

Environmental Report 1999

This report is based on the performance of Matsushita Electric Group companies during fiscal 1998, ended March 31, 1999 (certain numerical estimates and activities planned for fiscal 1999 are also included). This is Matsushita Electric Group's third Environmental Report. In contrast to the first two reports, which focused primarily on the Group's operations in Japan, the 1999 report has been prepared from a global perspective.
March 2000

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Environmental Report Editorial Policy

This report is based on the performance of Matsushita Electric Group companies during fiscal 1998, ended March 31, 1999 (certain numerical estimates and activities planned for fiscal 1999 are also included). This is Matsushita Electric Group's third Environmental Report. In contrast to the first two reports, which focused primarily on the Group's operations in Japan, the 1999 report has been prepared from a global perspective. The main additions to the contents of the 1999 report are a listing of sites that have obtained ISO 14001 certification, the disclosure of environmental accounting information, details on the development of environmentally conscious products, a comprehensive explanation of environmental risk management activities, and an introduction to environmental activities in various regions of the world.

March 2000

■ Affiliates Included in This Report

Company Name	Principal Business Divisions
Matsushita Electric Industrial Co., Ltd.	AVC Company Home Appliance & Housing Electronics Company Air-Conditioner Company Motor Company PDP Div., Liquid Crystal Display Div., Electronic Circuit Capacitor Div., Manufacturing Equipment Div., Bicycle Div., Head Office, R&D Divs., Sales Divs., Overseas Divs.
Matsushita Electronics Corporation	Semiconductor Company Electron Tube Company Lighting Company
Matsushita Communication Industrial Co., Ltd.	Communications, car electronics, AV systems, govt. agency and corporate systems
Matsushita Electronic Components Co., Ltd.	All types of electronic devices
Matsushita Industrial Equipment Co., Ltd.	FA equipment, industrial information equipment, electric equipment, medical equipment, components
Matsushita Battery Industrial Co., Ltd.	Batteries and related equipment
Matsushita Refrigeration Company	Refrigerators and freezers, air conditioning, vending machines, food product equipment, compressors, heat exchangers, precision components
Kyushu Matsushita Electric Co., Ltd.	Telecommunications, documenting, water relevant, FA equipment, key devices
Matsushita Seiko Co., Ltd.	Air-conditioning equipment, ventilation and circulation equipment, environmental equipment

Matsushita Graphic Communication Systems, Inc.	Manufacture, sales, and service of office equipment and related network systems
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Matsushita Kotobuki Electronics Industries, Ltd.	Sound equipment, information equipment, visual equipment, heating and cooling devices
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The companies above and domestic and overseas affiliated companies are included as consolidated subsidiaries. However, there are several consolidated subsidiaries not included in the Group's Environmental Management, such as the Victor Company of Japan.

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Aiming at Coexistence with the Global Environment

■ A Message from President



As the 21st century approaches, coexistence with the global environment is becoming an increasingly critical theme for mankind. All countries are progressing with measures to realize economic development that is harmonious with environmental interests.

In 1991, the Matsushita Electric Group drew up the Matsushita Environmental Charter. Based on its corporate philosophy, it set forth a strong commitment to respecting, maintaining, and improving the environment. Since that time, we have made coexistence with the global environment the foundation of our business operations.

Looking at our performance in fiscal 1998, we obtained ISO 14001 certification for 221 sites in our global manufacturing network ahead of schedule. This has been a major management theme in recent years. Maintaining ISO environmental standards will form the foundation of our future environmental management activities.

In the area of product development, we continued efforts to raise energy efficiency, reduce the use of chemical substances, and improve recyclability. The quantitative results of these efforts are included in the environmental characteristic stickers that are attached to our products. In March 1999, we received the U.S. Environmental Protection Agency (EPA) 1999 Energy Star Partner of the Year Award for the superior performance of our electrical appliances.

We have always believed that Company management must recognize the importance of coexistence with the global environment. As the Matsushita Electric Group enters the 21st century, it will strive to develop operations in harmony with the global environment while creating value for customers and shareholders. I hope that this report will offer you a clear understanding of our approach to environmental preservation as well as the various activities we are undertaking in this area.

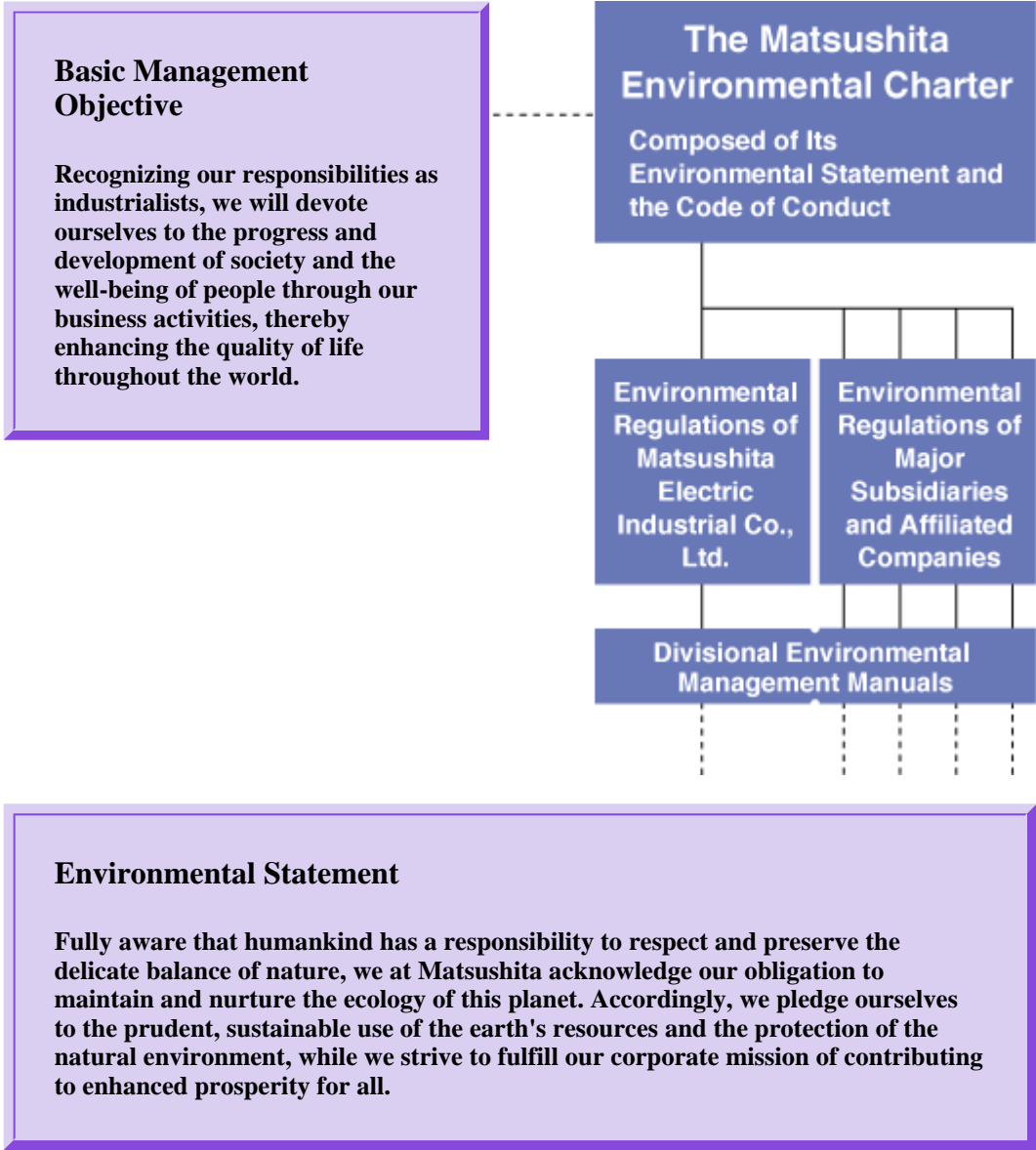
We enthusiastically welcome readers' opinions.

A handwritten signature in black ink, reading "Y. Morishita". The signature is stylized with a long horizontal stroke extending to the right.

Yoichi Morishita
President

Basic Philosophy

On June 5, 1991, the Matsushita Electric Group (Matsushita) drew up the Matsushita Environmental Charter composed of its Environmental Statement and the Code of Conduct. The charter defines our basic corporate approach to environmental preservation and guides members in all our business activities. Environmental regulations and standards that promote this approach have been established for all business units around the world. The Matsushita Environmental Charter was revised on March 31, 1998.



Code of Conduct

1. Social Responsibility

With the recognition of the importance of environmental protection and prevention of pollution, each operating unit shall fulfill its social responsibility through business operations, which consider/serve the demands of the earth, communities, and customers by sustaining and improving the environmental protection activities of itself and its employees.
2. Establishment and Improvement of Environmental Management Systems

Each operating unit shall establish and maintain an environmental management system, designed to enhance environmental performance and foster continual improvement, which includes an appropriate management structure to carry out each element of this environmental control policy.
3. Environmental Targets and Objectives

As a part of its environmental management system, each operating unit shall assess the environmental aspects and identify potential environmental impacts associated with its activities, products, and services, and establish appropriate targets and objectives consistent with this policy.
4. Compliance with Legal Requirements

As a part of its environmental management system, each operating unit in each country shall establish and observe individual standards that comply with all applicable environmental legal requirements governing its activities, products, and services, including laws, regulations, and international treaties and protocols effective in the country where the operating units are located.
5. Environmental Management Program

In order to implement its environmental management system, each operating unit shall establish an environmental management program, supported by appropriate resources that include the necessary procedures and practices to ensure compliance and achieve environmental targets and objectives, the assignment of responsibilities and lines of authority, education and training, documentation, and other appropriate elements. Each program's procedures and practices shall ensure compliance with the Matsushita environmental protection and pollution control standards for developing, manufacturing, and discarding products.
6. Environmental Assessment, Auditing, and Management Review and Correction

Each operating unit shall establish a process for environmental assessment, including periodic auditing, to evaluate implementation of its environmental management system, with particular emphasis on compliance with its individual standards, applicable environmental legal requirements, and procedures and practices, and adopt an appropriate management review system to monitor compliance performance and trends, and develop necessary corrective actions that foster continual improvement. Also, an appropriate environmental assessment shall be performed before acquiring any real estate.
7. Education and Training

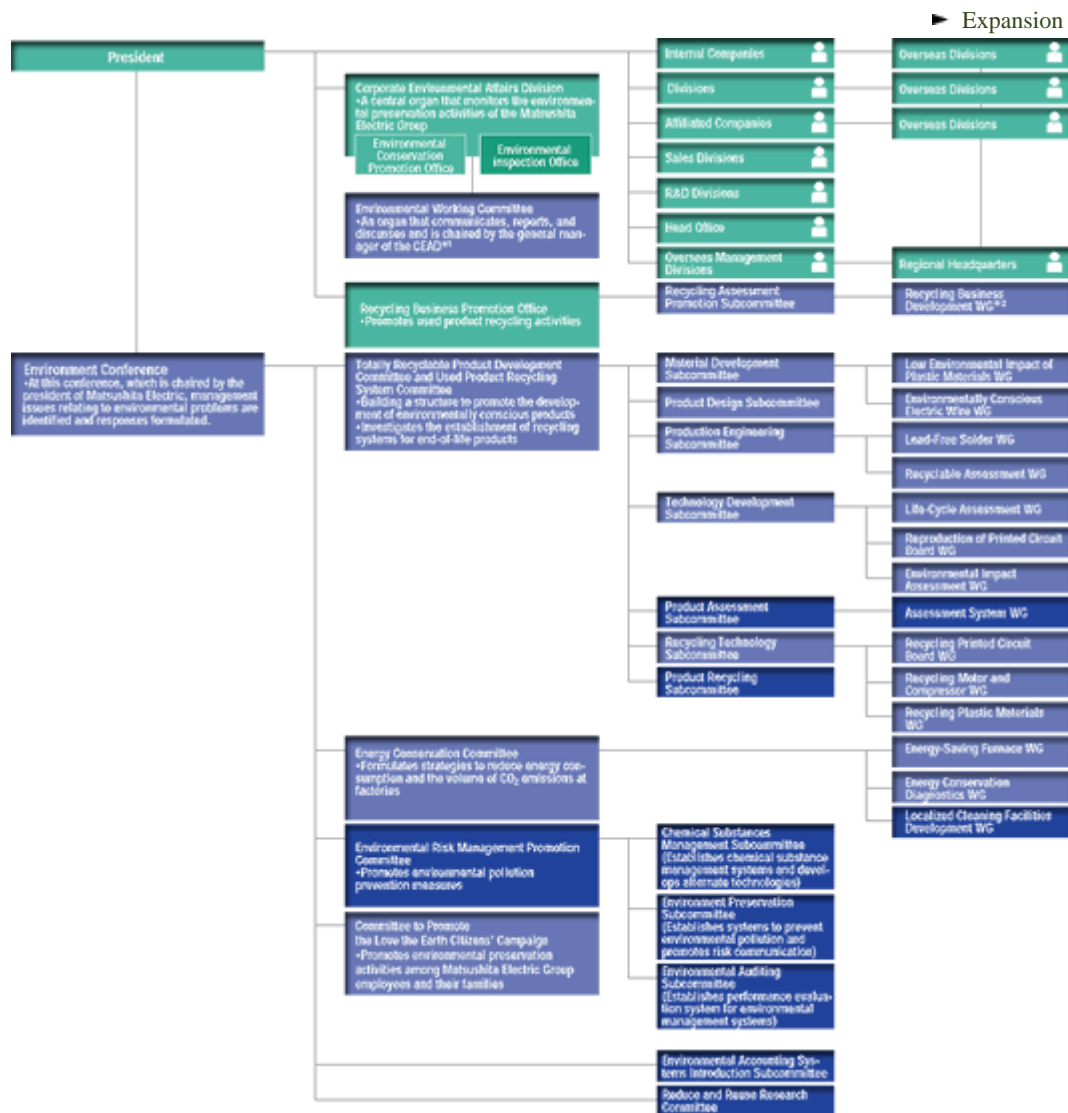
The education and training components of each environmental management program shall upgrade employee environmental awareness and instruct employees concerning the proper performance of procedures and practices to ensure compliance and achieve environmental targets and objectives.
8. Public Outreach

Each operating unit shall provide to the communities in which it operates and to the general public a description of its environmental policy and this Environmental Control Policy.

Environmental Preservation Organization

The Environment Conference*, which is chaired by the president of Matsushita Electric Industrial Co., Ltd., is responsible for formulating major environmental preservation policies and measures. Such policies and measures are communicated to environmental offices at all business units and then implemented. In addition, major issues to be addressed are identified by Groupwide committees and working groups in each division.

*The first Environment Conference was held in November 1997 and has been held since on a half-yearly basis.



