sites, we will manage environment-related work in an integrated manner for all traditional business activities: materials procurement, product design, manufacturing, sales and recycling.

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 January 31, 2008 is as follows.

Mitsubishi Electric: 29
Domestic Affiliates: 60
Overseas Affiliates: 28

▸ Click here to view the list of ISO 14001 Certificated Companies.

Enhancing Global Environmental Management

The Mitsubishi Electric Group has held the Environmental Managers Conference every year since fiscal 1994. Managers in charge of environmental management for Mitsubishi Electric and domestic affiliates come together in one place to communicate information on activities related to the Environmental Plan, report on progress made and share success stories related to environmental initiatives. Regional environmental conferences have also been held overseas every year since fiscal 2005 for the four regions of the Americas, China, Asia and Europe. The conferences are intended to strengthen coordination between activities in Japan and overseas in support of overseas affiliates, and to improve environmental management at overseas sites.

Topics

Topics from the Fiscal 2007 Environmental Conferences

Environmental Managers Conference (June, 14, 2006 & December 12, 2006)

The June conference was attended by some 130 people. Activities and policies for fiscal 2007 were confirmed, findings of environmental audits conducted at Japan sites in fiscal 2006 were reported, reports were made on compliance with environmental regulations for products, projects for contributing to the environment were introduced, and debate took place on eco-factory and eco-office activities. Around 130 people also attended the December meeting, which included a talk by the company president. The findings of domestic environmental audits for the first half of fiscal 2007 were reported, measures and policies to address soil and groundwater contamination were confirmed, trends related to the management of hazardous substance contained in products were introduced along with environmental projects, and a progress report was made on eco-factory and eco-office activities.

Americas Environmental Conference (August 29, 2006)

The conference's participants included representatives from all affiliates in North America and affiliates in Mexico. It was reported that voluntary energy efficiency initiatives (for counteracting global warming) were in the process of being ramped up, and information was exchanged with more advanced parent factories in Japan. In fiscal 2008, we plan to invite South American affiliates to the conference.

China Environmental Conference (September 15, 2006)

Issues related to China RoHS involving manufacturers and distributors were clarified along with how to proceed. It was confirmed that actual implementation of compliance systems would be advanced through coordination between Japan and affiliates in China. Starting in fiscal 2008, we plan to locally train key environmental personnel in order to further raise the level of environmental management at Chinese affiliates.

Asia Environmental Conference (October 27, 2006)

The environmental policies of the Mitsubishi Electric Group were conveyed by Japanese representatives, while Thai affiliates reported highlights of their environmental initiatives. At the same time, discussions were held on region-wide environmental projects. Malaysian affiliates have signaled their desire to participate as well, so starting in fiscal 2008, we plan to invite them to the conference along with affiliates in the Philippines and Indonesia.

Europe Environmental Conference (February 27, 2007)

An expert from the Scottish government gave a talk and environmental initiatives in the region were introduced. Issues connected with Europe's environmental regulations dominated the meeting (regulations on chemical substances contained in products). We reconfirmed our policy of treating products that fall outside the purview of the RoHS Directive, like elevators and escalators, in the same way as products regulated by the directive. REACH, a European Community regulation on chemicals and their safe use (EC 1907/2006), which deals with the Registration, Evaluation, Authorization and Restriction of Chemical substances, is a major issue and information related to it will be shared among Europe affiliates in coordination with Japan.

Environmental Management

Management System

ISO 14001 Certification Companies

Mitsubishi Electric Corporation (Domestic)

Organization	Registration Date	Registration Number	Examination Organization
Mitsubishi Electric Corporation Inazawa Works	March 7, 1996	EC98J2017	JACO
Mitsubishi Electric Corporation Power Device Works Kumamoto Factory	March 25, 1997	EC96J1096	JACO
Mitsubishi Electric Corporation Fukuoka Area	September 29, 1997	EC97J1084	JACO
Mitsubishi Electric Corporation Kita-Itami Area	October 27, 1997	EC97J1098	JACO
Mitsubishi Electric Corporation Nagoya Works Area	November 25, 1997	EC97J1113	JACO
Mitsubishi Electric Corporation Communication Systems Center	November 25, 1997	EC97J1116	JACO
Mitsubishi Electric Corporation Communication Networks Center	November 25, 1997	EC97J1116	JACO
Mitsubishi Electric Corporation Mobile Terminal Center	November 25, 1997	EC97J1116	JACO
Mitsubishi Electric Corporation Fukuyama Works Area	November 26, 1997	EC97J1128	JACO
Mitsubishi Electric Corporation Shizuoka Works	December 22, 1997	EC97J1132	JACO
Mitsubishi Electric Corporation Nagasaki Area	December 24, 1997	EC97J1159	JACO
Mitsubishi Electric Corporation Power Distribution Systems Center	March 9, 1998	EC97J1211	JACO
Mitsubishi Electric Corporation Sagami Area	March 10, 1998	EC97J1220	JACO
Mitsubishi Electric Corporation Air Conditioning & Refrigeration Systems Works	March 10, 1998	EC97J1227	JACO
Mitsubishi Electric Corporation Nakatsugawa Works	March 24, 1998	EC97J1232	JACO
Mitsubishi Electric Corporation Himeji Area	March 24, 1998	EC97J1234	JACO
Mitsubishi Electric Corporation Mita Area	March 25, 1998	EC97J1249	JACO
Mitsubishi Electric Corporation Gumma Area	April 20, 1998	EC98J1008	JACO
Mitsubishi Electric Corporation Electronic Systems Group Kamakura Area	May 22, 1998	EC98J1013	JACO
Mitsubishi Electric Corporation Koriyama Area	June 22, 1998	EC98J1014	JACO
Mitsubishi Electric Corporation Western Area Research Institute	November 24, 1998	EC98J1103	JACO
Mitsubishi Electric Corporation Plant Engineering and Construction Division	December 24, 2004	YKA4003195	LRQA
Mitsubishi Electric Corporation Eastern Research Institute Area	July 28, 1999	EC99J1034	JACO
Mitsubishi Electric Corporation Kobe Works Kobe Area	March 10, 1998	EC97J1218	JACO
Mitsubishi Electric Corporation Energy & Systems Center	March 10, 1998	EC97J1218	JACO
Mitsubishi Electric Corporation Itami Works	March 9, 1998	JQA-E-90123	JQA
Mitsubishi Electric Corporation Itami Area (Transmission & Distribution Systems Center)	March 9, 1998	JQA-E-90123	JQA
Mitsubishi Electric Corporation Transmission & Distribution Systems Center Ako Area	August 1, 1997	EC97J1064	JACO

Mitsubishi Electric Corporation Kyoto Area	June 22, 1998	EC98J1021	JACO
Mitsubishi Electric Corporation Head Office, Branches (Certificated on March 20, 2003)	March 20, 2004	EC02J0333	JACO

Domestic Affiliates

Organization	Registration Date	Registration Number	Examination Organization
SPC Electronics Corporation	March 15, 2000	EC99J1204	JACO
Mitsubishi Electric Life Service Corporation	June 22, 2005	EC05J0082	JACO
Mitsubishi Electric Logistics Corporation	February 14, 2003	JQA-EM1909	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 Center)	March 25, 1998	EC97J1246	JACO
Mitsubishi Electric Information Technology Corporation (Shonan Office)	March 25, 1998	EC97J1246	JACO
Mitsubishi Electric Business Systems Co., Ltd.	December 28, 2004	EC04J0414	JACO
Itec Hanshin Co., Ltd.	February 25, 2004	EC03J0361	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
Tada Electric Co., Ltd. Okayama Factory	August 25, 1999	EC99J1051	JACO
Ryosan Industry Corporation	December 28, 2001	JQA-EM2052	JQA
Ryosan Industry Corporation Asahi Factory	February 17, 2006	JQA-EM-5184	JQA
Ryoden Kasei Co., Ltd.	December 24, 1999	JQA-EM0662	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
Mitsubishi Electric Micro-Computer Application Software Co., Ltd.	March 23, 2001	JQA-EM1463	JQA
Taiyo Musen Co., Ltd.	March 9, 2001	JQA-EM1378	JQA
Nihon Kentetsu Co., Ltd.	March 16, 2001	JQA-EM1409	JQA
Mitsubishi Electric Lighting Corporation	March 15, 2000	EC99J1217	JACO

Mitsubishi Electric Home Appliance Co., Ltd.	March 17, 2006	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	April 18, 2001	EC01J0002	JACO
Ryohoku Electronics Corporation	May 12, 2004	EC04J0051	JACO
Osram-Melco Ltd. Kakegawa Factory	September 1, 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
Advanced Display Inc.	December 27, 2000	EC00J0189	JACO
Melco Display Technology Inc.	December 27, 2000	EC00J0189	JACO
Sun-A Micro-Semiconductor Co., Ltd.	April 1, 2004	JP04/00476EM	SGS

Overseas Affiliates

Company Name	Registration Date	Registration Number	Examination Organization
Mitsubishi Electric Power Products, Inc.	March 3, 2003	CERT-05051 -2003	DNV
Mitsubishi Digital Electronics America, Inc.	February 1, 2002	1111	ANAB
Mitsubishi Electric Automation, Inc.	July 25, 2002	C2002-01155	Perry Johnson Register, Inc.
Mitsubishi Electric Automotive America, Inc.	June 24, 1999	58272	BVQI
Mitsubishi Electric de Mexico S.A. de C.V.	March 17, 2004	0/1/22/959	PROFEPA
Mitsubishi Electric Air Conditioning Systems Europe Ltd.	January 21, 2000	EMS 53485	BSI Management Systems
Mitsubishi Electric Automotive Europe B.V.	February 16, 2005	NLDGNG 004681	ISO14001:2004
Electric Powersteering Components Europe s.r.o.	May 2, 2006	323a-04-01	CERT-ACO, s.r.o.
Mitsubishi Electric Automotive Czech s.r.o.	October 18, 2006	622-06-04	CERT-ACO
Mitsubishi Electric Automotive India Pvt. Ltd.	April 3, 2006	00190-2006- AE-BDA-RvA	DNV
P.T. Lippo Melco Auto-Parts	September 16, 2001	2009822	Kema-Registered Quality. Inc
Mitsubishi Elevator Asia Co., Ltd.	October 30, 1998	169847	BVQI
Siam Compressor Industry Co., Ltd.	October 31, 2006	01 104 7040	TUV Rheinland
Mitsubishi Electric Consumer Products (Thailand) Co., Ltd.	January 1, 2001	78649	BVQI
Kang Yong Electric Public Co., Ltd.	September 21, 2001	89194	BVQI
Mitsubishi Electric Automation(Thailand) Co., Ltd.	January 6, 2006	'059	AJA
Mitsubishi Electric Thai Auto-Parts Co., Ltd.	July 11, 2001	161047	BVQI
Laguna Auto-Parts Manufacturing Corporation	August 7, 2006	TUV 104 05 0597	TUV
Mitsubishi Electric (Malaysia) Sdn. Bhd.	May 22, 2006	M00320001	SIRIM QAS International Sdn. Bhd.
China Electric Manufacturing Corp	November 21, 1998	4MDE001	BSMI

XD-Mitsubishi Electric Switchgear Co., Ltd.	July 20, 2001	0015-2001-AE-RGC-RvA	DET NORSKE VERITAS
Shanghai Mitsubishi Elevator Co., Ltd.	October 23, 1998	C982001	LRQA
Shandong Hualing Electronics Co., Ltd.	November 26, 2002	03-2002-110	CEPREI Environmental ManagementSystem Certification body
Mitsubishi Electric (Guangzhou) Compressor Co., Ltd.	April 1, 2004	17-2004-013	TUV
Shanghai Mitsubishi Electric & ShanglingAir-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.	November 21, 2000	0106E20071RIM/2100	CQC
Mitsubishi Electric Shihlin Automotive Changzhou Co., Ltd.	December 17, 2004	01-104-043218	TUV

Environmental Management

Environmental Audits

Three Types of Environmental Audits for Multifaceted Monitoring

The Mitsubishi Electric Group utilizes a combination of three types of audits that differ in terms of the auditing body, standards and other aspects. This serves to improve the level of environmental management in a multifaceted manner.

Internal environmental audits, the first type, are conducted at our manufacturing works, plants, research centers and affiliated companies once or twice a year to check for compliance with national and local regulations and conformance with ISO standards at each organization. Conformance audits, the second type, are conducted by certification bodies based on ISO 14001 to check environmental management systems for conformance with ISO standards.

Three Types of Audits for Environmental Management

The third type of environmental audit is conducted by the head office. This type of audit monitors the progress of all domestic branch offices, manufacturing works and affiliated companies in meeting the goals of the Group's Environmental Plan as well as their compliance with laws and regulations. (The audits are conducted once every two years for branch offices and manufacturing works, and annually for affiliates.) The findings of audits by the head office are reported to the president by the Environmental Executive Officer and conveyed to Group manufacturing works and affiliates through the Environmental Managers Conference, reports and other means. The findings are then used to improve the quality of environmental management at each site.

Auditing Body	Manufacturing works, plants, research centers, affiliates	Head office	ISO certification body
Auditing standards	Laws and regulations ISO standards Site-specific rules	Laws and regulations Company environmental rules Environmental Plan	ISO standards
Frequency	Semiannually or annually	Once every two years or annually	Annually

Findings of Head Office Environmental Audits and Subsequent Actions

Environmental audits conducted by the head office involve interviews with managers at Mitsubishi Electric business sites and affiliated companies. We check compliance and environmental risk management, which encompasses disaster prevention and safety at worksites, the effectiveness of internal environmental audits, the handling of chemical substances used in products and during manufacturing, product assessments and other environment-related areas, and we confirm progress made against the Environmental Plan.

In fiscal 2007, these environmental audits were conducted at 92 domestic sites in the Group and confirmed that progress was adequate.

At overseas sites in fiscal 2007, we conducted environmental inspections at 12 sites in conjunction with the regional environmental conferences.