■ Groupwide Organization ■ Environmental Preservation Promotion Organization (Darker shades of blue and green indicate new organization) □ Environmental Compliance Administrator

*1 Corporate Environmental Affairs Division *2 Working Group

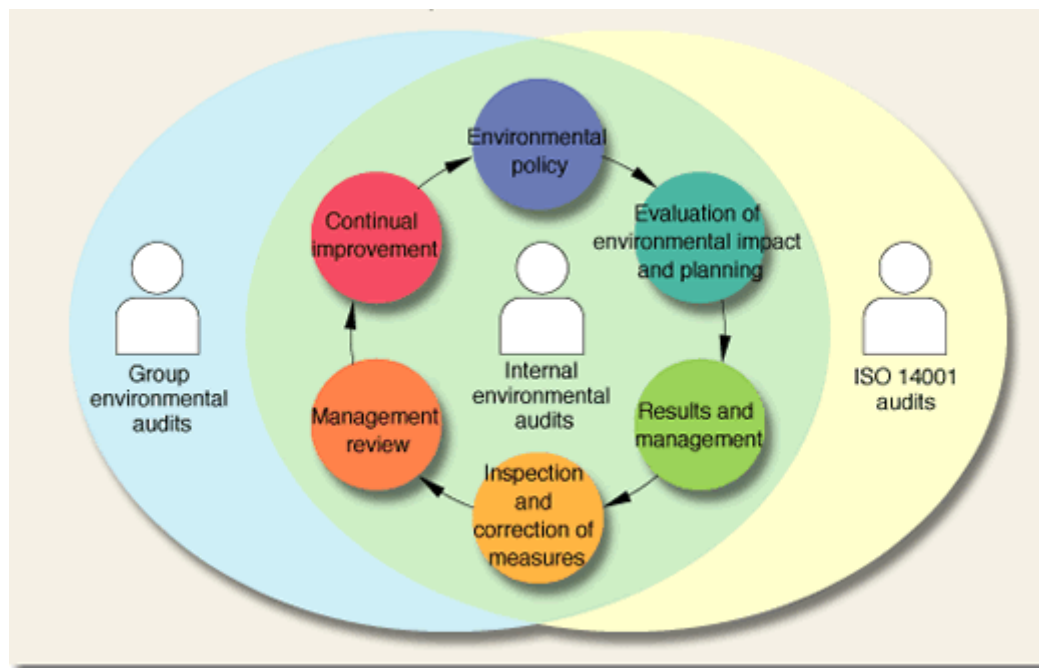
Environmental Audits and ISO 14001

Matsushita has promoted various measures to strengthen its Environmental Management Systems (EMS) and better evaluate the influences its business activities and products have on the environment. At the end of fiscal 1998, we completed one of our major goals of obtaining ISO 14001* certification for 221 sites worldwide.

Matsushita's environmental management is assessed under a three-tier environmental audit structure, comprising internal audits, the Group's environmental audits, and audits by external certification bodies.

*ISO 14001 is a standard relating to environmental management systems established by the International Organization for Standardization.

■ Matsushita Electric Group EMS



Environmental Audits and ISO 14001

Internal Environmental Audits

Organizations that are building EMS conduct internal environmental audits. Matsushita holds periodic seminars to train environmental auditors, thereby ensuring thorough and accurate assessments.

Number of Internal Environmental Auditors

Chief auditors	Approximately 430
Auditors	Approximately 2,190

(As of March 1999/Japan)

Group Environmental Audits

Members of these auditing teams are chosen from across Matsushita and have no direct affiliation with the operation being audited. These teams ensure that EMS are uniform and that the activities that make up these systems comply with legal regulations. Group environmental audits play a vital role in the transfer of knowledge throughout the Group.

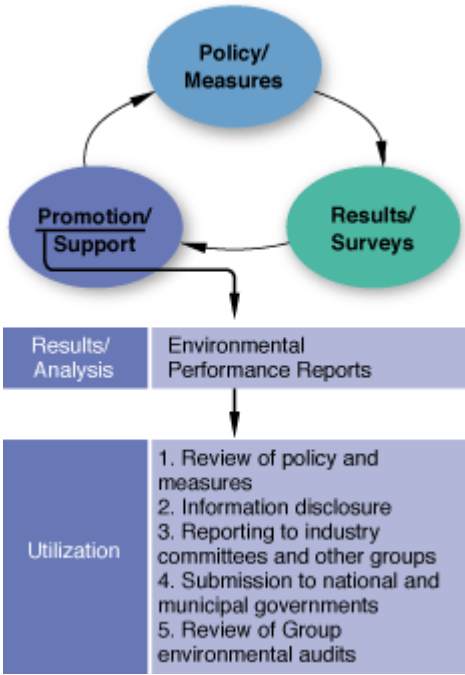
Environmental Advisors

In April 1999, Matsushita introduced a system under which academics and citizens who are active in its environmental fields are appointed as environmental advisors to assist in environmental activities. Advisors are appointed for two-year periods.

Utilization of Environmental Performance Reports

Since fiscal 1992, we have collected and analyzed Environmental Performance Reports from all business units to improve our EMS. To date, these analyses have centered on Japan; however, in fiscal 1998 the report contents were expanded to better understand the environmental impact of the entire Matsushita Electric Group worldwide. In addition, Environmental Performance Reports were prepared by major nonmanufacturing business units as part of efforts to construct the EMS.

Environmental Performance Reports



Environmental Audits and ISO 14001

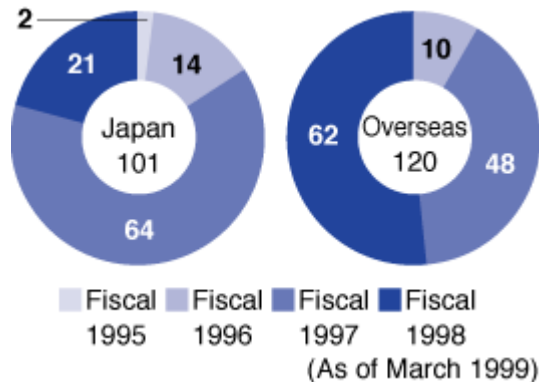
■ Manufacturing Sites

In fiscal 1998, Matsushita achieved its goal of obtaining ISO 14001 certification for 221 sites in its global manufacturing network. This is a goal we have pursued since fiscal 1995. Looking ahead, Matsushita aims to obtain certification for new sites within three years from the start of their operations.

■ Nonmanufacturing Sites

As of the end of fiscal 1998, seven nonmanufacturing sites had obtained certification. Currently, all medium-sized nonmanufacturing sites are building EMS with the aim of obtaining ISO 14001 certification by the end of fiscal 2000. Matsushita is targeting overseas offices to obtain certification by setting model sites.

■ Progress of ISO Certification at Manufacturing Sites



■ Progress of ISO Certification

Nonmanufacturing sites	7
Third-sector companies	2

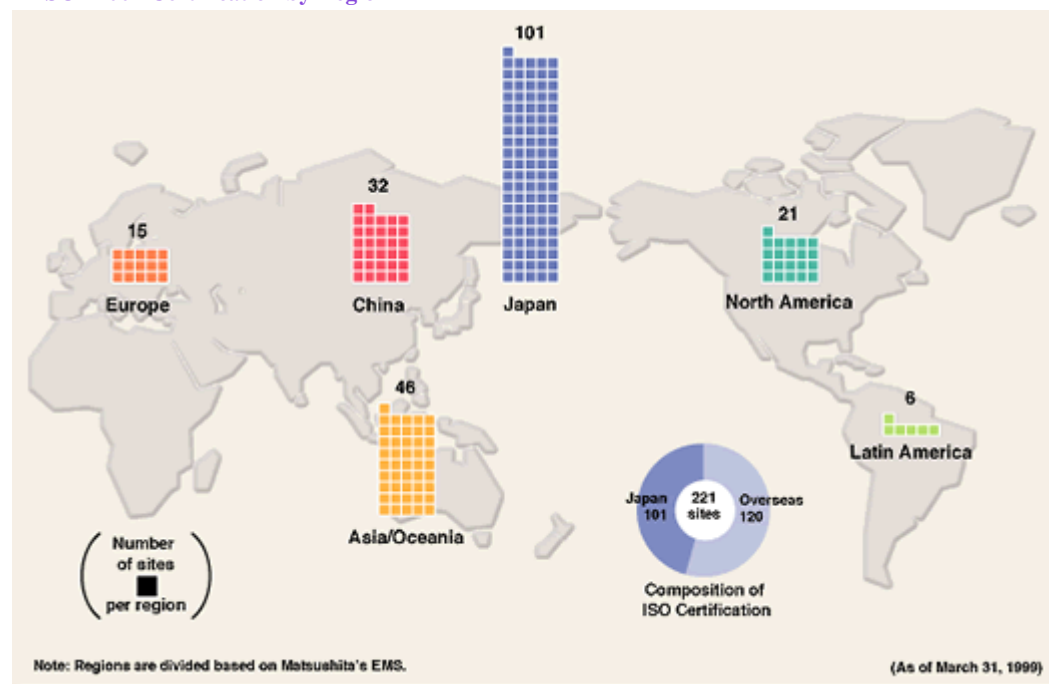
(As of March 1999)

■ Third-Sector* Companies

In September 1998, Kibi Matsushita Co., Ltd., became the first third-sector company in Japan to obtain ISO 14001 certification and was followed by Katano Matsushita Co., Ltd., in January 1999. The EMS of these companies were developed by disabled people as part of their principal responsibilities. Characteristics of these systems include the implementation of ideas put forward by disabled people, comprehensive and simple measures, and diagrams of all environment-related information.

*Joint ventures between private companies and national/municipal governments

■ ISO 14001 Certification by Region



Environmental Audits and ISO 14001

■ Overview of ISO 14001 Certification (As of March 31, 1999)

Sites	Date of Registration
Japan(101 Sites)	
AVC Company, Matsushita Electric Industrial Co., Ltd.	
Television & Network Systems Division (Ibaraki Site)	1997. 3
Television & Network System Division (Utsunomiya Site)	1997. 9
Fujisawa Site	1997. 4
AV Kadoma	1995.11
AVC Devices Division (Yamagata)	1996.12
AVC Devices Division (Sendai)	1997. 2
Audio Division (Fukushima)	1997. 1
Video Equipment Division (Okayama)	1997. 4
Recording Media Division (Tsuyama Site)	1997. 7
Personal Computer Division (Kobe Site)	1997. 2
Personal Computer Division (Moriguchi Site)	1997. 3
Home Appliance & Housing Electronics Company, Matsushita Electric Industrial Co., Ltd.	
Washing Machine Division	1998. 7
Vacuum Cleaner Division	1998. 6
Kitchen Appliance Division	1998. 6
Rice Cooker Division	1998. 4
Electric Iron Division	1998. 6
Nara Site	1997.11
Kitchen and Bath Group	1998. 7
Air-Conditioner Company, Matsushita Electric Industrial Co., Ltd.	
Kusatsu Site	1997. 10
Kofu Plant	1997. 5
Motor Company, Matsushita Electric Industrial Co., Ltd.	
Daito Site	1997. 8
Takefu Site	1998. 2
Yonago Site	1997.12
Matsusaka Precision Co., Ltd.	1999. 2
Matsushita Electric Industrial Co., Ltd.	
Electronic Circuit Capacitor Division / Matsue Matsushita Electric Co., Ltd.	1998. 4
Liquid Crystal Display Division (Ishikawa Site)	1998. 2
Corporate Production Engineering Division	1998. 3
Manufacturing Equipment Division (Kofu)	1997.12

Matsushita Electronics Corporation	
Takatsuki Site	1997.11
Kyoto Site (Nagaoka / Kyoto Research Center)	1997.11
Arai Site	1997. 8
Toyama Site (Uozu / Tonami)	1997. 2
Okayama Site	1997. 7
Utsunomiya Site	1996. 9
Matsushita Electronic Instruments Corporation (Takatsuki Factory)	1997.11
Matsushita Electronic Instruments Corporation (Utsunomiya Site)	1997. 6
West Electronic Co., Ltd.	1998. 3
Toyo Dempa Co., Ltd., Kyoto Plant	1997. 6
Toyo Dempa Co., Ltd., Kameoka Plant	1997. 9
Matsushita Communication Industrial Co., Ltd.	
Tsunashima	1997.12
Saedo	1997.12
Hanamaki	1998. 10
Shizuoka	1997.12
Matsumoto	1997. 6
Shirakawa	1995.12
Matsushita Electronic Components Co., Ltd.	
Kadoma Site	1997.11
Yashiro Site	1997.12
Capacitor Division	1996.12
Matsusaka Site	1998. 3
High Frequency Products Division (Kiyosu)	1997. 5
High Frequency Products Division (Gifu)	1997.11
High Frequency Products Division (Motomiya)	1997.11
Hokkaido Matsushita Electric Co., Ltd.	1997. 8
Fukui Matsushita Electric Co., Ltd.	1997. 7
Wakasa Matsushita Electric Co., Ltd.	1997. 8
Tajima Matsushita Electric Co., Ltd.	1998. 1
Tsuyama Matsushita Electric Co., Ltd.	1996.12
Yamaguchi Matsushita Electric Co., Ltd.	1997.12
Matsushita Nitto Electric Co., Ltd.	1998. 1
Matsushita Industrial Equipment Co., Ltd.	
Toyonaka Site	1998. 3
Toyama Matsushita Electric Co., Ltd.	1998. 8
Kadoma Site	1998.12
Kaga Site	1998.12

Matsushita Battery Industrial Co., Ltd.	
Moriguchi Site A Block	1998. 4
Moriguchi Site B Block	1998. 7
Chigasaki Site	1998. 9
Hamanako Site	1997. 9
Wakayama Site	1998. 3
Matsushita Refrigeration Company	
Osaka Site	1997. 4
Refrigerator Division, Kusatsu Business Unit	1997. 2
Fujisawa Site	1997. 4
Vending Machine / Commercial Refrigeration Division	1997. 10
Cooling Device Division	1997. 10
Ayama Site	1997. 9
Kyushu Matsushita Electric Co., Ltd.	
Headquarters Group	1997.12
Factory Automation Division	1997. 8
Personal Telecom Division	1997.11
Facsimile Division	1997. 10
Saga Site	1997. 7
Visual Devices and Components Division	1997. 10
Kikusui Site	1998. 3
Precision Devices and Components Division	1998. 3
Miyazaki Matsushita Electric Co., Ltd.	1997.12
Kagoshima Matsushita Electric Co., Ltd.	1997. 3
Matsushita Seiko Co., Ltd.	
Fujisawa Division	1998. 8
Osaka Division	1998. 2
Kasugai East Division	1997.11
Kasugai West Division	1996.12
Matsushita Graphic Communication Systems, Inc.	
Shonan Plant	1998.12
Nagano Plant	1998. 4
Niigata Plant	1997. 5
Utsunomiya Plant	1998. 3
Matsushita Kotobuki Electronics Industries, Ltd.	
Saijo Office	1998. 3
Matsuyama Office	1997. 2
Sakaide Office	1998. 10
Oosu Office	1997.12
Wakimachi Office	1998. 8
Ipponmatsu Office	1998. 1
Kotobuki Kogei Co., Ltd.	1998.11
Inai Electronics Co., Ltd.	1998. 1
Toyonaka Electronics Co., Ltd.	1998. 9

Asia / Oceania (46 sites)	
Matsushita Refrigeration Industries (S) Pte. Ltd.	1996.11
Matsushita Electronics (S) Pte. Ltd.	1997. 3
Matsushita Electric Motor (S) Pte. Ltd.	1998.12
Matsushita Electronic Components (S) Pte. Ltd.	1998. 4
Matsushita Denshi (S) Pte. Ltd.	1997.12
Matsushita Kotobuki Electronics Industries Singapore Pte. Ltd.	1998. 9
Matsushita Graphic Communication Systems (S) Pte. Ltd.	1997. 10
Matsushita Technology (S) Pte. Ltd.	1997.12
Matsushita Electric Co., (M) Bhd. SA1	1998.11
Matsushita Electric Co., (M) Bhd. SA2	1996.12
Matsushita Electric Co., (M) Bhd. BNG	1997. 8
Matsushita Electric Co., (M) Bhd. PK	1998.12
Matsushita Industrial Corporation Sdn. Bhd.	1997.12
Matsushita Air-Conditioning Corporation Sdn. Bhd.	1997. 6
Matsushita Compressor and Motor Sdn. Bhd. 1	1998. 1
Matsushita Compressor and Motor Sdn. Bhd. 2	1997.12
Matsushita Compressor and Motor Sdn. Bhd. 3	1997.12
Matsushita Electronic Components (M) Sdn. Bhd.	1998. 10
Matsushita Electronic Devices (M) Sdn. Bhd.	1998. 10
Kyushu Matsushita Electric (Malaysia) Sdn. Bhd.	1997. 10
Matsushita Television Co., (Malaysia) Sdn. Bhd.	1997. 1
Matsushita Electronic Motor (Malaysia) Sdn. Bhd.	1998. 3
Matsushita Precision Capacitor (M) Sdn. Bhd.	1998. 2
Matsushita Foundry Industries Sdn. Bhd.	1998. 6
Matsushita Refrigeration Industries (M) Sdn. Bhd.	1998. 3
Toyodempa Malaysia Sdn. Bhd.	1998.12
Matsushita Audio Video (M) Sdn. Bhd.	1997. 3
Matsushita Battery (THAILAND) Co., Ltd.	1998. 7
Matsushita Electronic Components (THAILAND) Co., Ltd. Matsushita Communication Industrial (THAILAND) Co., Ltd. Matsushita Seiko (THAILAND) Co., Ltd. Kyushu Matsushita Electric (THAILAND) Co., Ltd. Matsushita Industrial Equipment (THAILAND) Co., Ltd. Matsushita Electric AVC (THAILAND) Co., Ltd. Matsushita Technology (THAILAND) Co., Ltd.	1998. 7
A.P. National Co., Ltd.	1998. 7
Matsushita Refrigeration Company (THAILAND) Ltd.	1998. 7
Matsushita Electric Philippines Corporation Matsushita Business Machine Corporation of the Philippines	1998. 5
Matsushita Business Machine Corporation of the Philippines (Santa Rosa) Matsushita Communication Industrial Corporation of the Philippines	1997.12
P.T. National Gobel	1998. 1
P.T. Matsushita Gobel Battery Industry	1997. 2
P.T. Matsushita Kotobuki Electronics Industries Indonesia	1998. 6