An environmental audit in progress

Environmental Management

Environmental Training

Improving Environmental Education and Environmental Awareness

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. Employees of Mitsubishi Electric and our domestic affiliates are subject to these educational programs. Career stages are categorized into new hires, section managers, management and overseas appointments. Job-specific training consists of educational programs for environmental management, materials, product design, manufacturing and sales divisions.

Training for environmental management divisions focuses on training environmental specialists; specifically, key environmental personnel and environmental auditors. Starting in fiscal 2007, we have also provided environmental training for head office divisions in an effort to impart basic knowledge for promoting environmental policies.

These environmental training programs have been provided to employees in Japan, but we have plans to extend their scope to overseas employees as well.

In addition to environmental training, the Mitsubishi Electric Group strives to foster an environmental mindset in all employees through a periodical called Eco-News and other means. Also, in fiscal 2007, we started an outdoor school leadership course and an in-house project for promoting conservation of local woodlands, in order to encourage nature conservation by employees and their families.

Topics

Training Outdoor School Leaders
In fiscal 2007, we began training outdoor school leaders in partnership with the Japan Outdoor Life Promotion Society. The leaders teach children the importance of protecting the environment.

The program involves recruiting leader candidates from within the company, providing training through a multi-day workshop, and then having the new leaders conduct nature conservation classes for children at Mitsubishi Electric sites. This program is intended to increase environmental awareness in employees and their families.

▸ Outdoor Classroom of Nature Conservation Lectures

Training Key Environmental Personnel

Many veteran employees who have supported their workplaces on the environmental management front over the years (certified Environmental Pollution Control Administrators and others) have reached mandatory retirement age, so we are devoting effort to training the next generation of key environmental personnel, who will inherit the technologies and experience of this expert class and promote environmental management activities for the company into the future.

We have held group training sessions (five per year) for key environmental personnel since fiscal 2005. Veteran employees who have been involved in pollution control and waste management serve as teachers, and young employees in their twenties and thirties selected from our nationwide organization learn the fundamentals of environmental laws and regulations, methods of risk management for environmental facilities, and practical procedures for risk communication. In fiscal 2007, all 24 employees who participated in the program passed the final exam and finished the program (bringing the three-year total to 64). They are now directly involved in environmental management at our manufacturing works, plants and affiliated companies.

Training for key environmental personnel: learning about how to survey waste processors

In addition, one of the outcomes of group training is that key environmental personnel form networks with one another, which facilitates communication of various types of information, including on waste-related issues, environmental facility updates and facilities usage. We plan to train 100 key environmental personnel by fiscal 2009 to secure the capacities needed for maintaining and implementing environmental management.

Key Environmental Personnel Curriculum and Acquired Skills

Curriculum	Features	Skills
Explanation of legal requirements (basic knowledge and application)	Experiences to date and necessary knowledge are taught by teachers within the company	Ability to understand the legal requirements of environment-related laws and regulations, and explain them to others
Identification of risks related to environmental facilities and formulation of improvement measures	Management know-how is taught using past accidents and incidents as case studies	Ability to discover and resolve potential environmental risks at worksites before they materialize
Practice of internal auditing	Onsite inspections and compliance audits are practiced	Ability to conduct audits with knowledge and experience in environment-related laws and regulations

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.

Internal auditors at each business site must fulfill the requirements established in rules specific to each site. However, becoming qualified to participate head office-led audits also requires that employees who meet the requirements established by company rules first participate in multiple audits as observers. In order to train this level of environmental auditor, the Mitsubishi Electric Group conducts a number of environmental auditor training programs in line with candidate skill levels.

Environmental auditing guidelines and case studies

An offsite training session for environmental auditors

Environmental Management

Environmental Risk Management

Preventing Environmental Accidents

Mitsubishi Electric's 5th Environmental Plan contains policies for preventing environmental accidents before they occur; specifically, by promptly replacing obsolete facilities and practicing preventive maintenance through sites inspecting one another.

With respect to promptly replacing obsolete facilities, we are conducting surveys of facilities at least ten years old and are replacing them in a scheduled manner.

In terms of practicing preventive maintenance through sites inspecting one another, we have set up an investigative committee to look into eco-factory and eco-office evaluation methods, and we have formulated indicators to quantify potential environmental risks at each business site for different environment-related areas. We will quantitatively assess potential risks and risk reduction initiatives depending on the type of environmental impact. We will clarify the amount of risk remaining for each item through comparison with established eco-factory standards and specify areas requiring improvement. Moreover, we plan to expedite the early prevention of risk by widely sharing information on these initiatives.

Topics

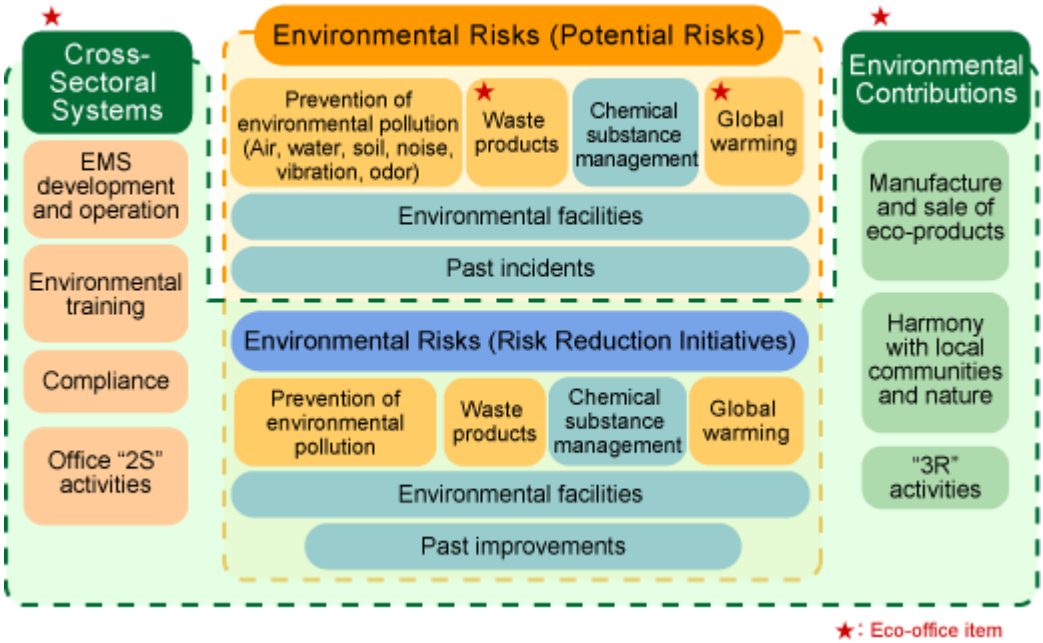
Assessment Indicators for Environmental Risk

There are a variety of environmental activities taking place at our business sites, but for the sake of creating indicators we have broadly classified them into the following three categories.

1) Cross-sectoral systems (systems, mechanisms, etc.)
2) Environmental risks (subdivided by environmental impact)
3) Environmental contributions (external, internal)

At business offices, we have placed heavy emphasis on cross-sectoral systems and environmental contributions, and for environmental risks we have decided to primarily evaluate issues pertaining to waste products and global warming. The assessment indicators we've created will be reviewed every year and will be added to, revised or eliminated in line with prevailing conditions. The indicators are aimed at making environmental risks more transparent.

Assessment Indicators and Framework for Environmental Risk



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.

In fiscal 2007, we concluded an agreement with the Japan Environmental Safety Corporation (JESCO), a fully owned government organization that processes PCB waste under the supervision of the government. Our goal is to complete PCB processing by 2011 while continuing to appropriately store and manage it until that time.

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.

Products Containing Asbestos

As of September 2006, we have completed the process of finding alternative substances for Mitsubishi Electric products that had contained asbestos in the past. We have also taken other measures to deal with the problem, including eliminating inventory containing asbestos.

Environmental Management

Environmental Accounting

Scope and Period of Data Compilation and Method of Disclosure

Scope and Period of Data Compilation

- Period: April 1, 2006 March 31, 2007
- Scope of Data Compilation: Mitsubishi Electric Corporation and 101 of its domestic and overseas affiliates and subsidiaries (79 domestic, 22 overseas)

The scope of data compilation has been expanded to include all companies that have established an environmental plan (the same scope as this Environmental Report) in order to more accurately ascertain environmental management for the group as a whole.
Scope until fiscal 2006: 50 companies subject to environmental accounting (29 domestic, 21 overseas)
Scope in fiscal 2007: 101 companies that have established an environmental plan (79 domestic, 22 overseas)
Note: The number of companies with an environmental plan increased from 85 companies in fiscal 2006 (62 domestic, 23 overseas).

Method of Disclosure

Data is disclosed in accordance with the environmental accounting guidelines 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.

Fiscal 2007 Overview

Environmental costs and benefits increased substantially over the previous fiscal year due to expanding the scope of data compilation.

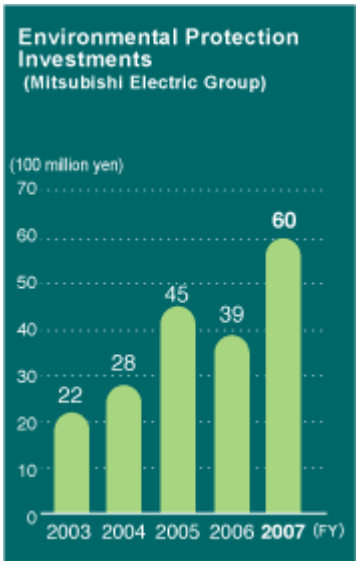
Environmental Protection Costs

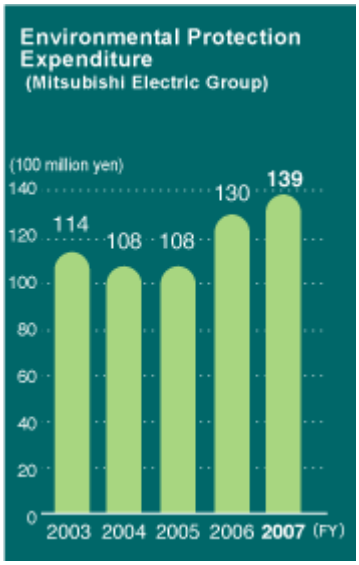
■ Capital Investment

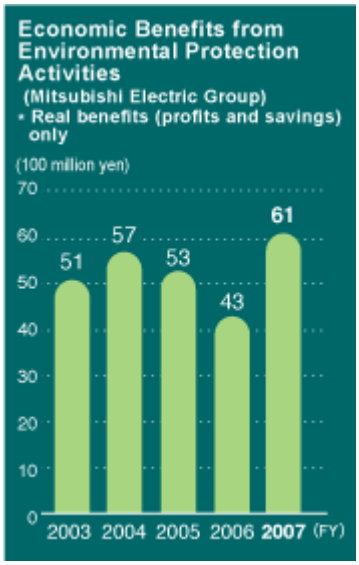
We proactively invested in high-efficiency equipment and energy efficiency support devices at a targeted rate of 0.1% of net sales, in order to help prevent global warming. We also reinforced defensive measures by investing in pollution prevention initiatives, such as wastewater treatment facilities and measures to prevent air pollution.
In the areas of parts and materials procurement and environmental measures for products, we invested in production lines for both energy efficient consumer products and industrial products. Concentrated investment, primarily in replacing production lines, in order to comply with the RoHS Directive ended in fiscal 2006, so the overall amount of investment decreased.
As a result, capital investment increased ¥2.18 billion over the previous year to ¥6.04 billion on a group basis, and rose 1.04 billion to ¥3.47 billion for Mitsubishi Electric Corporation.

■ Expenditure

Environmental protection expenditure increased 900 million over the previous year to 13.88 billion on a group basis. It decreased 430 million to 9.94 billion for Mitsubishi Electric Corporation. The change was largely due to expanding the scope of data compilation.







Physical Benefits (Compiled for Japan Only)

The overall amount of physical benefits increased substantially due to expanded production. Per unit of net sales, benefits were equivalent to the previous year. The increase in emissions of chemical substances increased due to higher production volume and an increase in the number of managed substances.

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 use of our refrigerators, air conditioners, total heat exchange ventilators (Lossnay), energy efficient lamps, energy efficient electrical discharge machines, elevators with inverters, photovoltaic power systems and other products.

Environmental Protection Costs

Mitsubishi Electric Group Mitsubishi Electric (100 million yen)

Item	Capital Investment	Costs	Total	Year-on-Year Change	Main Costs
Business Area Activities	44	56.3	100.3	20.5	
	23.6	37.2	60.8	11.7	
Pollution Prevention	13.8	20.9	34.7	6.2	Wastewater treatment (facilities, expenditure), deodorization (facilities, expenditure), vehicle replacement (investment)
	4.4	14.5	18.9	2.9	
Global Environmental Protection	28.2	4.0	32.2	11.4	Capital investment to upgrade air conditioners, upgrade transformers, convert to battery-operated forklifts, and install energy efficient production lines
	19.1	2.6	21.7	8.7	
Resource Recycling	2.0	31.4	33.4	2.9	Contracting out waste processing (expenditure), reduced use of wood packing materials (expenditure), contacting out product scrap recycling (expenditure)
	0.1	20.1	20.2	0	
Green Purchasing/Procurement and Product-Related Activities	14.3	7.6	21.9	(4.4)	Installation of production facilities for energy efficient products (investment), conversion to compliant materials for products not subject to the EU's RoHS Directive (expenditure)
	9.4	6.6	16.0	(9.3)	
Management Activities	0.1	35.4	35.5	6.9	Expenditure on training for environmental auditors at affiliates, personnel costs for environmental staff, disclosing environmental information, greening business sites, etc.
	0.0	24.4	24.4	2.3	
Negative Environmental Impact Reduction and R&D Activities	2.0	36.9	38.9	8.3	Development costs for advanced devices for sorting waste plastics, development costs for inverter control power modules, development costs for energy efficient air conditioning

	1.7	28.9	30.6	0.2	and refrigeration, development for resource efficiency at power distribution facilities, development of technologies for limiting emission of air polluting gases, etc.
Community Activities	0.0	1.1	1.1	0.8	Expenditure on offsite cleanup activities, environmental communication activities, etc.
	0.0	1.0	1.0	0.9	
Environmental Damage	0.0	1.5	1.6	(1.3)	Expenditure on soil remediation measures and groundwater pollution measures
	0.0	1.3	1.3	0.3	
Total	60.4	138.8	199.3	30.8	
	34.7	99.4	134.1	6.1	
Year-on-Year Change	21.8	9	30.8		
	10.4	(4.3)	6.1		

Environmental Protection Benefits

Mitsubishi Electric Group Mitsubishi Electric

Item	Unit	Fiscal 2007	Year-on-Year Change	Year-on-Year Per Net Sales
Total Energy Used	10,000 GJ	1,463	(2)	93%
		1,026	(14)	93%
Total Water Used	10,000 m3	923	12	95%
		683	8	95%
Total Greenhouse Gas Emissions	10,000 tons-CO_2	170	69	157%
		91	22	124%
Total Atmospheric Emissions of Chemical Substances	tons	816	164	117%
		714	190	128%
Total Water Discharged	10,000 m3	737	11	95%
		579	19	97%
Total Discharge of Chemical Substances in the Water and Soil	tons	4	(2)	64%
		2	0	104%
Total Waste Discharged	tons	147,931	11,453	101%
		86,031	2,593	97%
Final Disposal	tons	1,088	(435)	67%
		238	(17)	88%
Total Discharge of Chemical Substances in Waste	tons	473	190	156%
		387	164	162%

Economic Benefits from Environmental Protection Activities (Real Benefits)

Mitsubishi Electric Group Mitsubishi Electric (100 million yen)

Item	Amount	Year-on-Year	Change Main Benefits
Earnings	29.4	10.5	Gains on sales of waste metal and waste plastic
	17.7	8.1	
Savings	31.9	8.4	Reduced material costs from converting to energy-efficient product production, reduced use of packaging materials, reuse of parts (recycling management), reduced use of chemicals
	18.7	2.5	
Total	61.3	18.9	
	36.4	10.6	

Economic Benefits from Environmental Consideration in Products and Services

Mitsubishi Electric Group Mitsubishi Electric (100 million yen)

Item	Amount Main	Products
Customer Economic Benefits	914.9	Refrigerators, air conditioners, total heat exchange ventilators (Lossnay), energy efficient lamps, energy efficient electrical discharge machines, elevators with inverters, photovoltaic power systems
	872.7	
Environmental Improvement Effects	29.9	
	29.0	

Environmental Report

Environmental Performance

Lifecycle Environmental Impact

In order to create a recycling-based society and reduce environmental risk, Mitsubishi Electric tracks overall environmental impact throughout product lifecycles and uses this information in devising effective measures and activities.

More

Product Design for the Environment

We develop products that pursue both functionality and environmental compatibility.

More

Recycling End-of-Life Products

In compliance with the Home Appliance Recycling Law and the Law for the Promotion of Effective Utilization of Resources, Mitsubishi Electric promotes the end-of-life recycling of four types of home appliances as well as personal computers. We are also devoting resources to the development of new recycling technologies.

More

Green Procurement

Mitsubishi Electric carries out green procurement in compliance with environmental regulations. We intend to continue to work to reduce environmental impact down the supply chain.

More

Preventing Global Warming

We will continue to work to meet reduction targets for carbon dioxide and other greenhouse gases, and contribute to the fight against global warming.

More

Managing Chemical Substances

Mitsubishi Electric continues to reduce the discharge of harmful chemical substances and emission of greenhouse gases through self controls that utilize our proprietary chemical substance management system.

More

Managing Wastes

With a view to realizing a recycling-based society, Mitsubishi Electric works to make effective use of resources to the full extent possible, strengthen controls at the level of waste generation, and reduce, reuse or recycle waste that is generated.

More

Eco-Logistics and Reduced Packaging

We are actively working to reduce the environmental impact of logistics through distribution reforms in the form of modal shifts from trucks to rail, and the elimination of the use of wood in packaging materials.

More

Environmental Performance

Lifecycle Environmental Impact

Overall Environmental Impact

Scope of Data Compilation: Mitsubishi Electric Group (Mitsubishi Electric Corporation's production facilities in Japan, 79 affiliates in Japan, and 22 affiliates overseas)

IN

Materials for Manufacturing				
		Mitsubishi Electric	Affiliates (Japan)	Affiliates (Overseas)
Materials *1		460,000 tons	120,000 tons	230,000 tons
Manufacturing				
Electricity		915 million kWh	385 million kWh	273 million kWh
Natural gas		23,400,000 m3	3,160,000 m3	14,100,000 m3
LPG		2,180 tons	3,430 tons	1,840 tons
Oil (crude oil equivalent)		6,710 kl	8,060 kl	691 kl
Water		6,830,000 m3	2,400,000 m3	1,530,000 m3
	Surface water	1,440,000 m3	720,000 m3	370,000 m3
	Industrial water	2,450,000 m3	430,000 m3	1,060,000 m3
	Groundwater	2,930,000 m3	1,250,000 m3	20,000 m3
	Others	0 m3	0 m3	90,000 m3
	Reuse of Water	2,780,000 m3	1,700,000 m3	50,000 m3
Controlled chemical substances (amounts handled)		5,204.7 tons	2,153.3 tons	5,085 tons
Ozone depleting substances (amounts handled)		62.0 tons	0.4 tons	0 tons
Greenhouse gases (amounts handled)		277.3 tons	136.2 tons	216 tons
Volatile Organic Compounds (amounts handled)		1,505.6 tons	1,042.5 tons	194 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	5,790,000 m3	158 m3	115 m3
	Controlled Chemical substances	12.1 tons	1.7 tons	0.0 tons
	BOD (biological oxygen demand)	108.4 tons	4.9 tons	61.4 tons
	COD (chemical oxygen demand)	40.1 tons	5.4 tons	68.5 tons
	Nitrogen	67.1 tons	16.8 tons	3.0 tons
	Phosphorus	4.9 tons	0.5 tons	0.0 tons
	Suspended solids	85.7 tons	3.7 tons	92.9 tons
	n-hexane extracts (mineral)	3.6 tons	0.3 tons	0.0 tons
	n-hexane extracts (active)	4.2 tons	0.0 tons	0.0 tons
	Total emissions of zinc	3.1 tons	0.1 tons	0.0 tons
Releases to the atmosphere	Carbon dioxide (CO_2)	459,000 tons-CO_2	200,000 tons-CO_2	234,000 tons-CO_2
	Controlled Chemical substances (excluding amounts contained in other waste)	714.1 tons	101.5 tons	13.6 tons
	Volatile organic compounds (toluene, xylene, styrene)	662.4 tons	85.2 tons	14.2 tons
	Greenhouse gases	138,000 tons-CO_2	120,000 tons-CO_2	0.00 tons-CO_2
	Ozone depleting substances	0.015 ODPt	0.375 ODPt	0.00 ODPt
	Sulfur oxide (SOx)	1.3 tons	1.00 tons	0.10 tons
	Nitrogen oxide (NOx)	39.2 tons	3.2 tons	1.1 tons
	Dust	1.7 tons	1.8 tons	1.5 tons
	Amount of CFCs recovered	31.43 tons	224.21 tons	-

Waste			
Total waste emissions	86,031 tons	61,900 tons	54,190 tons
Volume recycled	74,480 tons	49,428 tons	47,023 tons
Waste treatment subcontracted out	5,110 tons	1,622 tons	7,167 tons
Final disposal	238 tons	850 tons	3,680 tons
Weight reduction in-house	5,093 tons	0 tons	0 tons
Product *2			
Weight of all Eco-Products sold	333,000 tons	49,000 tons	150,000 tons
Weight of packaging materials	41,000 tons	0.9000 tons	22,000 tons

*2: Product: Weight related to Eco-Products

IN

Selling and Distribution			
	Mitsubishi Electric	Affiliates (Japan)	Affiliates (Overseas)
Fuel for trucks (gasoline)	49 kl	3,100 kl	34 kl
Fuel for trucks (diesel)	26,000 kl	6,365 kl	21,265 kl
Fuel for rail (electricity)	1,540 MWh	351 MWh	0 MWh
Fuel for marine transport (bunker oil)	470 kl	100 kl	5,515 kl
Fuel for air transport (jet fuel)	405 kl	135 kl	5,970 kl

OUT

Selling and Distribution			
	Mitsubishi Electric	Affiliates (Japan)	Affiliates (Overseas)
Carbon Dioxide (CO_2)	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)
Electricity *3	7,960 million kWh	3,890 million kWh	18,620 million kWh

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

OUT

Emissions *4			
	Mitsubishi Electric	Affiliates (Japan)	Affiliates (Overseas)
Carbon dioxide (CO_2) *4	3,359,000 tons-CO_2	1,642,000 tons-CO_2	-

*4: Emissions, Carbon Dioxide (CO_2): Amount related to Eco-Products

IN

Products at End of Life *5	
	Mitsubishi Electric
Air conditioners	10,111 tons
Televisions	8,477 tons
Refrigerators	18,192 tons
Washing machines	6,022 tons
Personal computers	161 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	23,220 tons
Glass	3,457 tons
CFCs	103 tons
Others	6,670 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

Environmental Performance

Product Design for the Environment

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

The Mitsubishi Electric Group introduced 3R Product Assessment*1 in 1991 to evaluate and reduce the environmental impact of products from the "MET" perspective*2 for entire product lifecycles, and we have carried out the Design for the Environment (DFE) program. When products targeted by this program achieve an exceptional level of environmental friendliness based on their Factor X assessments, an indicator for improving environmental efficiency, they are certified as Eco-Products or Hyper Eco-Products. Hyper Eco-Products have even more prominent environmental features than Eco-Products.

In fiscal 2007, 79 of Mitsubishi Electric's 166 product groups were covered by the Design for the Environment program. Of these, the Eco-Products ratio (which is based on production amount) was 82%, while 42 products were certified as Hyper Eco-Products. Under the 5th Environment Plan, products are divided into mass-produced products and other products. Our goal is to raise the Eco-Products ratio to 100% for mass-produced products by fiscal 2009. The ratio in fiscal 2007 for this category was 88%; it was 43% for other products.

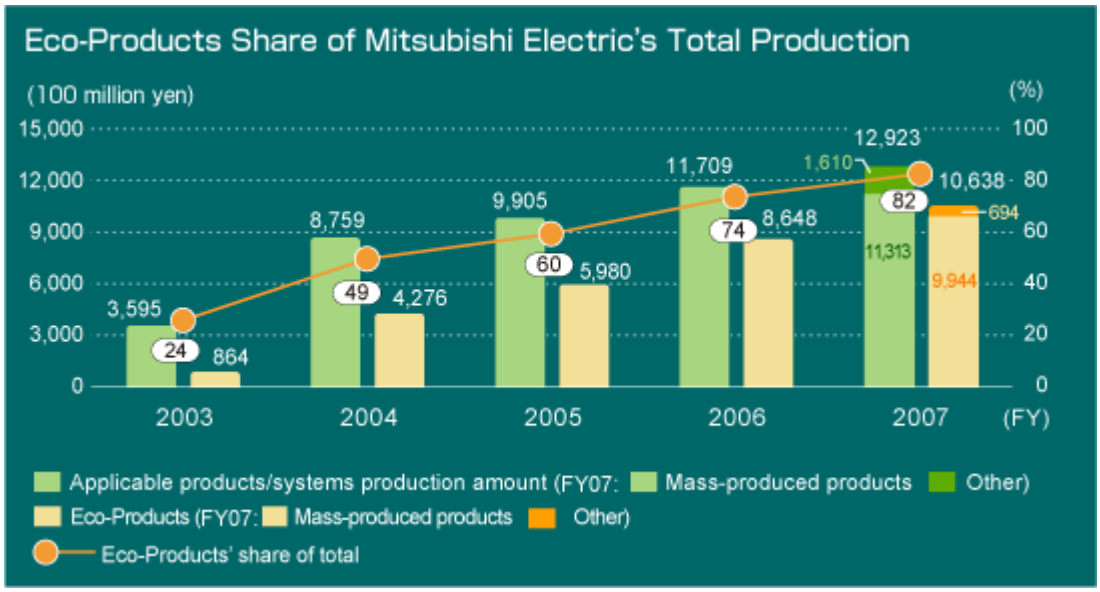
To achieve this goal we established an in-house dedicated technical committee to consider the technical issues involved. We are also training key DFE personnel for this program in the areas of 3R design and LCA*3 evaluation techniques.

Notes:

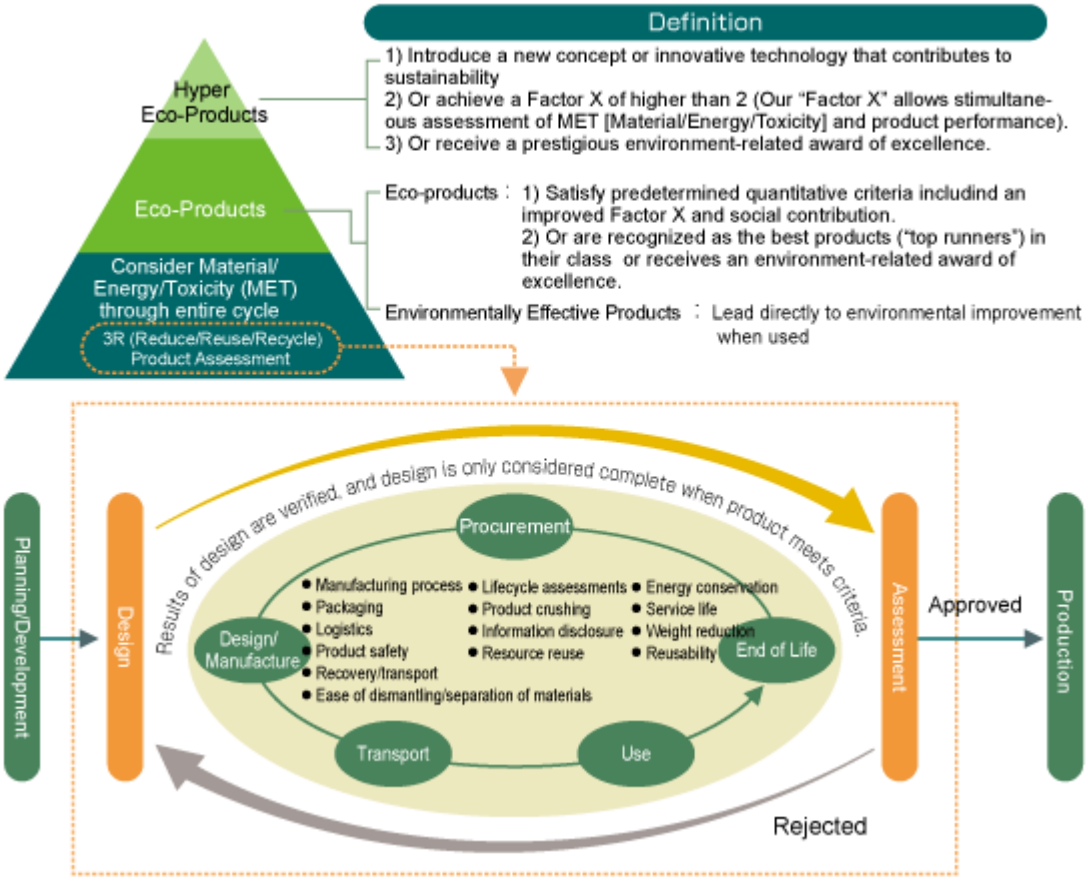
*1. 3R refers to reducing, reusing and recycling waste products. 3R Product Assessments are product evaluations based on the Law for the Promotion of Effective Utilization of Resources (3R Law).