P.T. Matsushita Kotobuki Electronics Industries Indonesia	1998. 6
P.T. Asia Matsushita Battery	1997.12
P.T. Panasonic Gobel Electronic Components	1999. 3
Matsushita Electric Co., (Australia) Pty. Ltd.	1998.12
Indo National Ltd.	1998. 2
Indo Matsushita Carbon Co., Ltd.	1998. 4
Lakhanpal National Ltd.	1998. 2
Indo Matsushita Appliances Co., Ltd.	1998.12
Matsushita Electric (Taiwan) Co., Ltd.	1997. 4
Panasonic Computer (Taiwan) Co., Ltd.	1997. 4
Taimatsu Industrial Co., Ltd.	1998. 6

China (32 sites)	
Beijing.Matsushita Color CRT Co., Ltd.	1996.12
Hangzhou Matsushita Home Appliance Co., Ltd.	1997.12
Beijing Matsushita Communication Equipment Co., Ltd.	1998.12
Matsushita-Wanbao (Guangzhou) Electric Iron Co., Ltd.	1998.12
Matsushita-Wanbao (Guangzhou) Air-Conditioner Co., Ltd. Matsushita-Wanbao (Guangzhou) Compressor Co., Ltd.	1998. 8
Shunde Matsushita Seiko Co., Ltd.	1998. 9
Beijing Matsushita Electronic Components Co., Ltd.	1998. 5
Shanghai Matsushita Battery Co., Ltd.	1998. 4
Qingdao Matsushita Electronic Components Co., Ltd.	1997.12
China Hualu Matsushita AVC Co., Ltd.	1998. 6
Tangshan Matsushita Industrial Equipment Co., Ltd.	1998.11
Shanghai Matsushita Microwave Oven Co., Ltd.	1998. 8
Shanghai Matsushita Electronic Instrument Co., Ltd.	1998. 6
Shenyang Matsushita Storage Battery Co., Ltd.	1998.12
Hangzhou Matsushita Motor Co., Ltd.	1998.12
Shanghai Matsushita Semiconductor Co., Ltd.	1998.12
Dalian Matsushita Communication Industrial Co., Ltd.	1998.12
Beijing Matsushita Precision Capacitor Co., Ltd.	1998.12
Wuxi Matsushita Refrigeration Co., Ltd.	1998. 10
Xinhui Matsushita Industrial Equipment Co., Ltd.	1998.11
Anyang Matsushita Carbon Co., Ltd.	1999. 2
Tianjin Matsushita Electronic Components Co., Ltd.	1999. 1
Suzhou Matsushita Communication Industrial Co., Ltd.	1998. 10
Shandong Matsushita Television and Visual Co., Ltd.	1998.11
Hangzhou Matsushita Gas Appliances Co., Ltd.	1998.12
Beijing Great Wall Matsushita Seiko Airconditioning Equipment Co., Ltd.	1998.11
Wuxi Matsushita Refrigeration Compressor Co., Ltd.	1998. 10
Zhuhai Matsushita Electric Motor Co., Ltd.	1998. 10
Matsushita Audio (Xiamen) Co., Ltd.	1997.11
Zhuhai Matsushita Battery Co., Ltd.	1998. 9
Matsushita Seiko Hong Kong International Manufacturing Co., Ltd.	1999. 2
Matsushita Electronic Components (H.K.) Co., Ltd.	1999. 3

North America (21 sites)	
Matsushita Television & Network Systems Company of America Matsushita Television & Network Systems de Baja California S.A. de C.V.	1997.12
American Matsushita Electronics Company	1997.12
Matsushita Electric of Puerto Rico, Inc.	1999. 3
Matsushita Compressor Corporation of America	1997.11
Matsushita Home Appliance Corporation of America	1999. 3
Matsushita Communications Industrial of U.S.A.	1998.11
Matsushita Communication Industrial de Mexico S.A. de C.V.	1997.12
Matsushita Electronic Components Corporation of America/td>	1997. 8
Matsushita Electronic Components Corporation of America	1998. 2
Matsushita Electronic Components Corporation of America	1998. 2
Matsushita Electronic Components de Baja California, S.A. de C.V.	1998. 4
Matsushita Ultra-Tech. Battery Corporation	1998.11
Matsushita Battery Industrial Corporation of America 1	1998.12
Matsushita Battery Industrial Corporation of America 2	1998. 10
Matsushita Battery Industrial Corporation of America 3	1998.12
Matsushita Battery Industrial de Baja California, S.A. de C.V.	1998. 3
Matsushita Refrigeration Company of America	1998. 6
Kyushu Matsushita Electric Corporation of America	1998. 2
Matsushita Kotobuki Electronics Industries of America Inc.	1999. 2
Matsushita Electric Motor Corporation of America	1999. 3
Matsushita Technology Corporation of America	1999. 3

Europe (15 sites)	
Matsushita Electric (U.K.) Ltd.	1997. 7
Kyushu Matsushita Electric (U.K.) Ltd.	1996. 9
Matsushita Communication Industrial UK Ltd.	1996. 7
Matsushita Electronic Components (U.K.) Ltd.	1999. 3
Matsushita Electronic Magnetron Corporation (U.K.) Ltd.	1997. 6
Matsushita Graphic Communication Systems (U.K.) Ltd.	1998. 7
Matsushita Industrial Equipment Co. (U.K.) Ltd.	1998.11
Matsushita Kotobuki Electronics Industries Ireland Ltd.	1998. 3
Matsushita Audio Video (Deutschland) GmbH	1997.12
Matsushita Electronic Components (Europe) GmbH	1998.11
Matsushita Communication Deutschland GmbH	1997. 2
Matsushita Business Machine (Europe) GmbH	1997. 8
Matsushita Electronics (Europe) GmbH	1999. 3
Matsushita Electric Espana S.A.	1998. 5
Matsushita Television Central Europe s.r.o.	1998.11
Latin America (6 sites)	
Panasonic de Mexico, S.A. de C.V.	1999. 3
Panasonic de Costa Rica, S.A.	1999. 3
Matsushita Electric Industrial del Peru S.A./td>	1998.11
Panasonic do Brasil Ltda.	1999. 3
Panasonic de Amazonia S.A.	1998. 10
Panasonic Componentes Electronicos do Brasil Ltda.	1999. 3
Nonmanufacturing (7 sites)	
Matsushita Research Institute Tokyo, Inc.	1998. 8
Matsushita Electric Industrial Co., Ltd., Tokyo Branch	1998. 8
Matsushita Electric Industrial Co., Ltd., Head Office	1998. 9
Matsushita Electric Industrial Co., Ltd., Corporate R&D Division (Keihanna Site)	1998.11
Matsushita Electric Industrial Co., Ltd., Corporate R&D Division (Moriguchi Site)	1999. 3
Matsushita Air-Conditioning R&D Centre Sdn. Bhd.	1998. 10
Panasonic Singapore Laboratories Pte. Ltd.	1999. 3
Third-Sector Companies (2 sites)	
Kibi Matsushita Co., Ltd.	1998. 9
Katano Matsushita Co., Ltd.	1999. 1

ote: Regions are divided based on Matsushita's EMS.

Progress Toward Main Environmental Targets

The Matsushita Environmental Preservation Action Plan (Voluntary Plan for the Environment), which was established in March 1993, sets concrete environmental targets for the entire Group. The table below outlines the progress that has been made on major themes under the plan.

	Goal		Results
Establishment of EMS	<ul style="list-style-type: none"> To obtain ISO 14001 certification for all manufacturing sites in Matsushita's global network (100 sites in Japan and 111 overseas) by March 31, 1999. 		<ul style="list-style-type: none"> 1995: 2 sites 1996: 24 sites 1997: 112 sites 1998: 83 sites <p>At present, 221 sites have obtained ISO 14001 certification.</p>
Promotion of Product Assessments	<ul style="list-style-type: none"> To conduct product assessments at the design stage (preevaluation) with the aim of reducing their environmental impact throughout their entire life cycles. 		<ul style="list-style-type: none"> 1991: The Matsushita Electric Group released its Product Assessment (Version 1), listing 35 assessment items under 11 categories. 1993: Product Assessment (Version 2) released 1995: Product Assessment (Version 3) released 1997: Product Assessment (Version 4) released <p>There are now 50 assessments under 35 categories.</p>
Prevention of Global Warming	Products	<ul style="list-style-type: none"> To reduce the energy consumption of mainstay products 10% to 15% from fiscal 1990 	<ul style="list-style-type: none"> Energy consumption of video recorders down 78% ^{*1}; refrigerators down 70% ^{*2}; air conditioners down 46% ^{*3}; and wide-screen TVs down 40% ^{*4}
	Manufacturing sites	<ul style="list-style-type: none"> To lower the volume of CO₂ emissions at factories to fiscal 1990 levels by fiscal 1998 and reduce the amount of energy consumed per 	<ul style="list-style-type: none"> 1998: The volume of CO₂ emissions at factories increased 7% and energy consumed per unit of sales grew 26%.

		unit of sales 25% by fiscal 2000 (Japan).	
Reducing Industrial Waste	<ul style="list-style-type: none"> To reduce the volume of manufacturing waste generated per unit of sales in fiscal 1991 50% by fiscal 1995 and 75% by fiscal 2000 (Japan). 	<ul style="list-style-type: none"> A 44% reduction was achieved by fiscal 1995. A 57% reduction was achieved by fiscal 1996. A 62% reduction was achieved by fiscal 1997. An 80% reduction was achieved by fiscal 1998. 	

*1. 1990: 84.7kWh/year (NV-F600); 1998: 18.8kWh/year (NV-H120)

*2. 1995: 73kWh/month (NR-D41EM2); 1998: 21kWh/month (NR-W400). Comparison is made with the fiscal 1995 figures due to the adoption of a new measurement method (JIS-B) in that year.

*3. 1990: 1,851kWh/year (CS-G25A); 1998: 933kWh/year (CS-G25M). Figures for 1990 are estimates, as the measurement method was not established until fiscal 1994.

*4. 1993: 280kWh/year (TH-32WD10); 1998: 169kWh/year (TH-32MW50)

Environmental Accounting

Environmental accounting is a management tool that helps management accurately identify the costs associated with environmental activities and consequently the efficiency of such activities. Such systems are still in a nascent stage, with international standards concerning the recording and classification of environment-related expenditures not yet developed. Accurate information on environment-related expenditures, together with individual Environmental Performance Reports, will prove extremely useful in determining whether Group policies, objectives, and actual targets are being met. In October 1998, Matsushita established the Environmental Accounting Introduction Subcommittee within its Accounting Department (Head Office) and Corporate Environmental Affairs Division (CEAD). This subcommittee, which comprises members from all main domestic subsidiaries and affiliated companies, is evaluating various methods to account for environment-related costs, including personnel costs. The depreciation expenses for plant and equipment are yet to be included in environmental accounts. Matsushita aims to expand its existing environmental accounting to include such costs as those associated with greenification projects and green procurement activities.

Environmental Accounting

■ Results for Fiscal 1998

Environmental accounting records for fiscal 1998 covered the factories of Matsushita Electric and 10 major subsidiaries in Japan. Environment-related expenditure on plant and equipment was ¥13.2 billion, or approximately 3.7% of the Group's total plant and equipment investment. Energy conservation measures accounted for approximately ¥6.8 billion, or 50%, of this expenditure. Environment-related R&D amounted to ¥26.0 billion, or 30% of total environment-related expenses. Quantitative cost savings were identified in two areas: manufacturing waste disposal and energy consumption at factories.

■ Future Developments

Matsushita will continue to develop its environmental accounting system to gain a better quantitative understanding of the costs and benefits of its environmental activities. The ultimate aim is to calculate an ecoefficiency index* for Matsushita's environment-related investments and increase the components included in the calculation of this index.

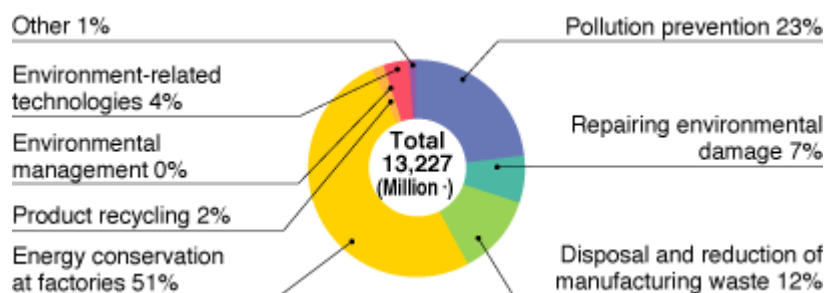
*Ecoefficiency index = savings attributable to the reduction of environmental burden/ environment-related investment

■ Environment-Related Expenditure by the Matsushita Electric Group in Fiscal 1998 (Million ¥)

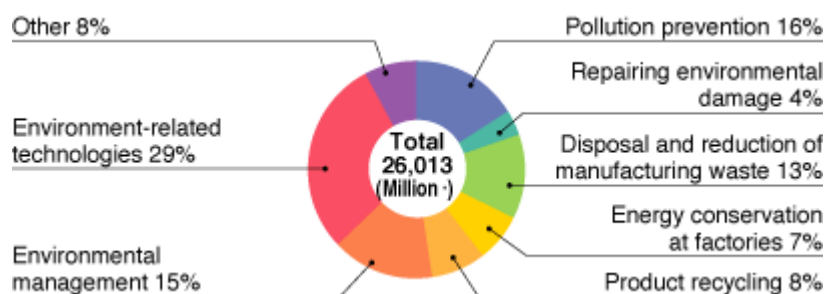
Category	Details	Investment in plant and equipment	Expenses
Pollution prevention	Reduction of air, water, soil, noise, and vibration pollution as well as soil subsidence	¥3,048	¥4,146
Repairing environmental damage	Surveys of underground water and soil pollution, etc., and restoration measures	932	983
Disposal and reduction of manufacturing waste (Refer to the graph below.)	Appropriate disposal of manufacturing waste, reduction of waste amount, and consignment of disposal	1,586	3,264
Energy conservation at factories (Refer to the graph below.)	Implementation of plans to reduce energy consumption at factories by 2000 and to lower	6,771	1,867
Product recycling	Establishment of a recycling system for used products and recycling verification testing (technology development)	225	2,128
Environmental management	Preparation and maintenance of ISO 14001 standards and environment-related training/education	10	3,958
Environment-related technologies	Technology developed principally for environment-related purposes	498	7,627
Other	Items not included in the above categories	157	2,040
Total		¥13,227	¥26,013

Note: Expenses do not include depreciation expenses for plant and equipment

■ Breakdown of Environment-Related Investment in Plant and Equipment.