*2. 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

*3. LCA stands for lifecycle assessment, a procedure for evaluating the environmental impact of products throughout their entire lifecycles.



The Concept of Design for the Environment



Utilizing Factor X

Factor X is an indicator the eco-efficiency of products. The larger the value of X, the more a product's performance has improved and its negative environmental impact has been reduced. In 2001, we were the first in the industry in Japan to apply the concept of Factor X for product evaluations. We are currently working to develop and disseminate products that achieve a target of Factor 4.

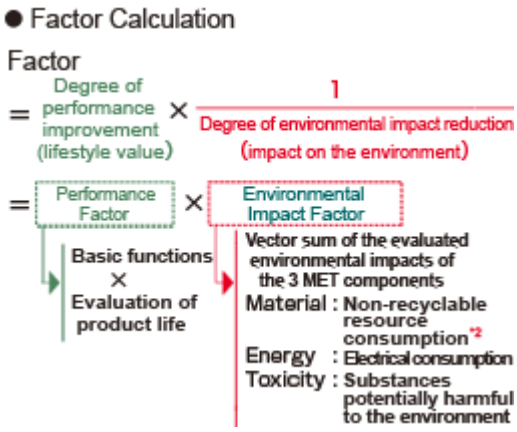
Mitsubishi Electric's formula for calculating Factor X consists of three components: resources input, energy used, and inclusion of substances potentially harmful to the environment. Since April 2004, we have included the degree of improvement in product performance to the scope of evaluation to make improvement visible even in core products rooted in mature technologies.

The Factor X indicator was originally introduced by home appliance manufacturers to show the degree of improvement in the environmental efficiency of their products, but there are differences among companies in how the indicator is calculated, which means it cannot be used by consumers to compare products from different companies. In 2006, a group of five home appliance manufacturers, including Mitsubishi Electric, drafted standardization guidelines to unify the calculation formula under specific conditions. A Common Factor indicator was also proposed to show improvement in product value (basic function multiplied by standard usage period) and environmental impact (emission of greenhouse gases during the product's lifecycle).

The guidelines, however, only cover four types of appliances -- air conditioners, refrigerators, lamps and light fixtures -- and the indicator only shows the impact on global warming. As of the present, therefore, it is limited and does not allow product comparisons across companies. The Mitsubishi Electric Group puts emphasis not only on the impact on global warming but also on various types of environmental impact as viewed from the MET perspective, so for the time being we plan to continue with product development based on our traditional Factor X indicator. At the same time, however, we plan to continue to participate in standardization efforts, work to expand the range of applicable products and resolve technical issues.

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 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 2007, we used the LCA approach to evaluate the environmental impact of recycling technology for mixed plastic from used home appliances. The results made it clear that CO_2 emissions from mixed plastic recycling are up to 80% less than disposal in landfills, incineration, conversion to fuel for blast furnaces and other traditional disposal methods. Based on these findings, we will promote even greater application of material recycling.

KEYPOINT

First in the Industry to Use LCA to Quantify CO_2 Emissions from Mixed Plastic Processing

Working together with Hyper Cycle Systems, our home appliance recycling plant in Japan, Mitsubishi Electric has promoted the development of original material recycling technologies that give mixed plastic obtained from used appliances new life as high-grade polypropylene (PP) , acrylonitrile-butadiene-styrene (ABS) and polystyrene (PS) .
Of these plastics, recycling technology has been established for polypropylene and applied to Mitsubishi Electric appliances since fiscal 2007. In order to clarify the environmental contribution of this technology, we collected data such as recycling volumes and energy consumed in each process at our appliance recycling plant and constructed a proprietary database of waste processing processes. Based on this data, we used the LCA approach to quantify environmental impact (CO_2 emissions) during mixed plastic processing, becoming the first in the industry to do so.
We plan to also establish closed-cycle recycling technologies for ABS and polystyrene.

***1: LCA: Life Cycle Assessment**
This 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.

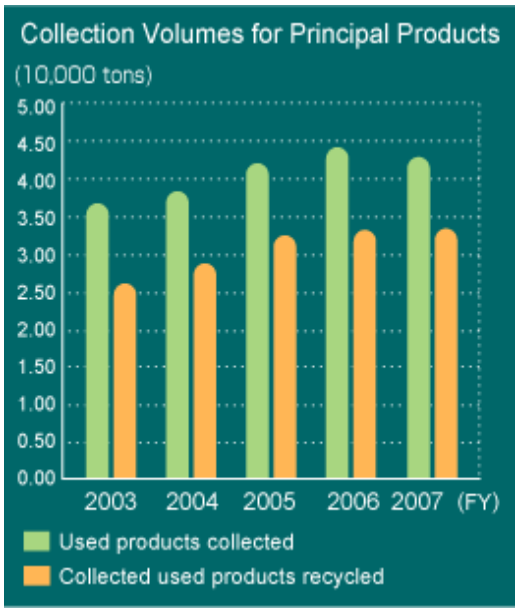
▸ Plastic Recycling:Developing Technologies on the Cutting Edge

Environmental Performance

Recycling End-of-Life Products

Recycling Four Kinds of Home Appliances

Two years prior to the April 2001 when Law for the Recycling of Specified Kinds of Home Appliances (Home Appliance Recycling Law) was enforced in Japan, in 1999 Mitsubishi Electric became the first in the industry to operate 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 has recycled approximately 295,000 tons (as of March 2007). 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*1 to establish recycling plants in 16 locations nationwide. The companies work together to recycle end-of-life home appliances. In fiscal 2007, Mitsubishi Electric recycled 1.06 million units of the four kinds of home appliances (98% of the previous year's level) and had a recycling ratio of 78%.

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

Dismantling products at Hyper Cycle Systems

▸ Plastic Recycling:Developing Technologies on the Cutting Edge

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, and used domestic use computers since October 2003. In fiscal 2007, we collected a total of 10,682 computers, which represented a recycling rate of 74%.

Mitsubishi Electric established the Information Device Recycling Center to take inquiries and applications for collection and recycling. Collected used Computers are sent to Hyper Cycle Systems, or other recycling plants established jointly by electric appliance manufacturers, for dismantling and sorting. We work to recycle resources under a management organization that lends transparency to the processing flow from collection to recycling by a web-based system.

We have the risk of leak of data in the hard disk drives of disposed computers. Computer users have basically the responsibilities to prevent the data leak, though 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 the secret data from leaking out. Interested computer owners can also pay for a program to delete all data completely before their used computer are taken away.

Home Appliance Collection and Recycling (Fiscal 2007)

	Unit	Air Conditioners	Televisions	Refrigerators/ Freezers	Washing Machines	Total
Units received at designated collection points	1,000 units	243	304	321	191	1,059
Units processed	1,000 units	244	302	321	191	1,058
Weight processed	Tons	10,111	8,477	18,192	6,022	42,802
Weight reused in products	Tons	8,861	6,456	13,172	4,850	33,339
Ratio reused in products	%	87	74	72	80	-

Material Recycling from Used Computers (Home and Office) (Fiscal 2007)

	Unit	Desktop		Notebooks		CRT Displays		LCD Displays		Total	
Collected	Tons	62.4		7.6		82		8.7		160.7	
		Office 55.9	Home 6.6	Office 7.3	Home 0.3	Office 79.5	Home 2.6	Office 8.7	Home 0	Office 151.4	Home 9.5
Units collected	Unit	4,163		1,756		3,533		1,230		10,682	
		Office 3,726	Home 437	Office 1,690	Home 66	Office 3,422	Home 111	Office 1,225	Home 5	Office 1,0063	Home 619
Weight recycled	Tons	62.4		7.6		82		8.7		160.7	
Weight reused	Tons	48.8		4.7		58.8		6.7		119	
Ratio of reuse and material recycling	%	78.1		61.6		71.7		76.7		-	

- Figures for office computers are combined figures for Mitsubishi Electric Information Technology Corp., NEC Display Solutions Ltd. and Mitsubishi Electric Corp.
- Figures for home computers are figures from Mitsubishi Electric Information Technology Corp.

Environmental Performance

Green Procurement

The Globalization of Green Procurement

The Mitsubishi 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.

In fiscal 2007, we revised the standards to reflect the Joint Industry Guideline (JIG) *1 and issued an updated version in Japanese, English and Chinese in November. Surveys of chemical substances contained in procured products are conducted for the 24 JIG substances on the basis of the JGPSSI Ver. 3 survey format *2. We are working in this way to standardize green procurement throughout the Group.

In addition, we introduced a Green Accreditation system in order to faithfully comply with the EU's RoHS Directive, which went into effect last year. Suppliers that comply with environmental regulations and regulations for chemical substances contained in products are certified as green suppliers. This program serves to ensure the quality of procured products and help manage the risk of contamination by a banned substance. We have a goal of procuring all production materials used in products and secondary materials used during production from certified green suppliers by the end of fiscal 2009. Moreover, we will work together with certified green suppliers to prepare for compliance with the EU's REACH policy (described below), 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. JGPSSI is an abbreviation for the Japan Green Procurement Survey Standardization Initiative. JGPSSI Ver. 3 is a survey format for chemical substances created by the Japan Green Procurement Survey Standardization Initiative.

Compliance with the EU'S RoHS Directive and China RoHS

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.

China's Management Methods for Controlling Pollution Caused by Electronic Information Products Regulation, or China RoHS*2, went into effect on March 1, 2007. China RoHS is the same as the EU's RoHS Directive in terms of regulated substances, but differs in terms of applicable products and legal requirements. It will be implemented in two stages. The first stage makes it mandatory to label information on inclusion of the six substances. Products are to be labeled with their environmental period of validity (the period during which the product can be used without causing serious environmental pollution) and manufacturing date. Products and/or their manuals are to also include information on the six substances and packaging materials. We are in compliance with these requirements. The second stage of implementation has not yet started, 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.

In order 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 maintaining and 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.

1. The six specific substances are lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyl (PBB) and polybrominated diphenyl ether (PBDE).
2. Regulations developed jointly by China's Ministry of Information Industry with six central government agencies, including the National Development and Reform Commission and 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 REACH

New European Union regulations on chemical substances, REACH, is scheduled go into effect in June 2007. REACH will make safety assessments mandatory for around 30,000 types of chemical substances sold in the EU. This will make it necessary for the Mitsubishi Electric Group to track the presence or absence of approximately 1,500 specified substances*1 in parts, devices and other Group products.

Management of the many types of chemical substances subject to REACH is exceedingly difficult using the methods used to comply with RoHS, such as analyzing parts and materials, and obtaining non-usage certificates for directly contracted suppliers. The cooperation of the entire supply chain, including material suppliers, will be needed to appropriately manage chemical substances contained in products and avoid contamination by regulated substances. It will therefore be essential to create mechanisms for obtaining material data from upstream chemicals and metals companies, and parts information from middle stream parts manufacturers.

In order to facilitate the flow of information along entire supply chains, the Japan Article Management Promotion Consortium (JAMP) *2 was launched in September 2006. JAMP is working to promote increased use of MSDS Plus data sheets for materials like coatings and metallic materials, and article information sheets (AIS) for molded products (articles) such as condensers, and other electronic components and electromechanical parts. The goal is to have information on the inclusion of chemical substances regulated in Japan or overseas communicated along supply chains. Mitsubishi Electric is involved in the consortium as one of its founding members and is working to build mechanisms for facilitating the circulation of this type of information.

1. The specific substances are chemical substances that are highly carcinogenic, persistent or bioaccumulative. The list will be announced by June 1, 2009.
2. The Japan Article Management Promotion Consortium is a voluntary, cross-industry organization administered by the Japan Environmental Management Association for Industry. It has 128 members (as of May 8, 2007) from diverse industries, including chemicals, electronics and automobiles.

Environmental Performance

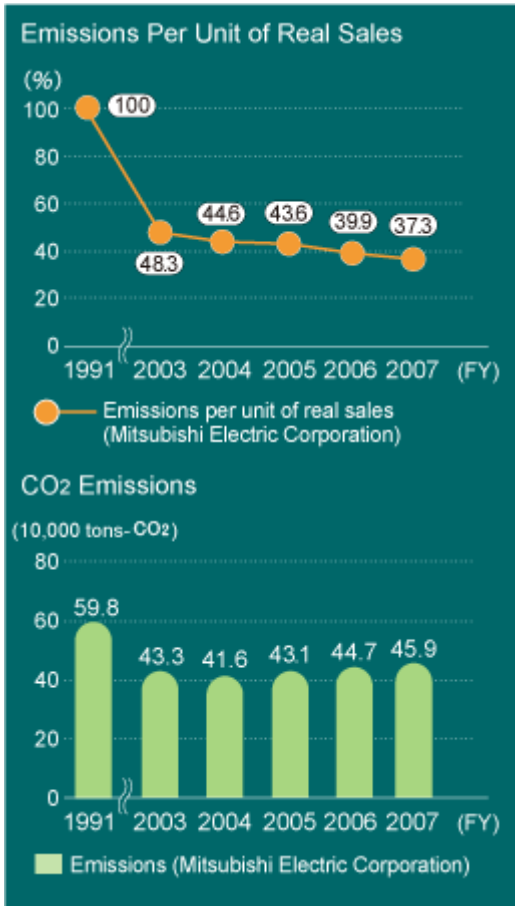
Preventing Global Warming

Reducing Carbon Dioxide Emissions

Mitsubishi Electric set a voluntary goal in 1997 of reducing carbon dioxide emissions per unit of net sales by 25% by fiscal 2011, compared to fiscal 1991 levels. In order to achieve this goal, our 5th Environmental Plan contains the target of reducing carbon dioxide by 33,000 tons during the five-year period from fiscal 2007 to fiscal 2011.

Carbon dioxide emissions from production activities in fiscal 2007 totaled 459,000 tons, an increase of 120,000 tons over the previous year. However, per sales emissions have dropped 23% from fiscal 1991, so we are poised to achieve our goal in fiscal 2008.

We have used emissions per unit of sales as our emissions intensity index, but starting with this year's report we are switching to emissions per unit of real sales, which incorporates the corporate goods price index, to achieve consistency with management indicators established for the electronics industry. Our voluntary target is being changed to a reduction of at least 60% per unit of real sales by fiscal 2011. To achieve this target, we will continue to reduce emissions by 10,000 tons annually through capital investment.



Carbon dioxide emissions per unit of real sales in fiscal 2007 were 63% lower than fiscal 1991 levels.

CO_2 Reduction Targets at Production and Non-Production Sites

Under the 5th Environmental Plan, the scope of CO_2 emissions management and data collection has been expanded to the entire Mitsubishi Electric Group in an effort to further reduce emissions.

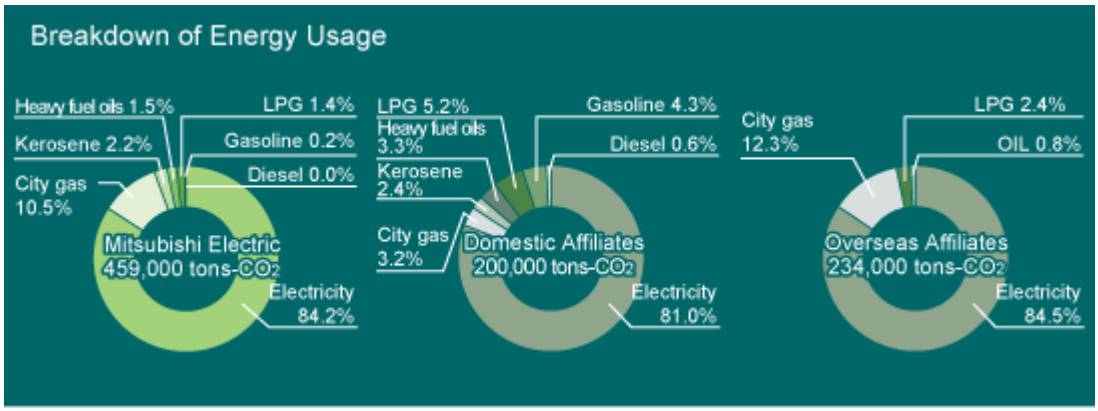
For fiscal 2007, we had a goal of reducing CO_2 emissions per unit of net production value by 2% at domestic sites (including research centers), and we successfully achieved a reduction of 6%. This was the result of efforts to increase energy efficiency at production sites under a policy of investing in high-efficiency equipment and other energy saving facilities every year at a targeted rate of 0.1% of production value.

The target for the head office, branch offices, and non-manufacturing companies in Japan and overseas is to reduce CO_2 emissions by 1% per year per unit of floor space. The target for manufacturing affiliates in Japan is 1% reduction per year per nominal net sales. Manufacturing affiliates overseas have the same target. We will use fiscal 2007 levels as the baseline, and plan to reduce emissions by 1% every year from fiscal 2008.

Reducing CO_2 Emissions at the Production Stage

Mitsubishi Electric has been striving since fiscal 2005 to reduce CO_2 emissions from energy usage during production activities by 46,000 tons by fiscal 2011. We have implemented three basic strategies to meet this goal: installation of highly energy efficient equipment; minimization of energy loss by making production plant energy usage transparent at the production process level and individual facility level; and conversion to alternative fuels.

In fiscal 2007, we invested a total of ¥2.66 billion in these three strategies and reduced CO_2 emissions by a total of 10,052 tons. (See the table below for a breakdown.)



Energy Conservation Action Plan

Action Plan	FY2011 Reduction Target (tons-CO_2)	FY2005		FY2006		FY2007	
		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	4,098	1,443	5,910	1,468	8,842	2,481
Energy-loss minimization (EM) activities	8,000	214	41	266	76	890	156
Shift to alternative flues	3,200	1,872	48	334	49	320	25
Total	46,000	6,184	1,532	6,510	1,593	10,052	2,662
Cumulative	-	6,184	1,532	12,694	3,125	22,746	5,787

Reducing CO_2 Emissions without Kyoto Mechanisms

Kyoto Mechanisms* enable the use of international collaboration to receive CO_2 emissions credits. The mechanisms have been recognized by the international community since the Kyoto Protocol went into effect in February 2005. 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. Accordingly, our plans through 2010 do not call for the use of 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.

Environmental Performance

Managing Chemical Substances

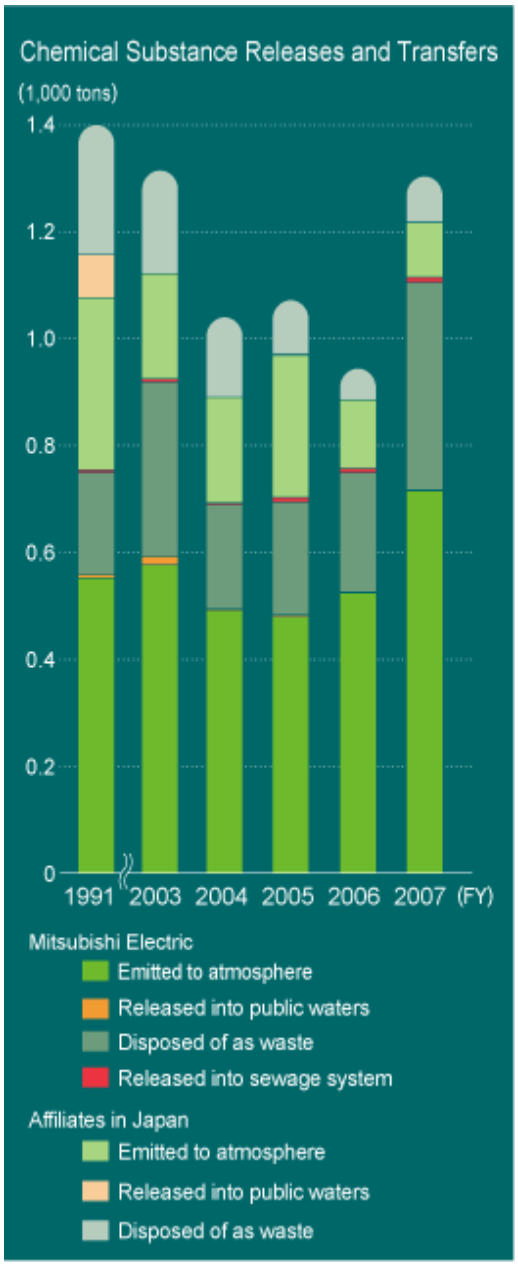
Reducing the Release of Chemical Substances

The Mitsubishi Electric Group (production facilities in Japan) has 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.

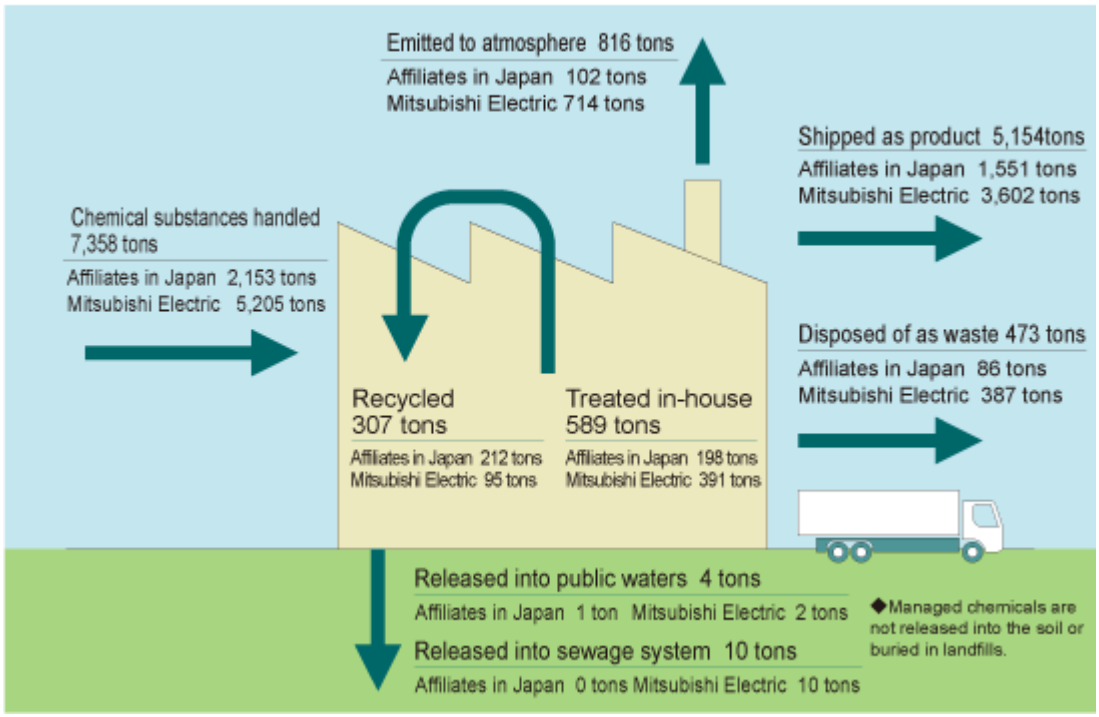
The graph on the right shows chemical substance release and transfer for fiscal 2007. The lists of chemical substances subject to management increased by 13 in fiscal 2007 due to amendments made to the Air Pollution Control Law, and correspondingly release and transfer volume increased by 38% (11% increase based on last year's scope of management). The top ten chemical substances in terms of release and transfer volume handled by the Group are shown in the tables below. Release of isopropyl alcohol and other substances have increased due to the addition of volatile organic compounds to the scope of management and the progressive switch to substitutes for toluene and xylene.

We intend to continue to work to reduce the release of chemical substances, especially volatile organic compounds.

*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 2007)

Mitsubishi Electric

Unit: tons

Rank	Chemical	Volume Handled	Release/ Transfer	Release			Transfer			Treated in-house	Recycled
				Air	Public waters	Soil	Waste	Sewage system	Consumed		
1	Isopropyl alcohol	500.9	230	123.1	0	0	106.9	0	17.1	253.6	0.2
2	Butyl acetate	143.3	140.4	47.5	0	0	92.8	0	1.3	0.3	1.4
3	Styrene	306.7	128.9	108.9	0	0	20	0	177.7	0.1	0
4	Xylene	200.6	165	140.1	0	0	24.9	0	28.7	5.6	1.3
5	Toluene	134.3	111.2	99.8	0	0	11.5	0	3.2	1.4	18.5
6	Acetone	72.5	57	37.6	0.2	0	19.3	0	0.1	0.2	15.2
7	Ethyl benzene	33.6	32.6	27.9	0	0	4.7	0	0.1	0.9	0
8	Ethyl acetate	27.7	23.1	21.7	0	0	1.3	0	0.5	0.2	4
9	Hydrogen fluoride and its water-soluble salts	111	16.6	0	1.8	0	11.4	3.3	0.2	94.2	0.1
10	Methanol	21.5	15.5	10.7	0	0	4.8	0	0.3	5.7	0

Affiliates in Japan

Unit: tons

Rank	Chemical	Volume Handled	Release/ Transfer	Release			Transfer			Treated in-house Soil	Recycled Waste
				Air	Public waters	Soil	Waste	Sewage system	Consumed		
1	Toluene	138.5	69	55.7	0	0	12.3	0	49.4	20	0.1
2	Methyl ethyl ketone	131.3	15.2	0	0	0	15.2	0	83.1	33	0
3	Xylene	88	15	13.4	0	0	1.5	0	67.9	5	0.1
4	Ethanol	119.7	13.9	0	0	0	13.9	0	75.8	30.1	0
5	Hydrogen fluoride and its water-soluble salts	14.4	11.9	0	1.2	0	10.8	0	2.5	0	0
6	Sulfur hexafluoride	22.7	6.6	6.6	0	0	0	0	11.4	4.7	0
7	Ethyl benzene	60.9	6.2	5.9	0	0	0.3	0	52.5	2.2	0
8	Isopropyl alcohol	15.9	6.1	4.9	0	0	1.2	0	6.4	2.5	0.9
9	Acetone	45.3	5.3	0	0	0	5.2	0	28.7	11.4	0
10	Styrene	439.5	4.7	2.6	0	0	2.1	0.1	417.8	16.9	0

Environmental Performance

Managing Wastes

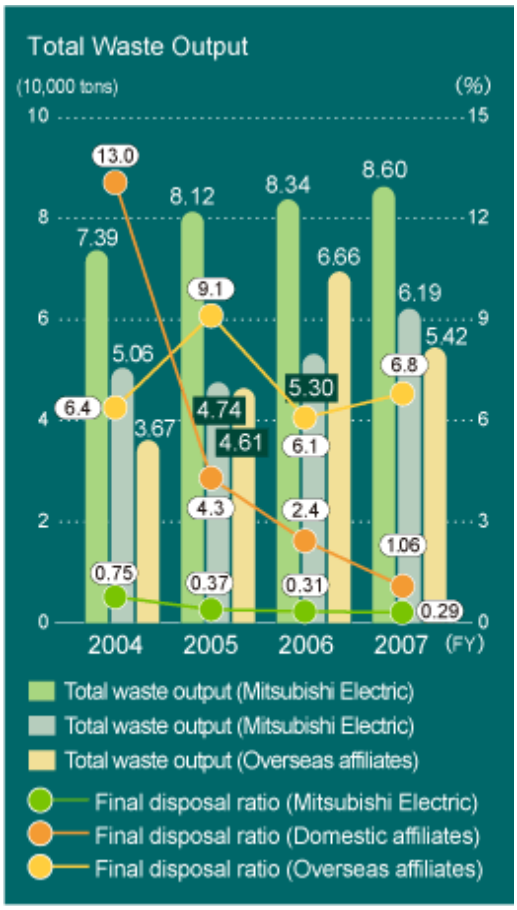
Waste Reduction and Zero Emissions Initiatives

Under its 4th Environmental Plan (FY2004 FY2006), the Mitsubishi Electric Group defined "zero emission" plants as production facilities with a final waste disposal volume of 1% or less of the total volume of waste generated, and we carried out waste reduction and recycling activities in pursuit of this goal.