■ Breakdown of Environment-Related Expenses



■ Savings Generated by Environment-Related Investment (Million ¥)

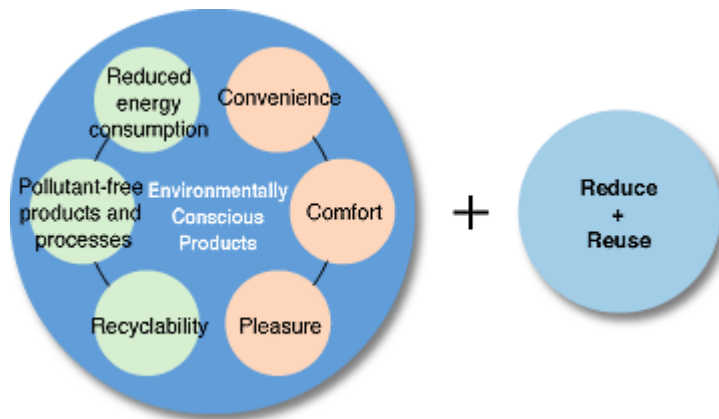
Category	Details	Amount
Disposal and reduction of manufacturing waste	Manufacturing waste disposal cost savings achieved through waste reduction	¥731
Energy conservation at factories	Energy cost savings	2,178

Note: Group companies in Japan included in environmental accounting are Matsushita Electric Industrial Co., Ltd., Matsushita Electronics Corporation, Matsushita Communication Industrial Co., Ltd., Matsushita Electronic Components Co., Ltd., Matsushita Industrial Equipment Co., Ltd., Matsushita Battery Industrial Co., Ltd., Matsushita Refrigeration Company, Kyushu Matsushita Electric Co., Ltd., Matsushita Seiko Co., Ltd., Matsushita Graphic Communication Systems, Inc., and Matsushita Kotobuki Electronics Industries, Ltd.

Environmentally Conscious Products

In addition to enhancing basic product qualities and performances for consumer convenience and comfort, the Group is working to improve such environmental qualities for products as reduced energy consumption and pollutant emission levels as well as product recyclability. At Matsushita, they are called Environmentally Conscious Products (ECP) and display performance details on environmental characteristic stickers for the benefit of customers. We are also stepping up our activities to reduce the number of end-of-life products and promote reuse.

■ Concept for ECP

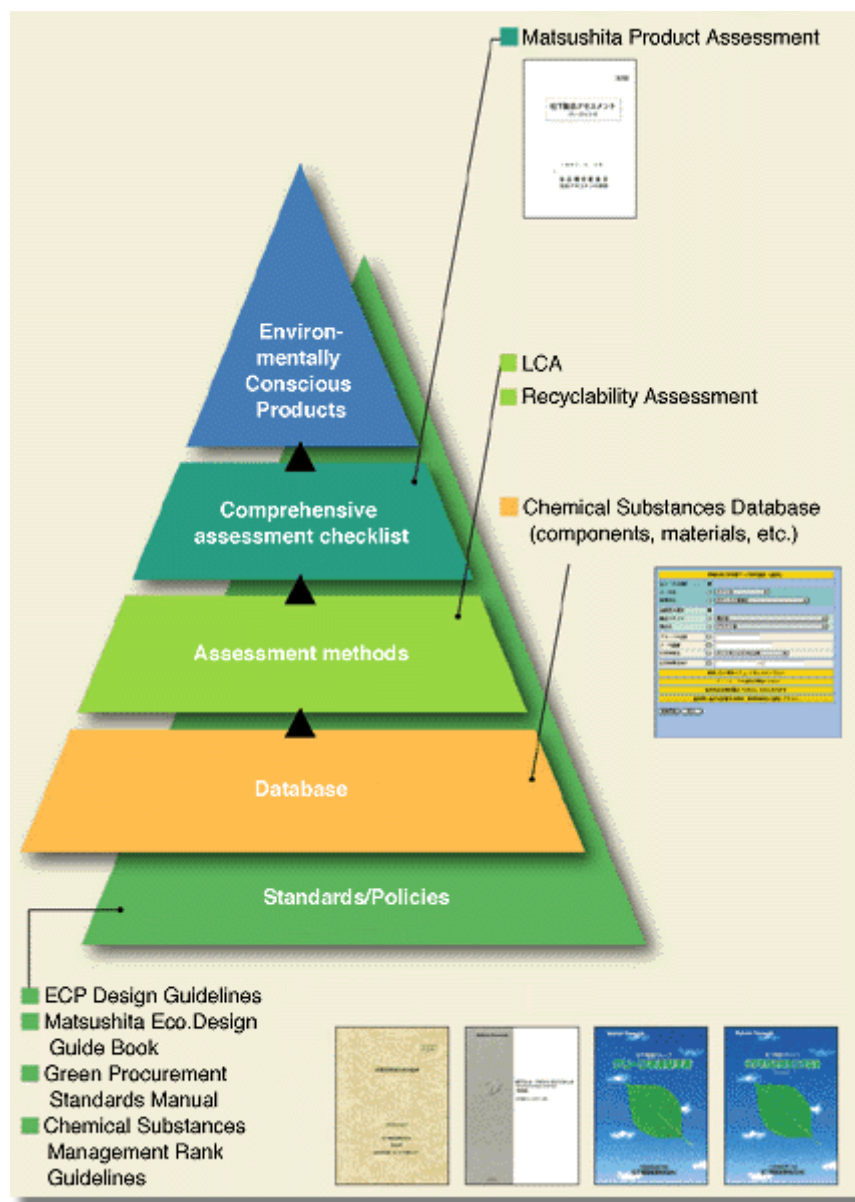


Environmentally Conscious Products

■ Advance Evaluation and Product Assessment

To promote the development of ECP, environmental impact is carefully considered at business units throughout Matsushita. In fiscal 1998, in addition to introducing a number of new product assessment categories, we distributed a Green Procurement Standards Manual and ECP Design Guidelines to raise the quality of our products. One of the main tools used to evaluate products is the Matsushita Product Assessment, a comprehensive checklist that takes into account the environmental impact of products from the planning and design stage. In addition to upgrading this product assessment, we are working on life-cycle assessment (LCA) and other product assessment methods.

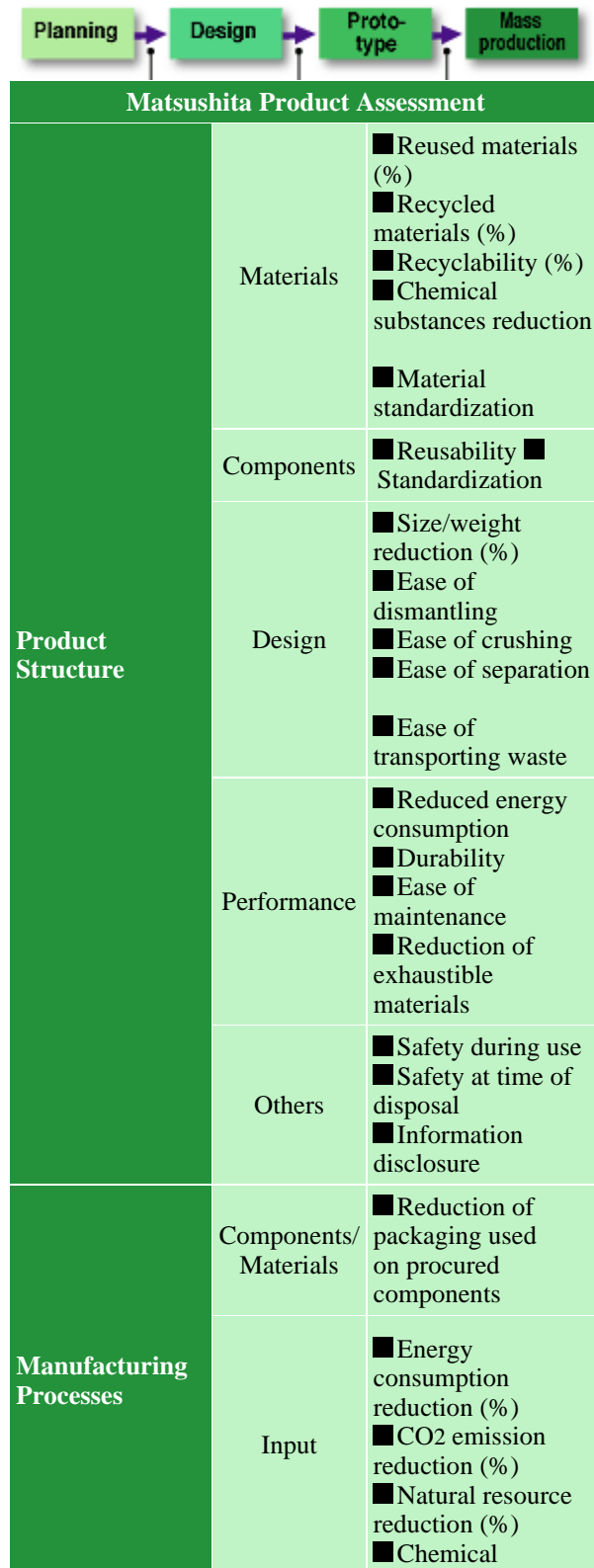
■ Assessment of ECP



Environmentally Conscious Products

■ Matsushita Product Assessment

In 1991, Matsushita introduced the Matsushita Product Assessment (Version 1)-a system that evaluates the environmental impact of products from the planning and design stage-which took the lead in the area of product assessment systems. This assessment was upgraded to include items covering energy conservation and chemical substances in 1993 and 1995, respectively. Version 4, released in 1997, includes items covering production processes and a general quantitative evaluation of the environmental consciousness of products.



Packaging		substance reduction (%)
	Output	■ Output volume reduction (%) ■ Manufacturing waste reduction (%)
	Materials	■ Reused materials (%) ■ Recycled materials (%) ■ Recyclability (%) ■ Chemical substance reduction (%) ■ Material standardization
	Input	■ Size/weight reduction (%) ■ Ease of separation ■ Reusability ■ Ease of transportation of waste

Environmentally Conscious Products

■ LCA

A methodology for identifying and quantifying the product qualities—from acquisition of raw materials to disposal—that influence the environment and evaluate such qualities to improve the environmental consciousness of products, is known as LCA. Matsushita began using LCA to quantitatively evaluate the environmental impact of its products in fiscal 1996 and has used the information to develop products with superior environmental qualities. For example, in fiscal 1998 LCA information was used in the planning and design of air conditioners.

■ Recyclability Assessment

In 1998, Matsushita developed a quantitative evaluation method to assess the ease of dismantling and reusability of components and materials in the product design stage. Currently, this evaluation method is used to assess 10 main products.

Environmentally Conscious Products

■ Product Design Guidelines

To improve the environmental qualities of products, Matsushita released the Matsushita Eco.Design Guide Book for its Design Department in February 1999 and the Environmentally Conscious Product Design Guidelines for its Planning & Design Department in March 1999.

■ Green Procurement

In March 1999, Matsushita released its Green Procurement Standards Manual. The standards encourage the procurement of materials of a higher environmental quality by educating suppliers about the environmental standards of Matsushita and helping them to implement measures to improve their environmental performances. The Chemical Substances Management Rank Guidelines is given a heavy weighting in evaluating suppliers. This policy ranks 245 chemicals (551 substances) in three categories: prohibited, reduction required, and appropriate control required. In the near future, the Group will assess approximately 3,600 major suppliers, which cover 70% to 80% of the Group's total annual purchasing amount in Japan-approximately ¥2,200 billion-using the Green Procurement Standards Manual.

■ Green Procurement Concept



■ Green Procurement Standards Manual

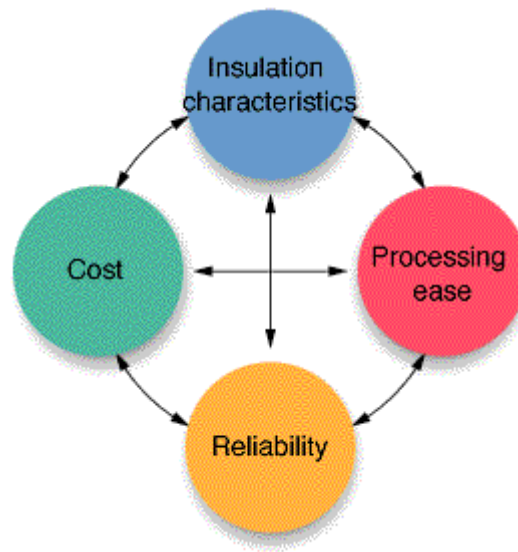
Suppliers Assessment Categories	+	Material Assessment Categories
<ul style="list-style-type: none">■ ISO 14001 certification■ Company environmental philosophy and policies (5 categories)■ Company environmental management organization and plans (3 categories)■ Environmental impact (11 categories)■ Environmental education and disclosure of information (3 categories)■ Distribution rationalization		<ul style="list-style-type: none">■ Compliance with legal regulations■ Prohibited chemical substances (2 categories)■ Reduction of chemical substances requiring management■ Prevention of vibration, noise, and odors (3 categories)■ Reduction of hazardous/toxic chemicals at disposal (4 categories)■ Energy conservation/resource conservation and use of recycled resources (6 categories)■ Recyclability (5 categories)■ Disclosure of environmental information on materials■ Reduction of the environmental burden of packaging materials (9 categories)

Technology Development

■ Halogen-Free Electric Wire

PVC resins and other materials that are made from halogen compounds are often used to cover electric wire used in electronic products because of their insulation and heat-resistant qualities. This poses a potential environmental burden, as internal wire is often incinerated during product disposal. The development of a high-performance, reliable, easy-to-process alternate insulation material has been a prominent issue in the industry. In 1998, Matsushita cooperated with large manufacturers of electric wire to develop the industry's first halogen compound-free material for low-voltage lead wires, the most common type of wiring found in electronic products. The material was adopted for the first time in two wide-screen TVs (TH-36FP20 and 32FP20) released in September 1999.

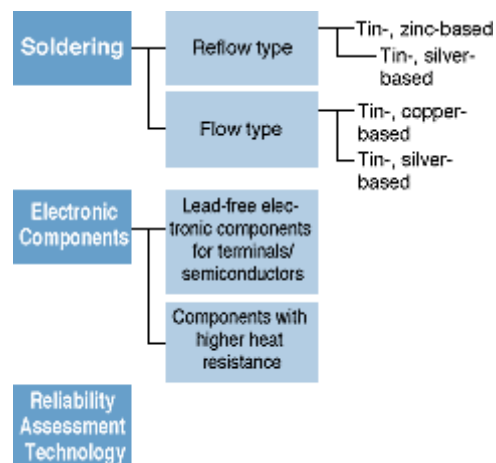
■ Development of Electric Wire



■ Lead-Free Soldering

The lead in solder that is commonly used in electronic products is potentially harmful to the environment after disposal. To overcome this problem, Matsushita has developed connecting technology and electrode technology using lead-free soldering. In October 1998, Matsushita introduced the MJ-SJ30, the first portable MD player in the world to adopt tin- and silver-based lead-free solder for use in reflow soldering. This technology is praised for its compatibility with existing mounting facilities and was awarded the Technology Prize from the Electronics Mounting Association in March 1999. Subsequently, in January 1999 we began trial commercial production of video recorders that use tin- and copper-based lead-free solder in flow soldering, thereby cutting solder material costs approximately in half. To promote the use of lead-free solder, the Group is developing production technology that supports processing quality and reliability higher than that available with lead solder. Also, in the area of electronic components and semiconductors, the Group is gradually replacing lead-plated parts with lead-free alternatives.

■ Lead-Free Soldering and Electronic Components



Technology Development

■ Plastic Materials with Low Environmental Impact

Many different grades of resin are used to meet the various specifications of the plastic components used in electronic products. Standardization is necessary to promote recycling. In January 1997, Matsushita prepared the Matsushita Plastics Standard Grades, which outlined standard grades for the four main resins used in production. This number of resins was raised to 10 in January 1998, thereby significantly reducing the total number of resin grades. In July 1999, we performed environmental evaluations on 42 chemical substances that contain plastic materials used by the Group and established the Matsushita Plastics Standard Grades (Version 2). This version identifies resins that do not contain halogen compounds as well as those that, while containing halogen, do not contain specific bromine flame-retardant agents. Matsushita's TH-36FP20 wide-screen TV was the first TV in the industry to have a cabinet and back cover made completely from halogen-free flame-retardant plastic.