Under our 5th Environmental Plan, we are working toward reducing waste completely and have set targets of 0.5% or less at production sites in Japan, and 1% or less at production affiliates in Japan.

In fiscal 2007, our domestic production plants achieved a figure of 0.29%, their fifth straight year of being at 1% or less, and their third consecutive year at 0.5% or less. Our domestic production affiliates improved from 2.4% in the previous year to 1.06%. We will redouble our efforts in the final year of the plan to reach 1% or less.

Overseas business offices reduced both total waste volume and final disposal volume, but unfortunately the final disposal ratio increased by 0.7 percentage points to 6.8%.



KEYPOINT

Electronic Manifest System and Waste Reduction (Fukuyama Works)

Fukuyama Works produces energy-saving devices such as eco-monitors and eco-servers and has been recognized by outside customers as a model factory in terms of energy efficiency. The facility has actively and progressively reduced and recycled waste and promoted compliance with waste-related laws and regulations, instituting an electronic manifest system at the early date of fiscal 1999, for example.

Fukuyama Works has worked to reduce and recycle waste in a thoroughgoing manner: from plastic mold scraps, wood pallets, rags and packing materials to weeds in the factory grounds. The facility has been a zero emissions plant with a recycling ratio of 100% since fiscal 2005.

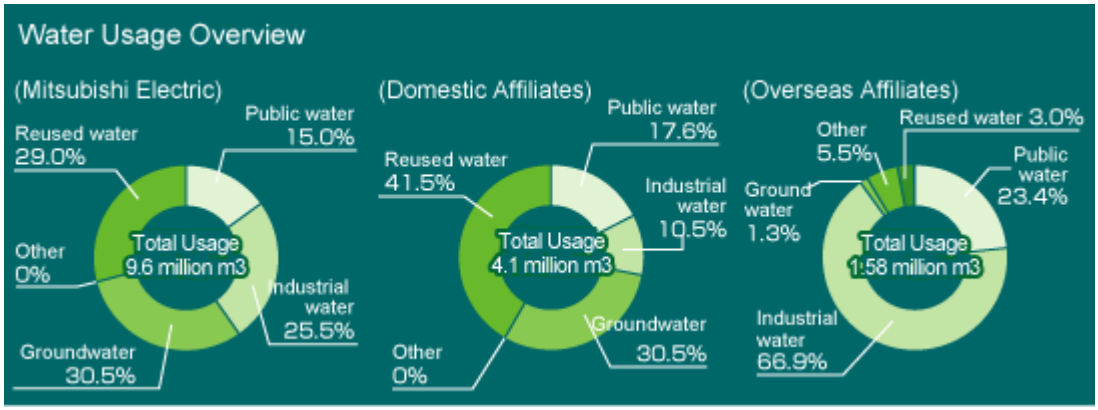
Weeds prevented by spreading bark dust between vegetation in the facility grounds.

Using the electronic manifest system, which was started in fiscal 1999.

Effective Water Usage

Under our 5th Environmental Plan, the Mitsubishi Electric Group is re-investigating and reconfirming how water is used at each business site and affiliated company, and is working to formulate and promote measures for more effective water usage. The goal of this initiative is to promote recycling and reuse of precious water resources at production sites, including public water, industrial water and groundwater.

In fiscal 2007, manufacturing plants, research centers and the Corporate Environmental Sustainability Group joined together to conduct water usage surveys at Nagoya Works and Nakatsugawa Works and consider ways to reuse water for toilets and fire prevention. In fiscal 2008, we will consider more specific measures to make this happen and extend the scope of water usage surveys and reuse initiatives to additional production sites.



Environmental Performance

Eco-Logistics and Reduced Packaging

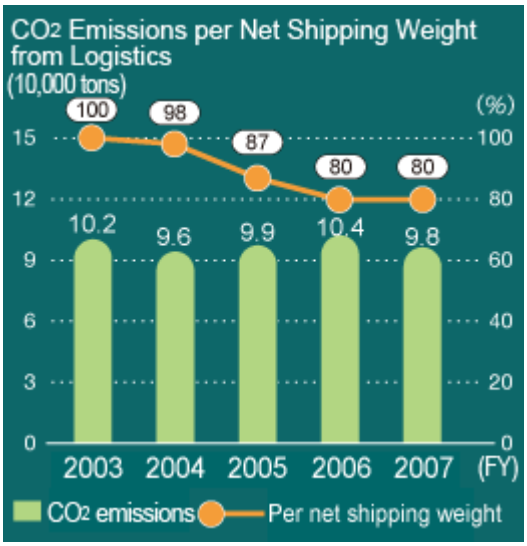
Reducing CO_2 Emissions in Product Distribution

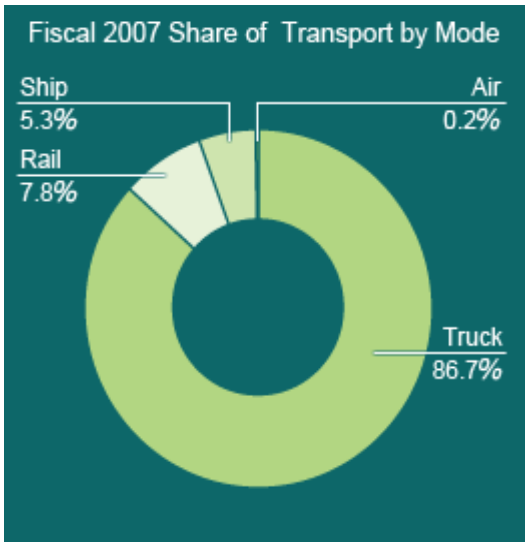
The Mitsubishi Electric Group's*1 fiscal 2007 CO_2 emissions per net shipping weight dropped 20% from fiscal 2003 (total CO_2 emissions of 98,000 tons). Modal shift accounted for 13.1% of total shipping volume, an increase of four percentage points compared to fiscal 2003.

Rail transport accounted for 7.8% (on a ton-kilometer basis), an increase of two percentage points from fiscal 2006. In order to raise this ratio, we promoted increased use of 31-foot rail containers, which hold the equivalent of a ten-ton truck, and 12-foot rail containers (three of which hold the equivalent of a ten-ton truck).

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

Our 5th Environmental Plan includes the goal of reducing CO_2 emissions per net shipping weight by 30% compared to fiscal 2003, so we intend to continue promoting increased and efficient use of rail containers.





Modal Shift

The Mitsubishi Electric Group is working with Mitsubishi Electric Logistics Corporation to switch transport modes in Japan from truck transport to rail and ship. For example, we are actively using rail to transport room air conditioners and refrigerators from Shizuoka Works to the Kyushu Logistics Center (Tosu, Saga Prefecture), and washing machines and other items from Nihon Kentetsu (Funabashi, Chiba Prefecture) to the Rokko Logistics Center (Kobe, Hyogo Prefecture) and the Kyushu Logistics Center.

These initiatives have been recognized, and our Living Environment & Digital Media Equipment Group was certified as an "Eco-Rail" company*2 in September 2005 by the Railway Freight Association.

*2: A company that manufacturers consumer products and has been certified by the Railway Freight Association for using rail for at least 15% of ground shipments of 500 kilometers or more on a per-company basis, or for at least 30% on a per-product basis.

Loading refrigerators onto a 31-foot rail container

Eco-Rail Mark

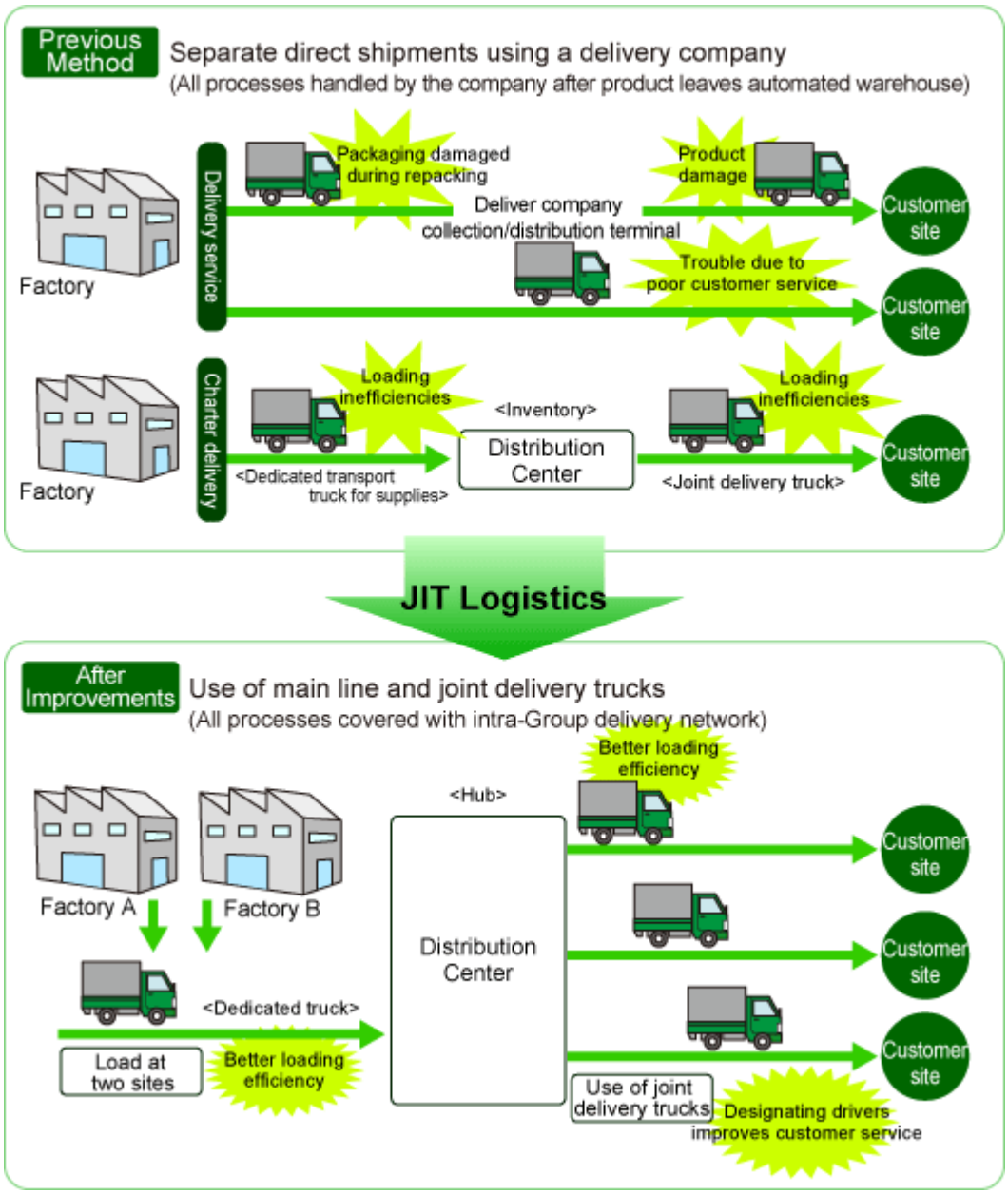
Domestic Shipping Initiatives

The Group has been promoting an in-house project for improving logistics, the Just-in-Time Improvement Project, since fiscal 2007. The goal of the project is to increase the transparency of logistics and reduce inefficiencies and loss.

In order to improve the loading ratio for 12-foot rail containers, we've started double stacking products that had been shipped in a single stack by using transport racks.

Raising the loading ratio by double stacking a 12-foot rail container

We have also switched to using distribution hubs for products that had previously been shipped directly from production sites in small lots each time they were needed, using delivery or charter delivery services. This has improved loading efficiency through the use of cooperative transport and reduced the frequency of truck usage.


Previous Method
Separate direct shipments using a delivery company
(All processes handled by the company after product leaves automated warehouse)
Factory
Delivery service
Packaging damaged during repacking
Deliver company collection/distribution terminal
Product damage
Trouble due to poor customer service
Customer site
Customer site
Factory
Charter delivery
Loading inefficiencies
<Inventory>
Distribution Center
Loading inefficiencies
<Dedicated transport truck for supplies>
<Joint delivery truck>
Customer site
JIT Logistics
After Improvements
Use of main line and joint delivery trucks
(All processes covered with intra-Group delivery network)
Better loading efficiency
<Hub>
Factory A
Factory B
Distribution Center
Customer site
Customer site
Customer site
<Dedicated truck>
Load at two sites
Better loading efficiency
Use of joint delivery trucks
Designating drivers improves customer service

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 2007, we established a calculation method for CO_2 emissions and began tracking those emissions. In fiscal 2008, we plan to track emissions at an even higher level of precision and develop a reduction plan.

Procurement Logistics

We are also striving to reduce CO_2 emissions during transport operations related to product procurement. In fiscal 2007 we first of all established a method for measuring CO_2 emissions during procurement-related transport operations and began tracking CO_2 emissions. In fiscal 2008 we plan to further raise the precision of this method and measure CO_2 emissions.

Using Alternative Packaging Materials and Eliminating Wood Materials

In order to make more effective use of resources, the Mitsubishi Electric Group*3 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.

In fiscal 2007, our aim was to reduce packaging volume per unit of shipping weight by 4% from fiscal 2005, and we easily achieved that goal with a reduction of 10% (packaging volume of 50,000 tons). In particular, Mitsubishi Electric Corp. achieved a reduction of 17% from fiscal 2005 (packaging volume of 41,000 tons).

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

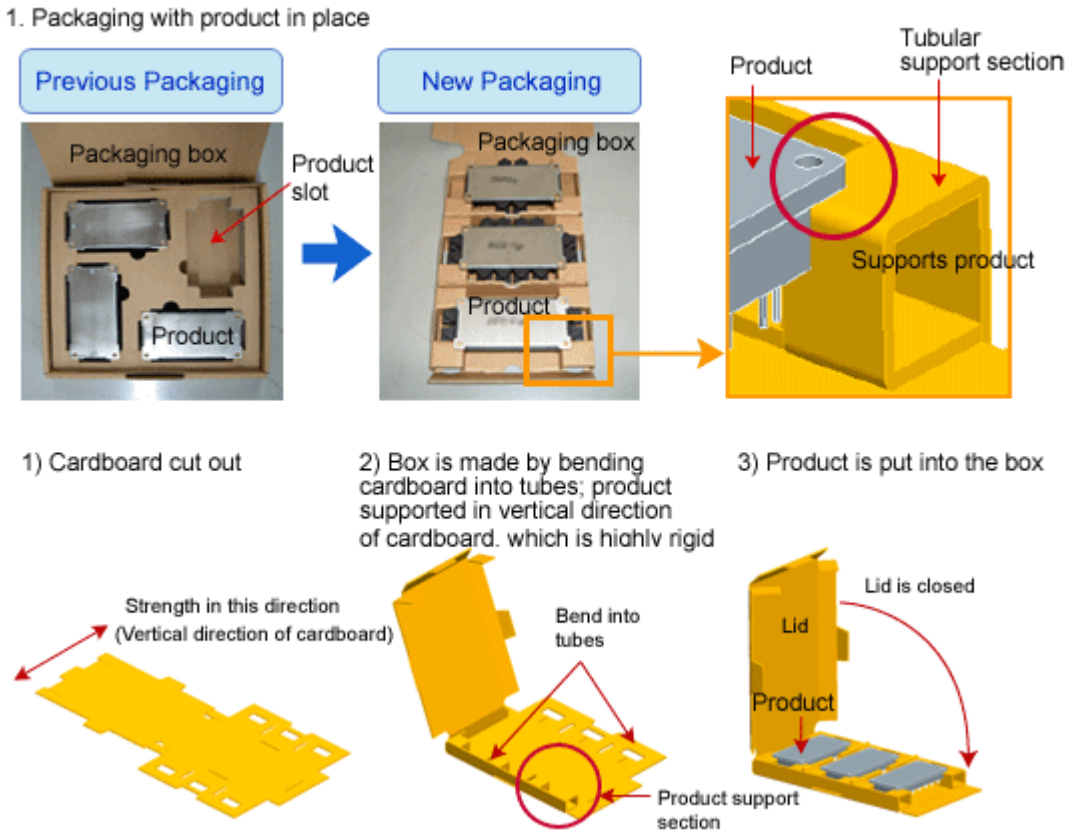
Reducing Disposable Packaging Materials

To reduce disposable packaging, we are making packaging simpler and lighter, increasing use of returnable containers, and expanding use of packaging materials (cardboard, steel) not covered by the Container and Packaging Recycling Law.

We are working to make packaging simpler and lighter, starting at the product design stage for new products. In fiscal 2007, we made packaging improvements in conjunction with the development of power modules used in such products as air conditioners and industrial device inverters. At the same time we are striving to make packaging simpler and lighter for existing products as well in order to raise transport efficiency.

We are gradually expanding our returnable container program for corporate products, starting with customers who have expressed enthusiasm for the program.

Simple Packaging for Power Modules



New Packaging Benefits (Per Product)			
	Previous Packaging	New Packaging	Benefits
Packaging cost	100%	54%	46% lower
Packaging usage	100%	63%	37% lower
Packaging volume	100%	89%	11% lower
Ratio of product to packaging	100%	150%	50% higher
Number of parts	100%	43%	57% lower
Packing	○	◎	—
Opening	○	◎	—
Palletizing	○	◎	—

Examples of Eco-Products and Hyper Eco-Products

Mitsubishi Electric manufactures products that give consideration to the environment in terms of Materials, Energy and Toxicity, or "MET." We have an internal certification program based on proprietary criteria that we use to designate products that help reduce environmental impact as "Eco-Products" and products with an even higher level of environmental performance as "Hyper Eco-Products." Here, we introduce some products that were certified in fiscal 2007.

M Materials: Effective use of resources
E Energy: Efficient use of energy
T Toxicity: Avoidance of substances that are potentially harmful to the environment

Room Air Conditioner: MSZ-ZW407S

Factor 2.39: Performance Factor 1.100 X Environmental Impact Factor 2.175

Hyper Eco-Product

Reasons for Certification

- Technology to save energy based on usage conditions made possible by the evolution of Move-Eye
- Factor rating of 2 or above
- Use of plastic recycled in a closed-cycle

This air conditioner prioritizes both comfort and energy efficiency through the use of the "Human-Sensing Move-Eye," a feature that detects where people are located and automatically refines the area that receives air conditioning.

M

- Closed-cycle recycled plastic from used home appliances is used in the indoor unit cross-flow fan and outdoor unit panel
- Designed to be easy to clean during use and easy to disassemble when recycling
- Existing pipes can be reused, which greatly reduces waste

E

- The Move-Eye feature limits wasteful overcooling and overheating by controlling the perceived temperature; running the unit in automatic mode rather than continuous mode saves energy at a rate of 30%
- "Human-Sensing Move-Eye" detects people and provides comfortable air conditioning to areas where people are located to improve energy efficiency by another 10%
- The unit automatically cleans its own filter to prevent deterioration in energy efficiency caused by clogging, without any trouble to the user

T

- Does not use any substances subject to the EU's RoHS Directive or Japanese Industrial Standards (JIS)'s J-Moss

Residential Heat Pump Water Heaters with Natural Refrigerant: SRT-HP37W1 (representative model)

Factor 2.09: Performance Factor 2.000 X Environmental Impact Factor 1.047
(Factor calculated for SRT-HP46W1 model)

Hyper Eco-Product

Reasons for Certification

- Received the Chairman's Award at the Energy Conversation Center, Japan's 2006 Energy Conservation Grand Prize Awards
- Industry leading COP* (as of sales launch in June 2006)
  *Coefficient of performance. A device's outputted energy divided by its inputted energy

This water heater uses a natural refrigerant that does not damage the ozone layer and features industry-class energy efficiency.

M
- Fewer parts and greater use of plastic for a weight of 80 kilograms (16% reduction from the previous model)

E
- Heat pump: High efficiency achieved with a newly developed twist-and-spiral gas cooler with a 4.9 COP rating (previous model was 4.5) and a CO_2 compressor that uses Mitsubishi Electric's proprietarily developed joint wrap DC motor

T
- Hot water tank: Insulating material is foamed polystyrene that does not include hazardous substances; Heat retention improved by 15%.

Package Air Conditioner (Wide Power Cassette Indoor Unit + Zupadan Slim Outdoor Unit): MPLZ-HRP BED Series

Factor 1.73: Performance Factor 1.00 X Environmental Impact Factor 1.733

Hyper Eco-Product

Reasons for Certification

- Strong market assessment as an air conditioner for truly cold climates
- High energy efficiency and exceptional piping replacement technology for resource savings
- Received Honorable Mention at the 2006 Electrical Manufacturers Awards sponsored by the Japan Electrical Manufacturers' Association

This heat pump air conditioner maintains its rated heating capacity even when the outdoor air temperature is -15??C.

M
- Existing piping and wiring can be reused, which substantially reduces waste
- Plastic parts are labeled to make them easy to recycle

E
- Uses the industry's first flash injection circuit* to improve heat capacity at low temperatures and improve energy efficiency by some 20%
- Also, Move-Eye 360 prevents temperature irregularity and excessive cooling for additional energy savings of about 30%

T
- Uses a refrigerant (HFC410A) with an ozone damage coefficient of zero
- Does not use any substances subject to the EU's RoHS Directive or JIS's J-Moss

*A refrigerant circuit that limits rises in exhaust temperature when the outdoor air temperature is low, and maintains heating capacity with low outdoor air temperatures by compressing refrigerant when it is a two-phase mixture of gas and liquid

Inverter Compressor: PAC80 (for 8.0 kW inverters)

Factor 2.02: Performance Factor 1.00 X Environmental Impact Factor 2.016

Hyper Eco-Product

Reasons for Certification

- Received the Packaging Technology Logistics Award at the 2006 Japan Packaging Contest held by the Japan Packaging Institute
- Helps improve the energy efficient performance of room air conditioners and package air conditioners
- Factor rating of two or more

This compressor for inverters limits motor revolutions at an advanced level to help save energy.

M

- Factor 2.02 achieved by 39% lower product weight than the previous model; the industry's lightest compressor for 8.0 kilowatt air conditioners
- Export packaging uses molded paper products instead of conventional wood packaging

E

- Low RPM performance improved through using Mitsubishi Electric's proprietary joint wrap DC motor and thermal caulking to fix the cylinders in place, which improves energy efficiency by 2% on an APF* basis

*Annual performance factor. Total amount of heat generated divided by the total amount of power consumed over that time.

T

- Uses a refrigerant (HFC410A) with an ozone damage coefficient of zero
- Does not use any substances subject to the EU's RoHS Directive or JIS's J-Moss

Inverter: FREQROL-F700

Hyper Eco-Product

Reasons for Certification

Received Honorable award at the 2006 Electrical Manufacturers Awards sponsored by the Japan Electrical Manufacturers' Association

Using an inverter for fan or pump application is more efficient and saves more energy than conventional flow rate control using a damper, valve, or motor on-off control.

- **M** Designed to extend the life span of major consumables, such as capacitors and cooling fans, the design life is ten years to effectively help save resources.
- **E** By using an inverter for fan or pump application and controling the flow rate by changing the motor speed, it achieves a higher level of energy saving compared to the flow rate control using a damper, valve, or motor on-off control. Optimal excitation control (a distinct function in FREQROL-F700) makes more energy saving possible compared to conventional V/f control.
- **T** Complys with the EU RoHS Directive to use alternatives to all six hazardous substances

Wire-Electrical Discharge Machine: FA20PS Advance

Hyper Eco-Product

Reasons for Certification

- Won the Innovation Prize at the 2006 Japan Invention and Innovation Awards sponsored by the Japan Institute of Invention and Innovation

This wire-electrical discharge machine is a machine tool that utilizes the discharge phenomenon to precision-process metals using electrode wire that is the size of a strand of hair.

M
- Preventing wire electrode breaks improves processing yields and reduces wire electrode waste

E
- Eliminating wire electrode breaks and controlling energy to match processing variation cuts processing time in half (doubling energy efficiency)

T
- Uses screws and steel sheeting with hexavalent chromium-free coating; CFC substitute used to cool the processing fluid

Environmental Report

Environmental Management Advisor Conferences

We hold this conference on a regular basis to hear the opinions of outside experts on our environmental management practices and CSR initiatives. The feedback is then reflected in future activities.

More

Exhibitions and Events

We exhibit at eco-products fairs both inside and outside Japan and participate in Team -6% events.

More

Advertising and Promotion

Through corporate advertising and publicizing new products, we introduce our environmental technologies and the environmental features of our products to the public.

More

Communication

Environmental Management Advisor Conference

Mitsubishi Electric has held the Environmental Management Advisor Conference biannually since 2004 in order to hear the comments and opinions of outside experts on our environmental management practices and CSR initiatives. This feedback is then applied to future activities. The sixth conference was held on November 16, 2006 at the Information Technology R&D Center. We had the expert advisors look at examples of some of the products we've developed. Their opinions and impressions are introduced here.

Hisashi Ishitani
Graduate School Professor, Keio University

Kikuko Tatsumi,
Executive Director, Nippon Association of Consumer Specialists

Sachiko Takami,
Representative, The Natural Step Japan

Living Environment Systems Laboratory: Cardboard Packaging for Heat Pump Water Heaters

As more households switch to electricity to power all their appliances, demand for highly energy efficient heat pump water heaters has increased. The environment is, of course, a key consideration when manufacturing the water heater itself, but Mitsubishi Electric is also actively involved in reducing, reusing and recycling the materials used to package it. For example, switching from wood to readily recyclable cardboard can be expected to reduce wood usage. We plan to progressively accelerate this initiative going forward.

Comments

Ishitani: Cardboard packaging materials allow loading space to be be utilized more effectively during transport, so this should improve logistics efficiency. I think it would be a good idea to calculate actual figures, using Eco-Leaf environmental labeling*1 standards, for example, and use them to promote the merits of cardboard packaging to consumers.

*1: Eco-Leaf environmental labeling is a program for quantifying environmental impact throughout a product's lifecycle, from resource extraction to manufacturing, distribution, use, disposal and recycling.

Tatsumi: Consumers are familiar with the three R's and have a good understanding of them. Properly explaining the reasons for switching from wood to cardboard packaging and its convenience in terms of disposal and recycling would provide an optimal opportunity for consumers to learn about this initiative.

Takami: Along with the three R's, I think the fact that reducing weight during shipping lowers environmental impact is important. A very large amount of carbon dioxide is released during distribution, so I would like to see Mitsubishi Electric continue to reduce weights and sizes on various fronts.