■ Matsushita Plastics Standard Grades (10 resins)

Plastics	Grades
PS (polystyrene)	10
PP (polypropylene)	9
ABS (acrylonitrile butadiene styrene)	12
POM (polyacetal)	16
PBT (polybutylene terephthalate)	14
GF-PET (glass fiber polyethylene terephthalate)	11
PC (polycarbonate)	12
PA6 (nylon 6)	6
PA66 (nylon 66)	6
m-PPE (denatured polyphenylether)	13

■ Matsushita Plastics Standard Grades (Version 2) (for Polycarbonate)

	PC							PC/ABS				
	1	2	3	4	5	6	7	8	9	10	11	12
A												
B												
C												
D												
E												
F												

- Halogen-free flame-retardant grade
- Bromine-free flame-retardant grade
- Standard grade

Research and Development

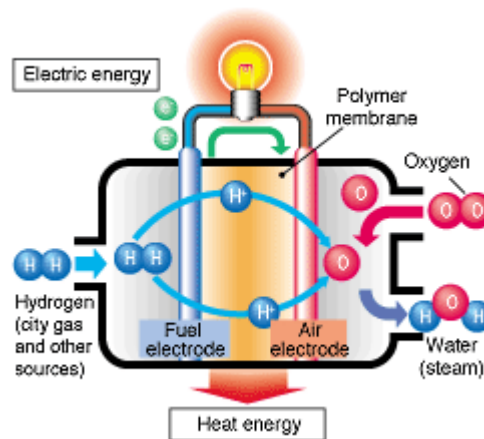
■ Fuel Cells

Matsushita has begun developing home cogenerating systems using polymer electrolyte type fuel cells, which convert chemical energy into electricity generated by the reaction between oxygen and hydrogen. Polymer electrolyte type fuel cells operate efficiently at temperatures less than 100° C, making them suitable for household use. Heat energy is generated with electricity generation by the fuel cells, and minimum loss occurs during electricity transmission. We are also progressing with research on fuel cells for automobiles.

■ Fuel Cell



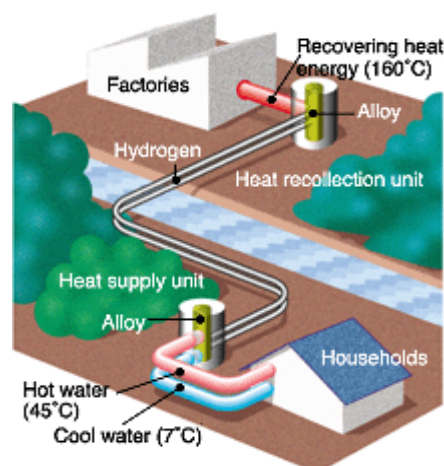
■ Harnessing Heat Energy Using Hydrogen-Absorbing Alloy



■ Hydrogen-Absorbing Alloy Technology

Matsushita is conducting research on heat pump systems made from a special alloy. The alloy recovers heat energy radiated by desorbing hydrogen at approximately 160 and the energy is transferred at room temperatures to a location where energy is required. Another chemical reaction between the hydrogen and alloy generates enough energy to heat water to approximately 45°C or cool it to 7°C. The commercialization of this system will allow the delivery of low temperature exhausted heat energy generated at factories and power stations to households with minimal energy loss.

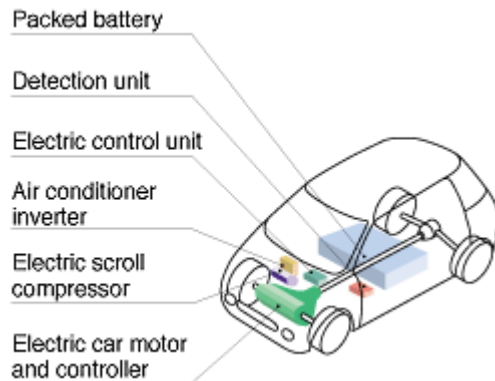
■ Harnessing Heat Energy Using Hydrogen-Absorbing Alloy



Research and Development

■ Products Related to Pure Electric and Hybrid Vehicles

Electric and hybrid vehicles are attracting attention as environmentally conscious vehicles of the future. Pure electric vehicles use clean energy sources—emitting no exhaust gas—while hybrid electric vehicles, which employ a dual drive system that consists of an electric motor and an engine, emit substantially less NOX and CO2 than cars with conventional gasoline engines. Matsushita is contributing to efforts to popularize environmentally conscious vehicles through its development of high- quality nickel hydrogen batteries, automobile motors, air conditioners, and various components.



■ Components for Pure Electric and Hybrid Electric Vehicles



The hybrid car packed battery made to Toyota Motor Corp. specifications is composed of 240 units of nickel hydrogen battery.

■ Integrated Household Energy Management System

Matsushita's Integrated Household Energy Management System has emerged from its R&D efforts to promote energy saving. The system has achieved large-scale energy conservation through integrated management and fine-tuned control in such areas as air conditioning, hot water supply, lighting, and solar power generation. In January 1999, we began tests on the system at a testing facility in Tokyo.

■ Warp Square HII* House, a System Testing Facility



*Home information infrastructure

Lineup of Environmentally Conscious Products

Matsushita has set concrete targets to achieve by 2000 concerning energy consumption, the reduction of specific chemical substances, and recycling rates.

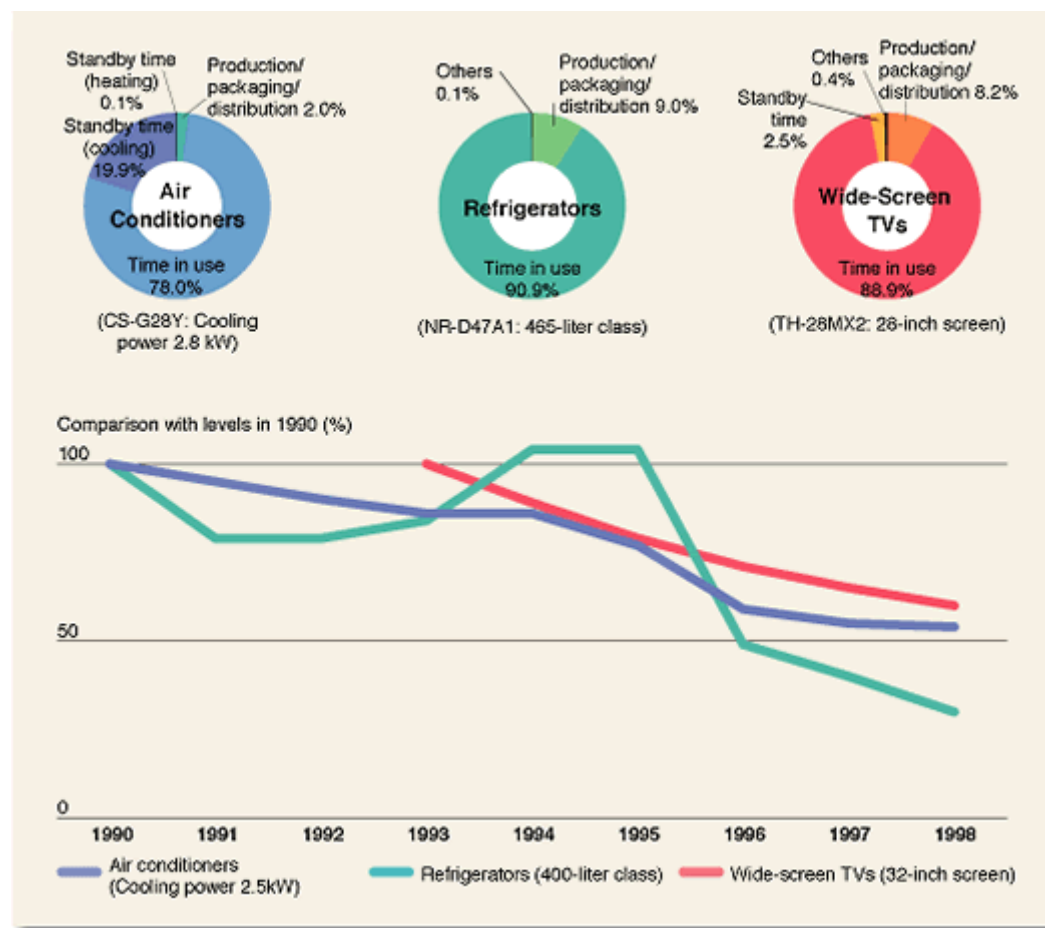
■ Products Envisioned for 2000

Category	Target
Energy conservation	<ul style="list-style-type: none"> ■ Achieve top industry levels ■ Improve energy efficiency in production operations more than 30% by 2000 (compared with 1995 levels)
Pollutant-free products	<ul style="list-style-type: none"> ■ Reduction of chemical substances -Lead solder -Halogen compounds
Recycle	<ul style="list-style-type: none"> ■ Achieve high recycling rate

■ Lowering the Energy Consumption of Products

Refrigerators, air conditioners, lighting equipment, and TVs collectively account for approximately 60% of the electricity consumed by the average household in Japan. Furthermore, according to LCAs these items consume approximately 90% of their energy when they are in use. Improvements in the energy efficiency of household appliances would contribute significantly to the reduction of CO2 emissions and, consequently, the prevention of global warming. Matsushita is conducting development in numerous areas to reduce the energy consumption of its mainstay products.

■ Energy Consumption of Mainstay Items According to LCA

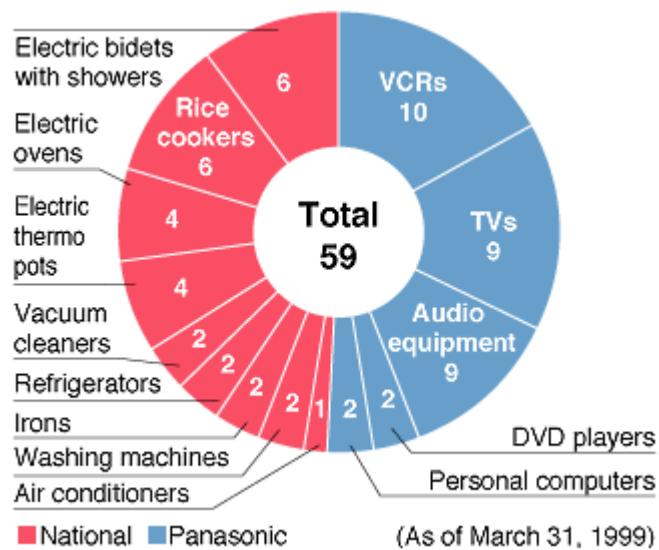


Lineup of Environmentally Conscious Products

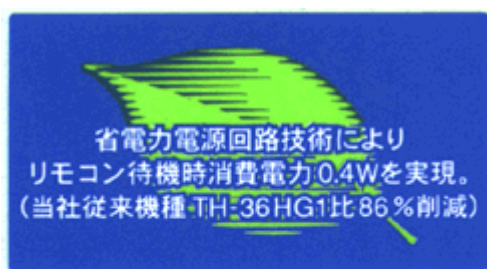
■ Environmental Characteristic Stickers

To give customers a better understanding of products' environmental qualities, in November 1997 Matsushita began attaching products with environmental characteristic stickers, which show quantitative details on such topics as energy consumption, recyclability, and the reduction of chemical substances. At the end of fiscal 1998, there were 59 products with environmental characteristic stickers. We aim to put stickers on a further 100 products in fiscal 1999.

■ Products with Environmental Characteristic Stickers



■ Environmental Characteristic Stickers



36-inch high-definition
TV: TH-FH10 "T (Tau)"



Centrifugal force washing
machine: NA-F800P

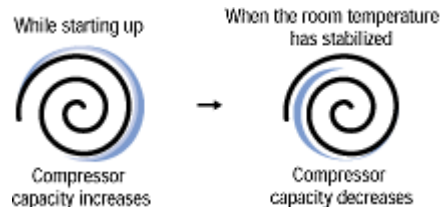
Lineup of Environmentally Conscious Products

■ Energy Conservation

■ Inverter Air Conditioners

Matsushita has developed a scroll compressor for air conditioners that operates at high revolution speed while starting up and slows once room temperature has stabilized. This automatic compressor capacity adjustment function reduces the energy consumption of the new CS-G22YH approximately 10% compared with the CS-G22M.

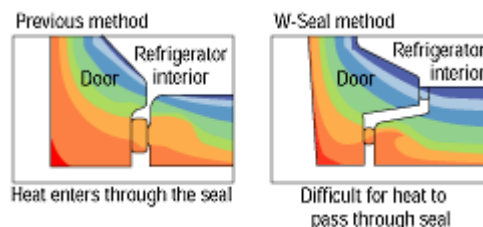
■ Scroll Compressor Action



■ Refrigerators

Matsushita has achieved a 40% reduction in refrigerator energy consumption for its NR-C37D1 through the application of its double-insulation W-Seal door sealing method. In addition, we have reduced materials approximately 10% through the development of Super Kelvin Integrated Technology.

■ Cross-Section Comparison of Refrigerator Door Seals

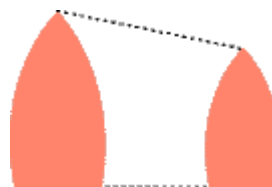


(Comparisons with the NR-C37T2)

■ Cordless Steam Irons

Matsushita has developed a three-layer heat storage system for its NI-CL10 steam iron, which has enabled it to reduce the size of the iron face to approximately 75% of that of its earlier NI-L80 model while retaining an equivalent amount of heat in the iron face.

■ Downsizing of the Amount of Radiated Heat

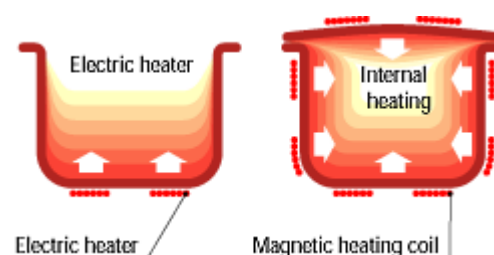


The size of the iron face made smaller by approximately 25%

■ Induction Heating (IH) Rice Cookers

Matsushita has fitted a magnetic heating coil that heats all of its SR-IHVG10 rice cooker to improve the efficiency of heat usage. The adoption of IH technology has facilitated an approximate 38% reduction in energy consumption during simmering compared with the SR-IHYC model. In addition, the size of the cooker body has been reduced by approximately half.

■ Comparison of Heating Systems



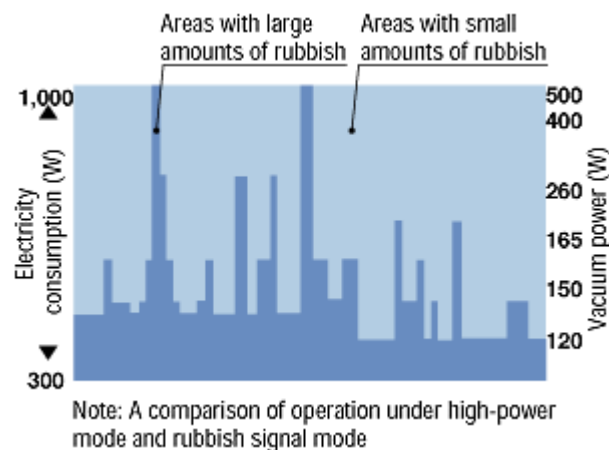
■ Electric Ovens

The NE-JI electric oven consumes 35% less energy than the NE-N15 model due to the adoption of an active clamp part resonance (ACPR) inverter as well as a compact, high-efficiency magnetron. In its latest model, Matsushita has realized zero electricity consumption during standby time and included a function that cuts all electric power when heating is completed. Matsushita has also reduced the amount of materials used approximately 7% by placing the control panel in the frame of the oven door.

■ Vacuum Cleaners

■ Electric Power Consumption

The average annual electricity consumption of the MC-S250XM vacuum cleaner, with infrared rubbish signal technology, is approximately 52% lower than that of the previous MC-L51P model. An infrared sensor allows the automatic control of vacuuming power by determining the type of floor surface and the shape of objects being vacuumed.