Industrial Design Center: Universal Design "AXIEZ" Elevator

People who use elevators aren't able to choose which elevators they use. With this fact in mind, Mitsubishi Electric strives to develop elevators that can be used by as many people as possible. AXIEZ was created based on universal design principles. A basic feature of the elevator is a sidewall operations panel that is easy to use for people in wheelchairs, as well as for senior citizens and children. Other features include a multi-beam door sensor, a sensitive door, and 10-millimeter threshold. These universal design features make entering and leaving the elevator safer.

Comments

Ishitani: What is most frightening about elevators is what to do in an emergency like a fire. I think it is important to make it clear to everybody what steps should be taken in an emergency, especially for when children or people with disabilities are alone.

Tatsumi: As far as button operation is concerned, some countries do not have "close" buttons in their elevators. I thought that pressing the "close" button consumed more power. However, I was surprised to find out that, since pressing the "close" button makes the elevator arrive at the selected floor more quickly, the elevator's standby time with no passengers is extended. This means that the lights inside the elevator can be turned off, saving energy.

Takami: With regard to the positioning of the buttons, in Japan they are almost always by the door, but in Europe, the control panel is commonly on the sidewall, just like Mitsubishi Electric's elevators. From a universal design perspective, it would seem that having the buttons on the sidewall is better.

Information Technology R&D Center: Sensor Data Mining System (Energy Efficiency Analysis System)

Mitsubishi Electric also works to develop IT solutions related to the environment and is carrying out research in this area. One IT solution we have developed is the Sensor Data Mining System. The system intuitively expresses and analyzes temperature, power consumption and other data collected by sensors. The system 1) makes it easy to compile data and graph it to represent it visually, and 2) provides assistance as to which perspectives to use to analyze the data.

Comments

Ishitani: Many energy efficient products are now available, including heat pumps and co-generation systems. However, efficiency differs substantially depending on how the products are used. What is needed, from the perspective of reducing CO_2 as well, is to propose these energy-efficient solutions to consumers in combination with educating them on energy conservation. I would like to see this system used in that way.

Tatsumi: I think the system would seem more familiar to regular consumers if, for example, it could be applied to a refrigerator that informs you of the power it has consumed. Also, I want Mitsubishi Electric to make sure to give consideration to basic things like security, safety and quality, in addition to the environment.

Takami: I think it is great that on household solar power systems you can see the current amount of electricity being generated and sold. However, with regular household electric products, you can only know the total amount of energy consumed. I would like to be able to know specifically how much energy each electric appliance is consuming. I hope Mitsubishi Electric considers this point.

Communication

Exhibitions and Events

Exhibiting at Eco-Products 2006

Eco-Products 2006 was held over three days from Thursday, December 14 to Saturday, December 16, 2006 at Tokyo Big Site.

The theme of the Mitsubishi Electric Group's exhibit was "Mitsubishi Electric Eco Technologies: From Homes to Cities to Industries". We introduced our latest development achievements, from "Uni & Eco" branded household appliances--which fuse universal design with ecological considerations--to industrial products and the latest in recycling and environmental technologies.

The exhibit was made to be hands-on and easy to understand, and it provided us with the opportunity to communicate with a wide array of visitors. For example, visitors got to experience the Kirigamine Move-Eye room air conditioner, a Uni & Eco product which actually detects their movements with its sensor, tracks them, and directs a breeze from the unit to follow them around. They also had the opportunity to experience a vacuum cleaner created based on universal design principles that is easy to use, even on a floor with obstacles. In terms of environmental technologies, a micro-bubble generation experiment was conducted to show that grease can be totally removed using only small water bubbles and no solvents.

The size of the exhibit was increased from the previous year.


Children immersed in finding answers to a quiz. The participatory exhibit was a big hit with visitors.

The Mitsubishi Electric Outdoor Classroom display used a log covered with mushrooms to explain how wood returns to soil, one of nature's cycles.

Eco and Uni, the mascots for Uni & Eco brand appliances, were quite popular with visitors.

Exhibiting at the Eco-Products International Fair

Mitsubishi Electric exhibited at the Eco-Products International Fair, which was held in Singapore from Tuesday, October 31 to Thursday, November 2, 2006. We first participated in the fair in Thailand last year, so this year marked our second time exhibiting.

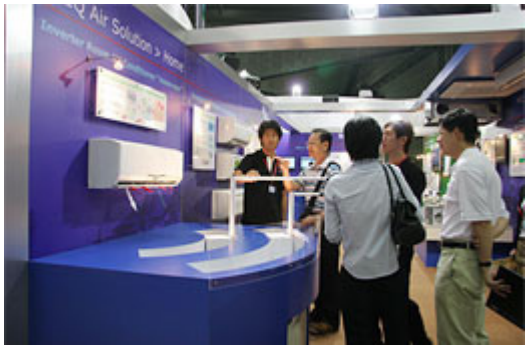
The theme of our booth at this year's fair was "Comfort Meets Ecology." the booth was divided into three zones: air conditioning; energy; and resources-- and we exhibited our energy efficient air conditioners, factory automation products, photovoltaic power systems and other products while giving recycling demonstrations.

In the air conditioning zone, we introduced a variety of products, from room air conditioners to industrial units like Lossnay and City Multi. The energy zone featured solar power systems and inverter technologies, while the resources zone showcased our cutting-edge recycling technologies. These displays all attracted the attention of many visitors.

We also introduced the environmental management concepts and environmental conservation activities of the Mitsubishi Electric Group and conveyed the importance of protecting the environment.

The fair was held at the Suntec Singapore International Convention & Exhibition Center.

32 Japanese companies exhibited. Mitsubishi Electric strived to make its exhibit understandable at a glance.



We promoted the energy saving features of our air conditioners with a demo model.

The fair was also attended by Singapore Minister of the Environment, Yaacob Ibrahim (second from right).

Participating in Team -6% Events

During Earth Day Marunouchi 2006, an environmental festival to call attention to global warming, we participated in "This is Marunouchi Cool Biz"*1, a fashion show for "Cool Biz" clothing held at the Otemachi Café on April 17, 2006. The models that appeared in the show were business people working in Tokyo, primarily in the Marunouchi area, for companies participating in the Team -6% campaign. A male employee from one of Mitsubishi Electric's sales divisions participated, modeling a blazer and slacks made from linen in contrasting grays and a brown belt and shoes.

* 1: Sponsored by the Earth Day Marunouchi 2006 Committee with the support of Japan Men's Fashion Unity.

Communication

Advertising and Promotion

Advertising Activities

Mitsubishi Electric has developed a nationwide print ad campaign on the theme, "Surprising Technology." The ads promote our broad range of technologies that support efforts to build a better society.
In fiscal 2007 we featured water treatment technology, one of our many innovations that help protect the environment. Central to this water treatment system is ozone technology. Ozone has the ability to remove mold, fungus and bacteria, and the ads introduced how our technology for generating high-density ozone can contribute to a recycling-based society.

In addition, we promoted our environmental focus by running commercials for such products as the Kirigamine room air conditioner, induction heating cooking appliances, solar power systems and Eco-Cute water heaters.

Promotion

We displayed posters promoting our 5th Environmental Plan at business sites around the country. The poster featured the catch phrase, "Listen to the Sound of the Water, Look at the Color of the Wind." The Environmental Plan, which began in fiscal 2007, expands our range of activity from materials, design and production divisions to include sales divisions. Our entire company and all employees are coming together to work to achieve the goals of the plan.

The photo in the middle of the poster is of goldfish in water that is actually purified factory wastewater. It was taken at our Air Conditioning and Refrigeration Systems Works in Wakayama.

Environmental Report

Domestic

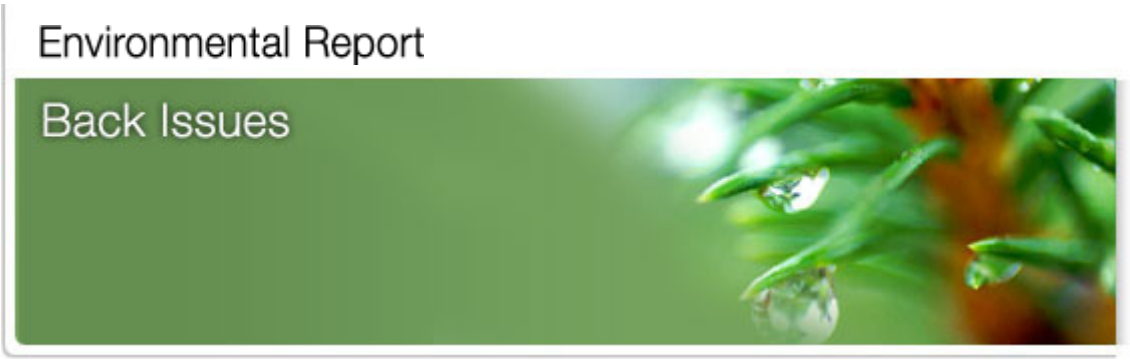
Award	Sponsor	Description / Product	Company / Business Office
Energy Conservation Grand Prize – Chairman's Award	Energy Conservation Center, Japan	Energy Conservation Center Chairman's Award / Heat Pump Water Heater	Gunma Works
2006 Wastec Awards Awards Committee Chairman's Prize	Wastec Executive Committee	Closed-cycle recycling of used air conditioner fans	Mitsubishi Electric Toray Hyper Cycle Systems
2006 Good Design Awards	Japan Industrial Design Promotion Organization	Residential Lossnay (VL-08PS2, VL-10ES2, VL-12ESH2)	Nakatsugawa Works
2006 Japan Packaging Contest (28th) Good Packaging Award (Electrical Device Packaging Category)	Japan Packaging Institute	Closed-cycle recycled packaging for refrigerators	Mitsubishi Electric Hitachi Chemical
Award for Outstanding Energy Conservation at Factories 2006 Chubu Bureau of Economy, Trade and Industry Director-General's Prize	Ministry of Economy, Trade and Industry	Substantial improvement since fiscal 2003 in ratio of production volume to annual electricity usage 3-year average improvement of 7.6%	Nagoya Works
Award for Outstanding Energy Conservation at Factories 2006 Kanto Bureau of	Ministry of Economy, Trade and Industry	Substantial improvement in average ratio of production volume to annual electricity usage over four years since fiscal 2002 4-year average improvement of 9.5%	System Substrate Plant

Economy, Trade and Energy Director-General's Prize			
Award for Outstanding Energy Conservation at Factories 2006 Chugoku Bureau of Economy, Trade and Energy Director-General's Prize	Ministry of Economy, Trade and Industry	Ongoing reduction in electrical energy since fiscal 1998	Fukuyama Works
9th Joetsu Enviromental Awards Environmental Business Grand Prize	City of Joetsu	Zero emissions activities for industrial waste	Joetsu Plant of Mitsubishi Electric Metecs
Japan Machinery Federation Chairman's Prize	Japan Machinery Federation	Development of storefront showcase with cooling-load-following control (Livemate Eco)	Nihon Kentetsu Mitsubishi Electric
2006 NetKADEN Award for Excellence	Ministry of Economy, Trade and Industry	Kirigamine Mimamori Sapa	Mitsubishi Electric
Japan Ozone Association Technology Award	Japan Ozone Association	Development project for energy efficient wastewater processing technology	Advanced Technology R&D Center
Innovation Prize	Chubu Bureau of Japan Electric Association	IPM motor and drive unit (IPM: Interior Permanent Magnet) (May 2006)	Nagoya Works
2006 Chubu Invention and Innovation Awards – Innovation Honorable Mention	Japan Institute of Invention and Innovation	Processing technology for wire-electrical discharge machine (June 2006)	Nagoya Works
2006 Kanto Invention and Innovation Awards – Innovation Honorable Mention	Japan Institute of Invention and Innovation	Technology to use existing refrigerant piping for new air conditioning units for cooling	Mitsubishi Electric
2006 Kanto Invention and Innovation Awards – Innovation Honorable Mention	Japan Institute of Invention and Innovation	Development of a solvent-free varnish for compressors compatible with alternative refrigerants	Mitsubishi Electric Ryoden Kasei
Distinguished Manufacturer for Electrical Business Innovation	Japan Electric Association	Technology for using the MT method to diagnose deterioration and assess the remaining lifespan for switching gear insulation	Power Distribution Systems Center

Electrical Manufacturers Awards – Honorable Mention	Japan Electrical Manufacturers' Association	Inverter (FREQROL-F700) (April 2006)	Nagoya Works
Pollution Prevention Award	Yokosuka-Miura Region Prefectural Administration Center	Overall environmental management activities	Kamakura Office of Mitsubishi Precision
55th Electrical Manufacturers Awards – Honorable Mention	Japan Electrical Manufacturers' Association	Development of room air conditioner with mobile floor temperature sensor that is at once easy to use, energy efficient and environmentally friendly	Mitsubishi Electric
"One More Life" Worker Volunteer Award "Nice Support" Award	Sawayaka Welfare Foundation	Award received for morning offsite cleanup activities carried out in the area, beach cleanup sponsored by the city, contribution to the Kanagawa Trust Midori Fund through fundraising activities for forest preservation at the Summer Festival Used Book Fair, and providing compost made with our composters free of charge to local residents	Kamakura Works
Inverse Manufacturing Contributor Award	Manufacturing Science and Technology Center	Cooperation, execution and PR for the survey and research activities of the Inverse Manufacturing Forum (a committee dedicated to the development and promotion of technologies and mechanisms for bringing about a recycling-based society, such as product recycling systems)	Mitsubishi Electric

Overseas

Award	Sponsor	Description / Product	Company / Business Office
Energy Conservation Award	Energy Department, Thailand	Total energy conservation achieved through energy-saving activities	Mitsubishi Electric Consumer Products (Thailand) Co., Ltd.
PEZA Environmental Award - Outstanding Environmental Performer	Philippine Economic Zone Authority	Outstanding Environmental Performance in Environmental Management System	Laguna Auto-Parts Manufacturing Corporation



The Mitsubishi Electric Group has issued an environmental report every year since 1998. Since 2003, the report has been published as the Environmental Sustainability Report.

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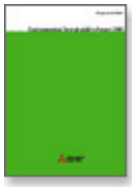
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