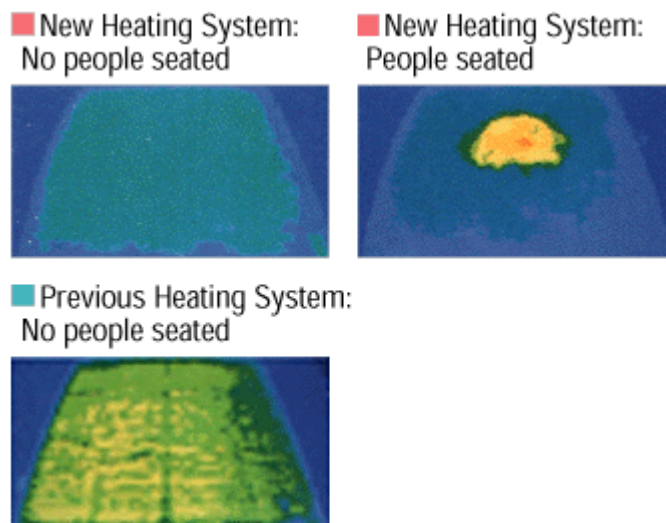


■ Electric Thermo Pots

Matsushita has developed a vacuum insulation material with insulation efficiency approximately six times greater than that of glass wool. This material is used in the NC-LS, which features preset timing and temperature functions, thus enabling it to achieve a 30% reduction in energy consumption compared with the NC-DA model.

■ Electric Carpets

The DC-2J1 electric carpet uses a system that minimizes air heat radiation loss by concentrating hot air only in those areas where people are seated. This system, in combination with an energy conservation switch and a room temperature sensor, enables the DC-2J1 to realize a 58% reduction in energy consumption compared with the DC-2KC model.

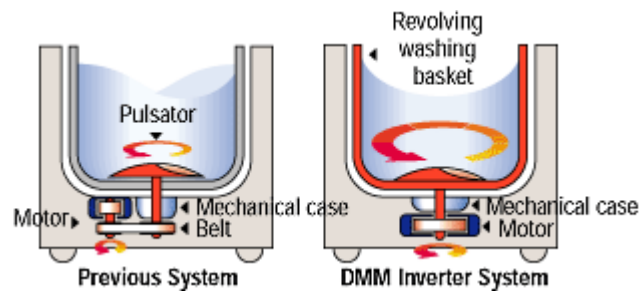


■ Centrifugal Force

Washing Machines

The NA-F800P centrifugal force washing machine uses a newly developed direct mechanical motor (DMM) inverter drive system to spin the washing basket. In addition to cutting energy consumption in approximately half compared with the NA-F70AP model, the new system reduces damage to clothing as well as uses less water and detergent.

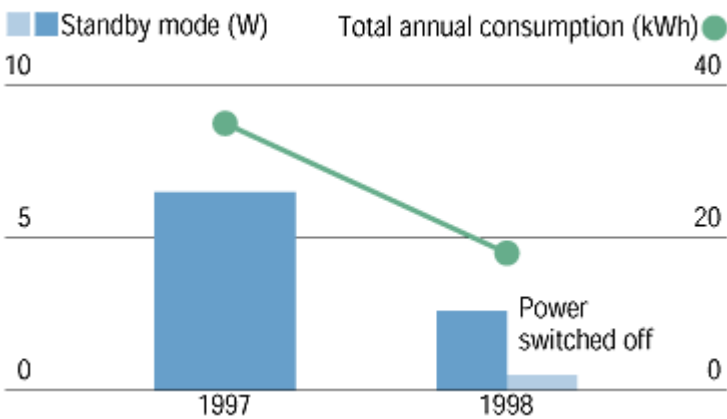
■ Cross-Section Comparison of Washing Machine Operation



■ Video Recorders

Matsushita has lowered the level of electricity consumed by the NV-H120 video recorder while in standby mode to 2W (0.4W when power—including the clock—is switched off) by installing a microprocessor-controlled power supply unit. This level of electricity consumed is 43% lower than the NV-H110 model. In addition, the use of high-efficiency power supply circuits has also reduced total annual unit electricity consumption 43%.

■ Video Recorder Electricity Consumption Trend



■ TVs

The electricity consumption of the TH-36FH10 while in remote control standby mode* has been reduced to approximately 0.4W through the adoption of a high-efficiency power supply transformer and a specialized microprocessor for the standby mode.

*Remote control standby mode refers to when remote control power is turned on.

■ DVD Players

■ DVD-A770

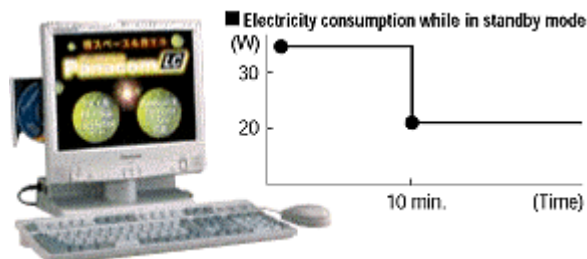
Matsushita has improved the efficiency of its DVD players by lowering the operating electric voltage in semiconductor circuits, reducing electric power loss, and adopting a specialized standby mode power supply. Electricity consumption of the DVD-A770 while in standby mode has been lowered to 1W, and its total annual electricity consumption has been reduced approximately 70% compared with the DVD-A450 model. Moreover, Matsushita is close to achieving zero electricity consumption when power is turned off.



■ LCD Combined PCs

■ Electricity consumption while in standby mode

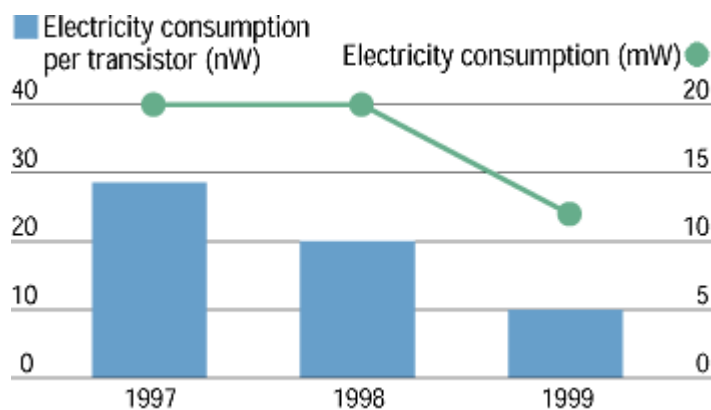
The CF-57X442EJ PC consumes approximately 40% less electricity while in standby mode compared with the CF-55M5M8AJ. Also, it features a one-touch command that automatically saves files in use on the hard drive and turns the computer off.



■ Microprocessor for MD Players

■ Low Electricity Consumption Microprocessor Circuit Design (MN101C Series)

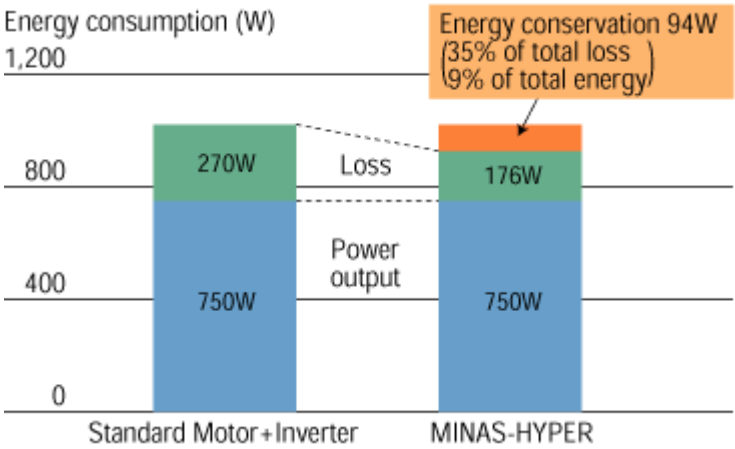
The development of new circuit designs for main electricity-consuming components has enabled Matsushita to reduce the electricity consumption of mini disk (MD) players approximately 30%. In addition, by reducing the operating voltage from 3.0V to 2.4V, we have increased the potential length of playback time.



■ **High-Efficiency Industrial Motors**

As motors are responsible for approximately 70% of a production facility's power consumption, it is important to increase motor efficiency to ensure lower levels of power usage. Newly developed high-efficiency MINAS-HYPER motors reduce electricity loss approximately 35% compared with tri-phase standard inverter motors.

■ 750W General-Use Series of Motors



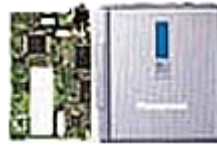
Lineup of Environmentally Conscious Products

■ Pollutant-Free Products (Reduction of Chemical Substances)

■ Lead-Free Soldering Portable MD Players

In October 1998, Matsushita became the first company in the world to release a mass-produced portable MD player that uses tin-, silver- and bismuth-based reflow-type lead-free solder, which have the same temperature conditions and agglutination qualities as lead solder. There are no additional costs involved in adopting the new solder, as it is compatible with existing mounting facilities.

Lead-Free Soldering Printed Circuit Boards



■ Halogen-Free Printed Circuit Boards

Matsushita is developing new paper phenol printed circuit boards, in which flame-retardant materials that contain halogen compounds (bromine-related) are replaced with environmentally conscious nitrogen compounds.

Previous printed circuit boards(up)
Halogen-free printed circuit boards(down)



■ Ozone Layer Protection

In 1995, Matsushita completed a conversion to hydrochlorofluorocarbon (HFC) refrigerants—which have an ozone-depleting coefficient of zero—from chlorofluorocarbon (CFC) refrigerants. Also, we became the first manufacturer to begin using a hydrocarbon insulating material (cyclopentene)—with an ozone-depleting coefficient of zero and global-warming coefficient of three^{*}—in refrigerators and completed the conversion in fiscal 1997. From fiscal 1997, Matsushita started to convert completely to HFC refrigerants by 2003 for air conditioners.

^{*}The global-warming coefficient for previous refrigerant CFC-11 is 3,800.

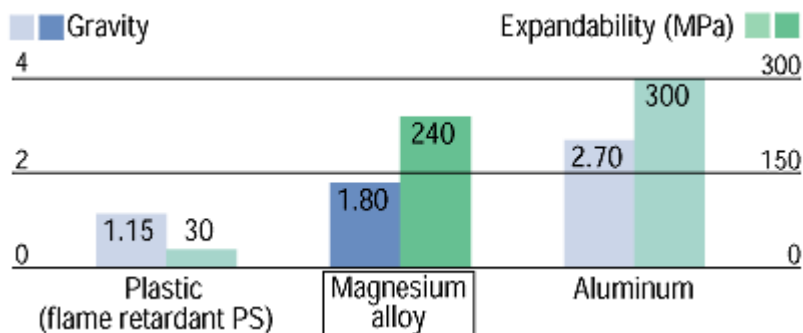
Lineup of Environmentally Conscious Products

Improving Recyclability

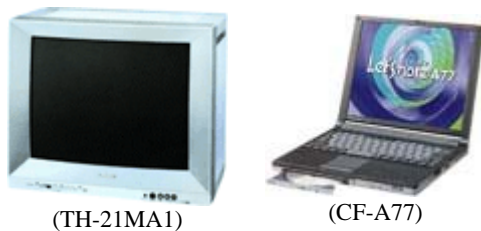
Magnesium Alloy Cabinets

An abundant resource, magnesium is attracting attention as an easy-to-recycle metal that is outstanding in terms of being lightweight and easy to process. Matsushita developed a large-scale molding technology (the thixo-molding method) for magnesium alloys in September 1998 and commercialized a 21-inch TV using the world's first magnesium alloy cabinet. All metal cabinets have high heat-releasing properties, which eliminates the need for heat-releasing holes and also prevents the intrusion of dust and water vapor.

Specific Gravity and Strength

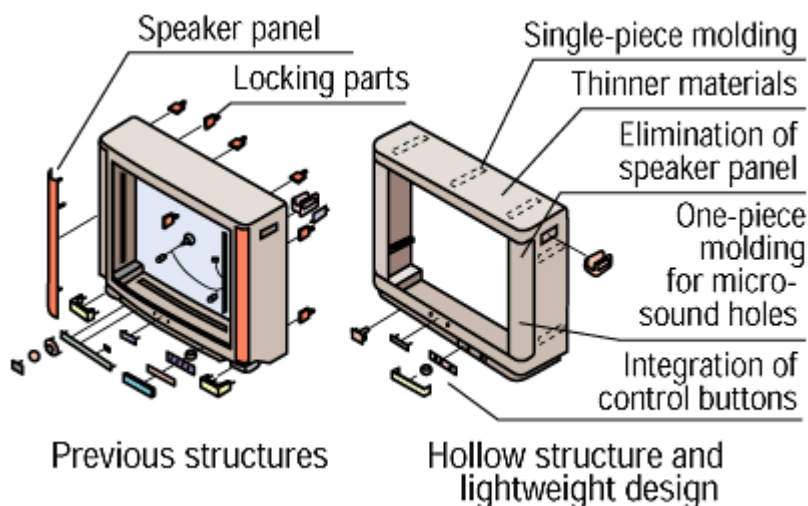


Examples of Products That Use Magnesium Alloy



Improving the Disassembly and Separating Properties of TVs

By using one-piece molding technologies for component integration in large TVs, Matsushita has reduced the number of TV cabinet components to one-fifth the number used in 1990. Also, we have reduced the number of grades of PS plastic for cabinets from 20 to 2. Through such measures, Matsushita has increased the ease of disassembly and separating of TV components.



Lineup of Environmentally Conscious Products

■ Packaging/Printing/Distribution

■ Packaging Materials

Matsushita is working to reduce its use of packaging materials, lower amounts of waste packaging, and reuse packaging materials based on the themes Elimination, Drastic Reduction, Reuse, and Reconversion to raw materials. Through such efforts, we reduced our use of polystyrene (PS) foam in fiscal 1998 approximately 35% from the amount used in fiscal 1993. Cardboard boxes have accounted for a growing percentage of all packaging materials used by Matsushita compared with fiscal 1993. This is attributable to the increased use of cardboard as a replacement for PS foam and higher production volumes.

■ Examples of Reductions and Reuse of Packaging

Elimination



Bag packaging for headphone stereo Impingement-protection-type packaging for portable MD player

Large Reductions



Transparent packaging for air conditioners

Reuse of Packaging

When packed

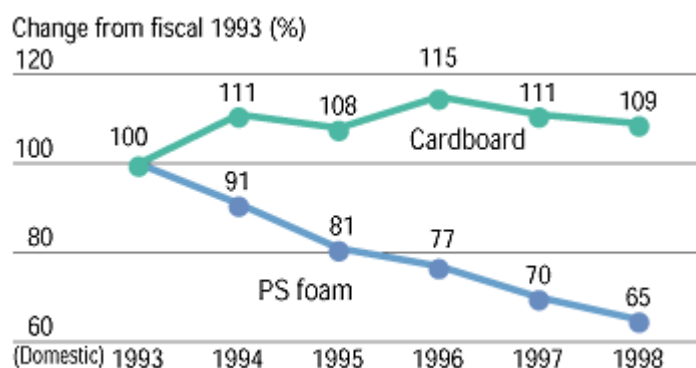


When recovered



Packaging that reuses parts

■ Volume of PS Foam and Cardboard Used



■ Soy Ink Printing

In October 1997, Matsushita began using soy ink that uses soybean oil as a principal ingredient for the printing of packaging, product explanations, and product catalogs for air conditioners and audio equipment. Compared with traditional inks that use petroleum oil-based solvents, soy inks offer several advantages, including a reduction in the amount of volatile organic compounds used, outstanding capabilities in removing india ink, and excellent biodegradability. Soy ink was also used for printing this Environmental Report.

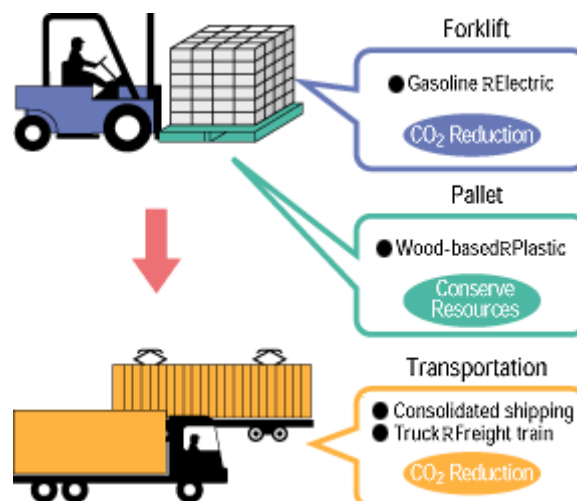
■ Packaging Printed with Soy Ink



■ Distribution

Matsushita is reducing its environmental burden by introducing electric-powered forklifts and making increased use of plastic pallets at its warehouses. In line with efforts to conserve resources and energy in its shipping activities, we are promoting consolidated shipping for land transportation among its principal bases as well as a modal shift, which involves combining truck and rail transportation.

■ Examples of the Group's approach to distribution



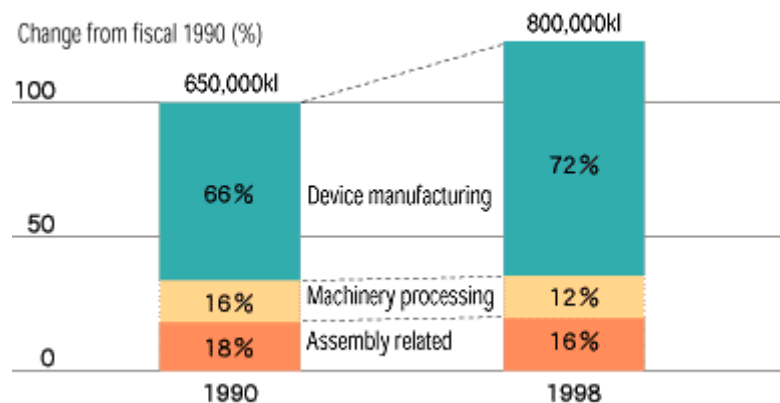
Energy Conservation at Factories

In 1993, Matsushita formulated the Voluntary Plan for the Environment, under which we have worked to conserve energy at its factories to restrict CO₂ emissions, thus helping prevent global warming. The results of these efforts in fiscal 1998 are shown below. During the six-year period from fiscal 1993 to the end of fiscal 1998, Matsushita invested more than ¥40 billion in energy conservation measures. Despite such investments, we fell short of our conservation targets owing primarily to such factors as growth in its device business, including semiconductors and LCDs, which consume large amounts of energy, and slower growth in sales due to the downtrend in product prices.

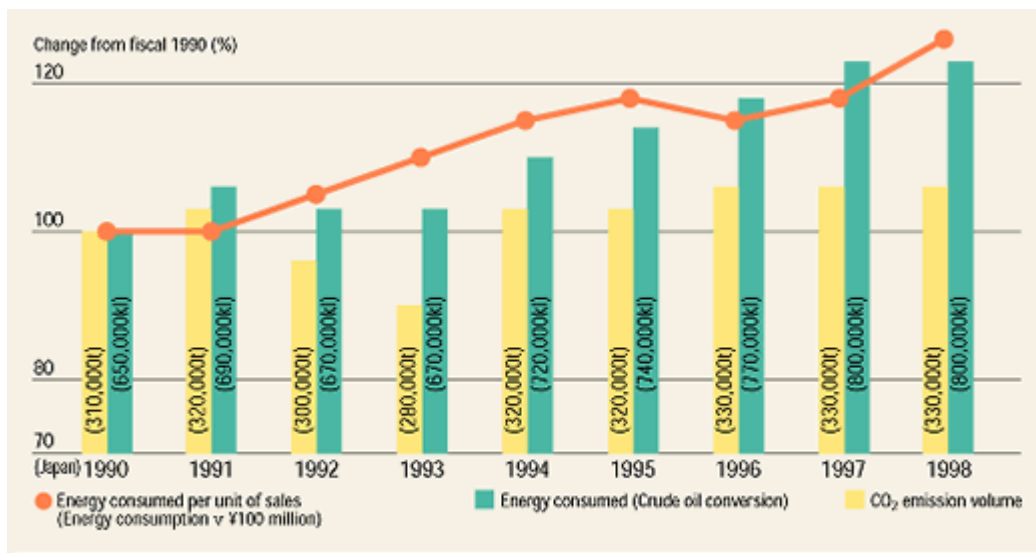
Target	Result in fiscal 1998
Restrict CO ₂ emission volumes to the fiscal 1990 level by fiscal 1998 (Japan)	7% increase (compared with fiscal 1990)
Reduce the volume of energy consumed per unit of sales* 25% from the fiscal 1990 level by 2000 (Japan)	26% increase (compared with fiscal 1990)

*Amount of energy usage÷sales=volume of energy consumed per unit of sales

Breakdown of Energy Use by Type of Facility



Volume of Energy Consumption and CO₂ Emissions from Factories, and Volume of Energy Consumed per Unit of Sales



Notes: Based on calculations by the Matsushita Electric Group.

1. CO₂ emission due to electric power consumption is calculated based on the actual unit output figures (kgc/kWh) for CO₂ for individual power companies in individual fiscal years (totals for all power sources from thermal to nuclear).
 2. Calculations of the amount of CO₂ emission reductions due to the use of cogeneration systems are performed to make a comparison with the thermal power portion of purchased electric power.
Crude oil conversion and CO₂ emission values may be calculated at the points of power generation or the
 3. points of power consumption. Because of the source of available data, values at the point of power generation were used.
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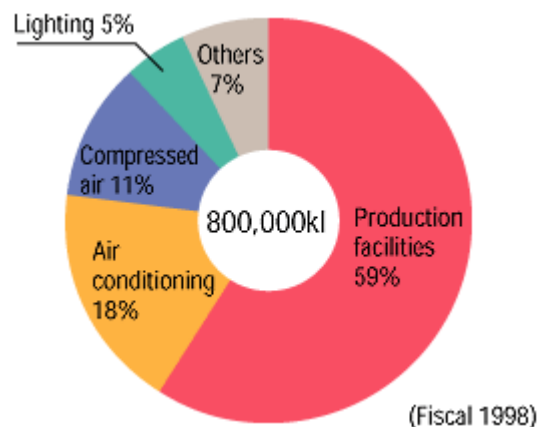
Energy Conservation at Factories

■ Rebuilding Energy Management Systems

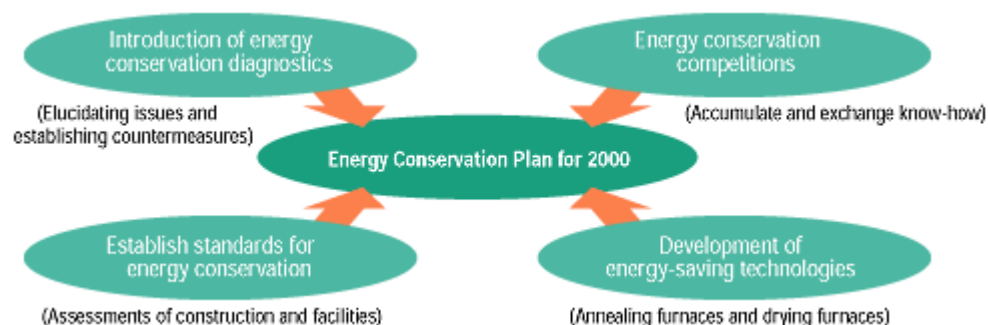
Reflecting upon the reasons it was unable to attain its target for CO₂ emission reductions under its Voluntary Plan for the Environment, Matsushita has established self-imposed targets that take into consideration the actual circumstances surrounding each business. We have also systematized its traditional approach to management systems and commenced comprehensive testing of these systems. In fiscal 1998, Matsushita established a new CO₂ emission target (a breakdown from the COP3* target for industry) and formulated its Energy Conservation Plan for 2000 (refer to the exhibit at lower left) while adopting an approach that focuses closely on investments at the planning stages and the results of efforts to conserve energy and reduce the volume of CO₂ emissions. To ensure smooth implementation of this system, Matsushita is establishing an energy management system, appointing a person in charge of this system, and setting up an implementation organization that will form the core of the energy management system while progressing in four key action programs. By taking such approaches, in fiscal 1998 we were able to restrict the volume of CO₂ emissions to the same level as in the previous fiscal year.

*COP3: Third Conference of the Parties to the U.N. Framework Convention on Climate Change

■ Consumption of Energy by Type of Use



■ Energy Conservation Plan for 2000



Energy Conservation at Factories

■ Energy Conservation Competitions

Energy conservation competitions are aimed at further promoting conservation by exchanging and sharing know-how from the outstanding examples of conservation at factories throughout Matsushita. In April of fiscal 1998, 487 energy-conservation-related themes from 117 business units were registered. Reports on the results of 355 of these themes after one year of implementation have been submitted. The implementation of these themes resulted in energy savings of 24,000kl on a crude oil conversion basis, which translates into an approximate 3% reduction in energy conservation for Matsushita in Japan. All examples of the energy-conserving activities were compiled into a publication and distributed throughout Matsushita. Concurrently, a presentation of the outstanding examples was made and broadcast internally via an in-house satellite broadcasting system as part of Matsushita's efforts to achieve higher levels of energy conservation.

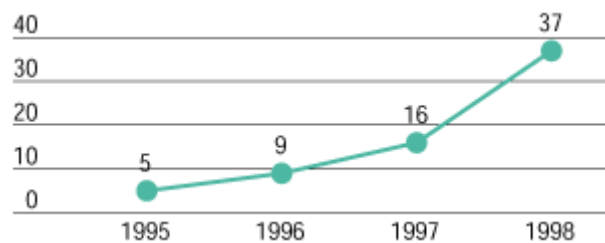
■ Energy Conservation Diagnostics

Matsushita is working to implement energy conservation diagnostics at its factories and eliminate energy losses. As of the end of fiscal 1998, conservation diagnostics had been completed at 32% of factories in Japan.

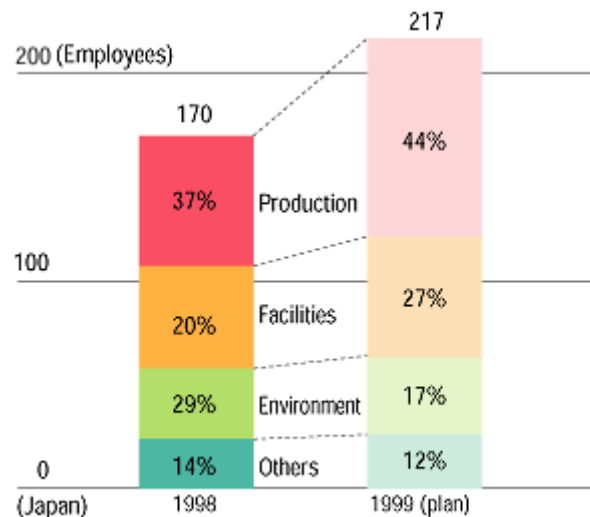
■ Education on Energy Conservation Diagnostics

To cultivate energy managers who are capable of carrying out energy conservation diagnostics, Matsushita is progressing with energy conservation education with the cooperation of various specialist organizations.

■ Factories That Have Completed Energy Conservation Diagnostics in Japan (Total)



■ Number of Staff Receiving Diagnostics Education by Job Category



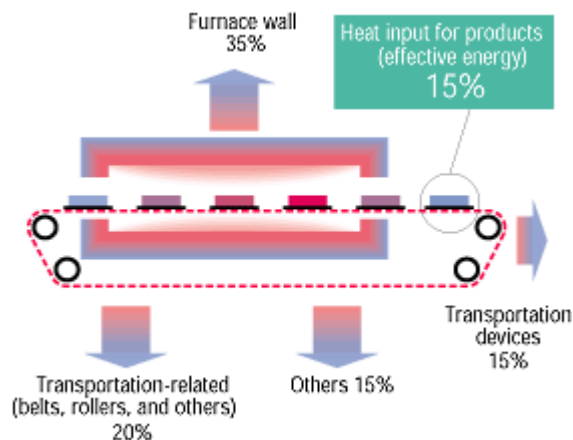
Note: Figures in the bar graph show composition of total.

Energy Conservation at Factories

■ Energy-Conserving Industrial Furnaces

Plant and equipment consume 59% of all energy used by Matsushita. Of this 59%, 40% is accounted for by industrial furnaces in device business factories. In response, the Energy-Saving Furnace Working Group has been established to promote the development of energy-conserving industrial furnaces. The technological achievements of these efforts will be used in furnaces used to manufacture new products beginning in fiscal 1999.

■ An Example of Heat Loss in a Regular Industrial Furnace

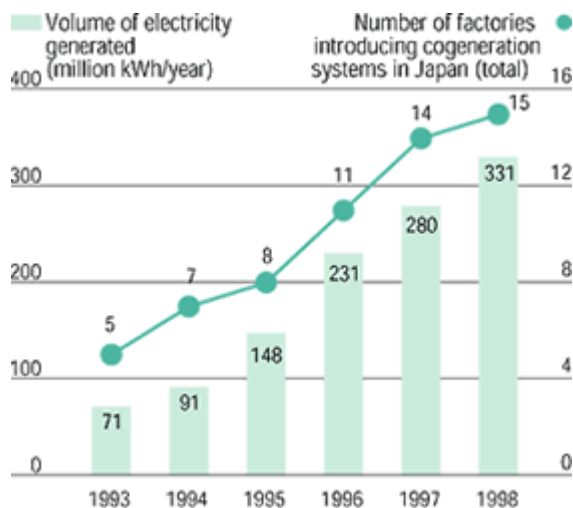


■ Cogeneration Systems

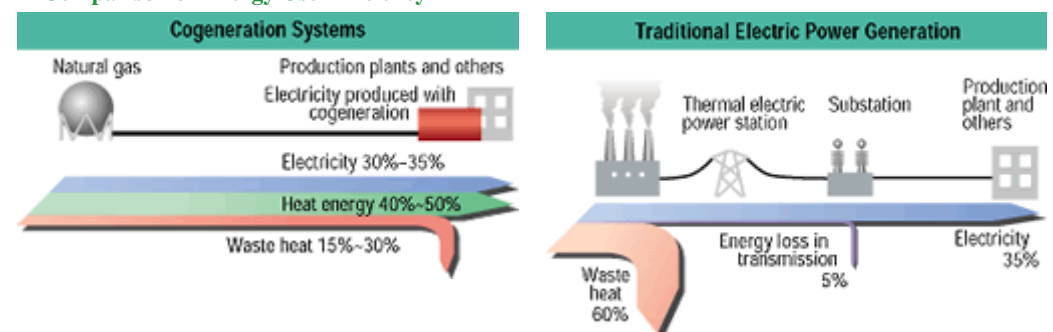
Mainly in its device business, Matsushita is introducing cogeneration systems* that use waste heat. The volume of energy generated by cogeneration systems has expanded annually and in fiscal 1998 produced approximately 13% of all electricity consumed by Matsushita in Japan.

*A system for the on-site generation of electricity that makes effective use of heat dispelled in power generation

■ Introduction of Cogeneration Systems



■ Comparison of Energy Use Efficiency



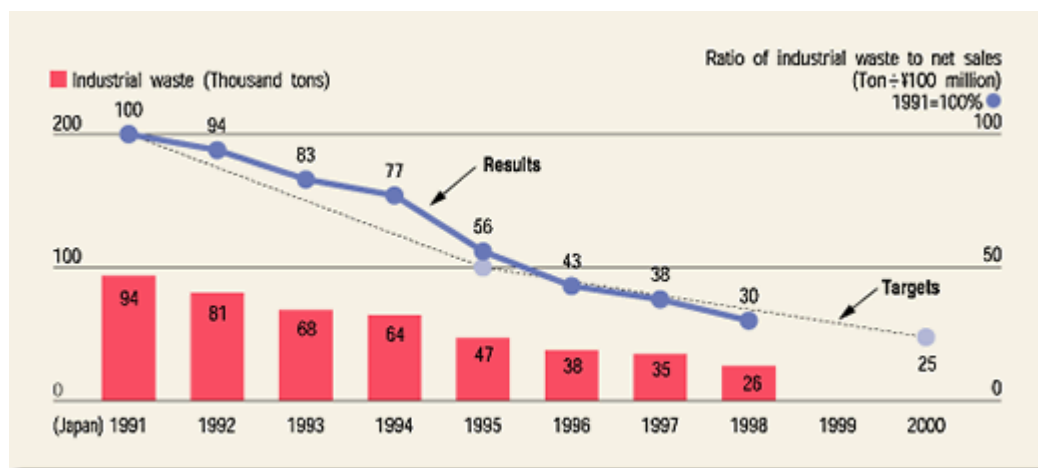
Reducing Industrial Waste

Matsushita is making Groupwide efforts to reduce industrial waste and to recycle it into reusable resources. We regard industrial waste not as rubbish to be discarded but rather as a precious resource for recycling and reuse.

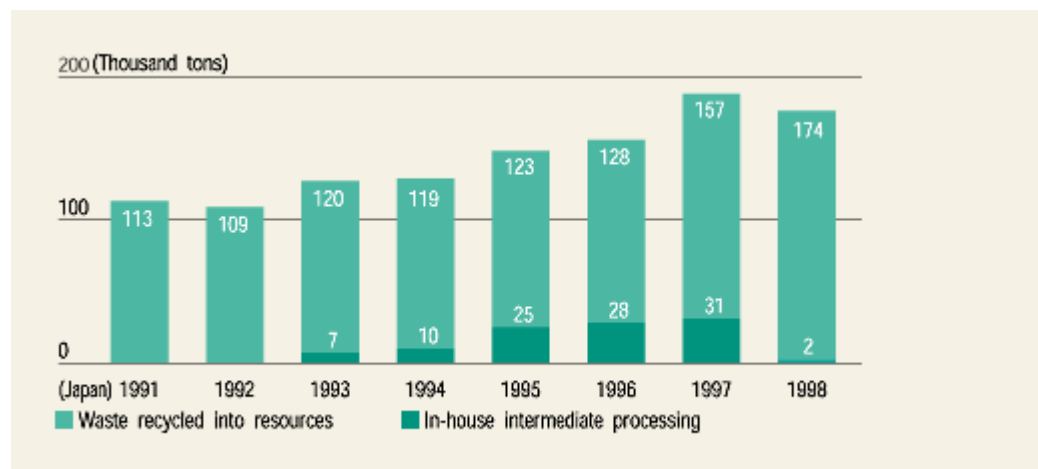
■ The Status of Industrial Waste Reductions

With regard to waste reduction targets, Matsushita worked to reduce the ratio of industrial waste to net sales 50% by fiscal 1995 and aims to reduce this ratio 75% by fiscal 2000 compared with fiscal 1991 levels. We attained a ratio of 70% in fiscal 1998, surpassing our target of 65%, thanks to exhaustive efforts to convert waste into reusable resources. These efforts included converting waste plastic into solid fuel and sludge into raw materials for cement; separating and refining waste oil, acids, and alkalis; and separating and recycling various types of papers. Also, in 1998 the amount of in-house intermediate processing of industrial waste declined in accordance with a Group policy formulated in February 1998 to eliminate all internal incineration. In line with this policy, most Group factories ceased operations of internal incinerators and pressed ahead with thorough separation and recycling.

■ Volume of Industrial Waste per Net Sales



■ Volume of Waste Recycled into Resources and In-House Intermediate Processing



Reducing Industrial Waste

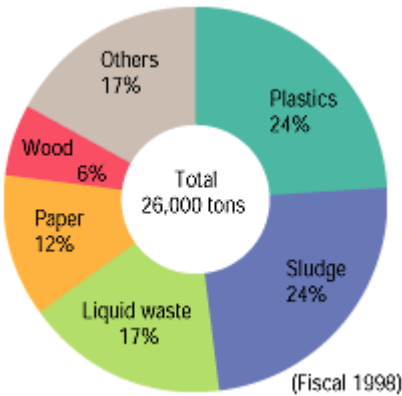
■ Breakdown of Industrial Waste

A breakdown of industrial waste in fiscal 1998 is as follows. Waste plastics consisted of such items as component and product waste, molded waste, and foaming styrol. Sludge included inorganic and organic sludge produced from such processes as wastewater treatment. Liquid waste included waste oils, solvents, acids, and alkalis, while wastepaper included business-use paper, newspapers and magazines, and cardboard boxes.

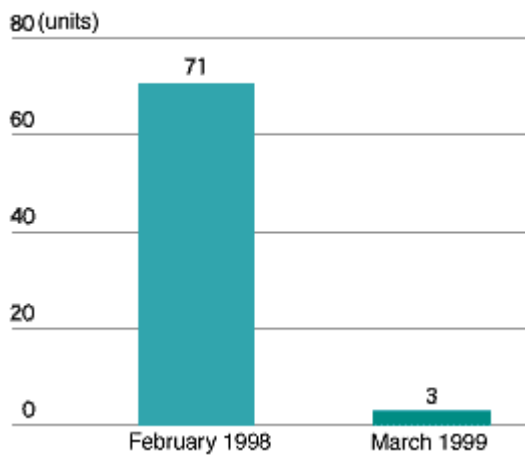
■ Ceasing Incineration

Recent years have witnessed mounting fears that incinerators are a possible source of dioxin pollution. In February 1998, Matsushita formulated a policy for ceasing the operation of all incinerators throughout Matsushita as it proceeds with efforts to achieve zero emissions through separation and recycling. As of March 1999, the operation of 68 of Matsushita's 71 incinerators in Japan had ceased.

■ Breakdown of Industrial Waste



■ Number of Matsushita Electric Group Incinerators in Japan

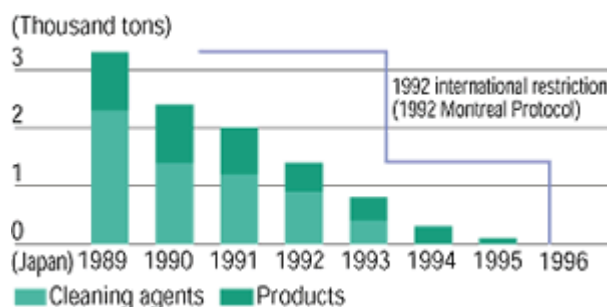


Preserving Air and Water Quality

■ Ozone Layer Protection

By developing technologies such as printed circuit boards that do not require washing and switching to water-based cleaning agents, Matsushita completely eliminated the use of CFCs and 1,1,1-trichloroethane as cleaning agents by the end of 1993. Also, at the end of 1995 we discontinued the use of CFCs in products. In addition, when remodeling office facilities, Matsushita is introducing non-CFC heating and cooling systems as well as fire extinguishers that use nonhalogen agents.

■ Volume of Specified CFCs Used



■ Self-Management for Hazardous Air Pollutants

Based on the Self-Imposed Control Plan for Hazardous Air Pollutants formulated by the electric machinery and electronics industries, Matsushita is implementing surveys to ascertain the actual use and emissions of toxic substances.

■ Volume of Hazardous Air Pollutants (Fiscal 1998/Japan/tons)

Substance	Volume
Acrylnitrile	0.000
Acetic aldehyde	0.039
Vinyl chloride monomer	0.000
Chloroform	0.004
1,2-dichloroethane *	18.788
Dichloromethane *	48.312
Tetrachloroethylene	0.000
Trichlorethylene	0.000
1,3-budazene	0.000
Benzine	0.009
Formaldehyde	0.340
Disulfide nickel	0.000
Acid nickel	0.002

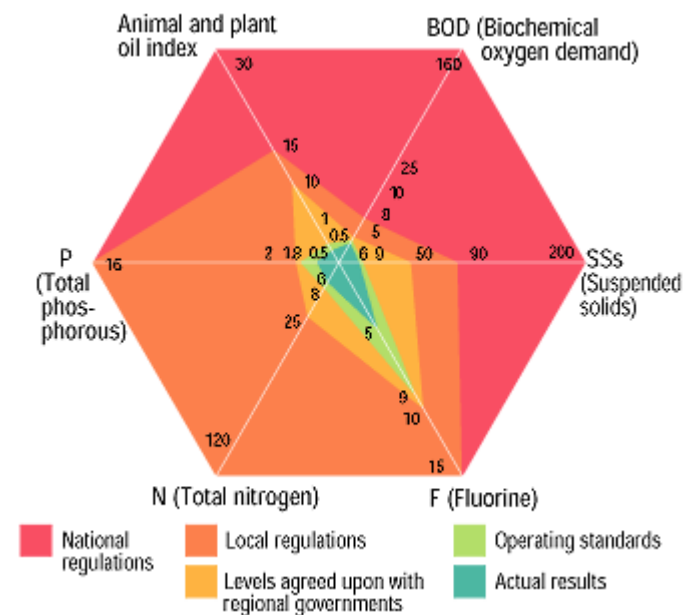
*:Used as a paint solvent and no longer used as a cleaning agent

Preserving Air and Water Quality

■ Preservation of Water Quality

Matsushita is implementing the Matsushita Product Assessment for wastewater at its factories, which covers areas ranging from "end-of-pipe management" to upstream management. We have also established self-management standards that are even stricter than national and local laws and ordinances on wastewater.

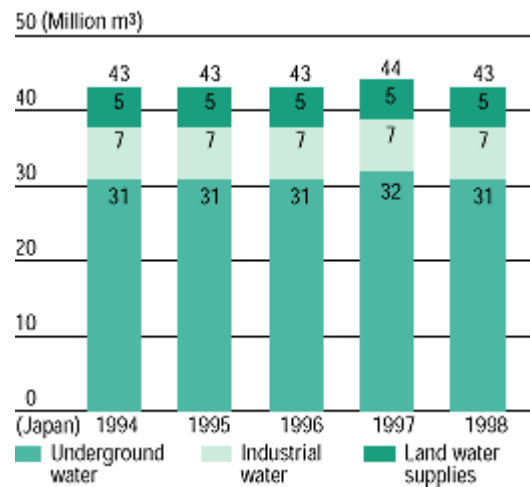
■ Example of Water Quality Management Standards and Actual Results(ppm)



■ Volume of Water Usage

Matsushita is making efforts to prevent an increase in water usage at its business units by reusing wastewater from the cleansing process and installing water-purification units. We also carry out water conservation activities in our offices, which include recycling wastewater and rainwater for use in flushing toilets and watering plants.

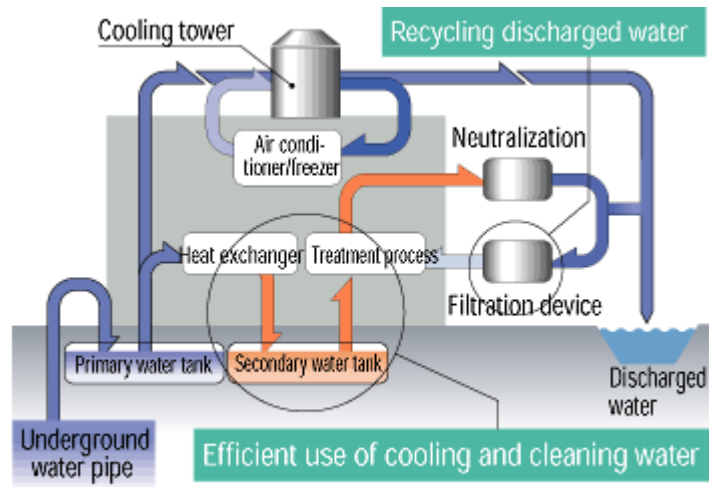
■ Volume of Water Usage



■ Efficient Use of Water

The Capacitor Division of Matsushita Electronic Components Co., Ltd., which consumes approximately one-third of all water supplied by Uji City, Kyoto, is effectively restricting daily water usage to 7,700 cubic meters by recycling cooling water and wastewater an average of 5.5 times.

■ Example of Effective Wastewater Recycling

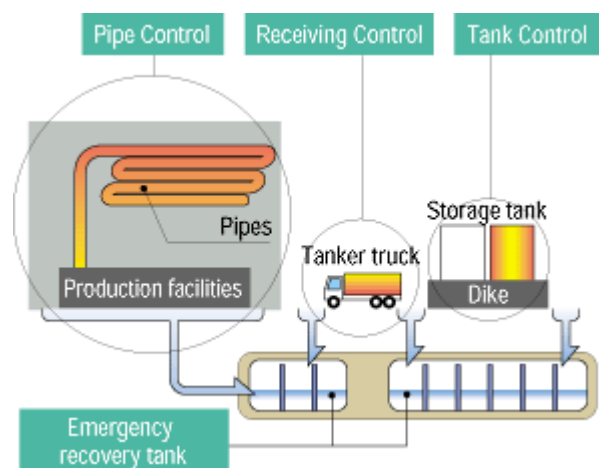


(Capacitor Division, Matsushita Electronic Components)

■ Preventing the Outflow of Chemicals

Matsushita has installed emergency underground recovery tanks to prevent the outflow of chemicals into the environment due to such occurrences as earthquakes or accidents. Also, to make certain that liquid waste does not pollute the soil or ground water, the underground storage tanks at factories feature double-wall construction. Furthermore, sufficient space for inspections has been provided, and leak-detection sensors have been installed to enable both visual and automated inspections.

■ Structure of the Emergency Underground Recovery Tanks



Comprehensive Management of Chemical Substances

The adverse effects of a number of chemical substances on humans, the ecosystem, and the environment have become apparent. In 1996, Organization for Economic Cooperation and Development (OECD) countries presented the Management Council Recommendation, which proposed the introduction of the Pollutant Release and Transfer Register (PRTR). Along with growing public awareness and a trend toward the greater disclosure of information, which includes the establishment of frameworks for individual restrictions on environmental hormones (endocrine disrupters) and dioxins, the management of chemical substances is becoming a pillar of the Group's environmental risk management.

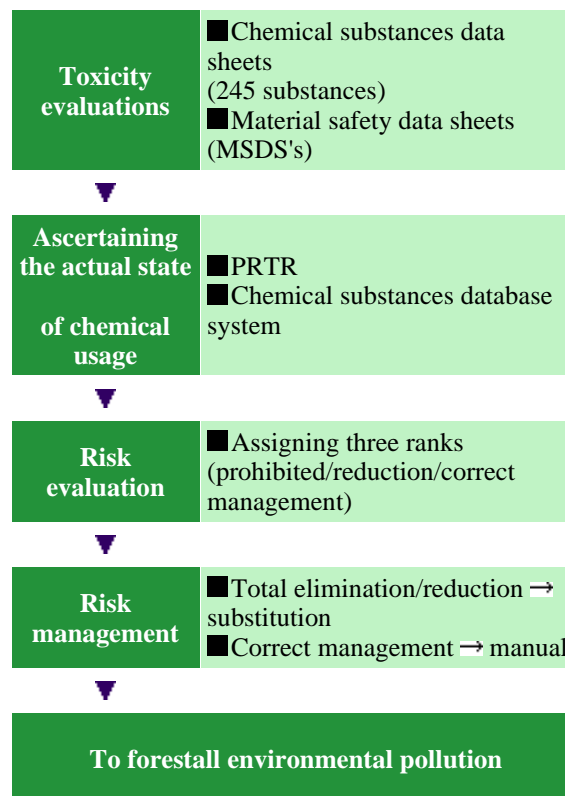
■ Matsushita Electric Group Environmental Risk Management

Matsushita has traditionally carried out its chemical substance management based on efforts to preserve the environment, strictly adhering to laws, carrying out proper management, and eliminating or reducing the use and emission of various chemicals. Specifically, this approach is centered on the comprehensive management of chemical substances (establishing a PRTR operational system and developing technologies for substituting chemical substances), responding to environmental pollution (preparing manuals, carrying out risk evaluation, developing restoration technologies, and promoting risk communication), as well as rebuilding and operating performance evaluation systems for environmental management systems.

■ Overall Management Structure

Matsushita is carrying out risk evaluation based on an evaluation of the toxicity of chemical substances and ascertaining the actual state of use of these chemical substances. We are working to eliminate and reduce the use of such chemicals as well as stressing their correct management.

■ Comprehensive Management System for Chemicals



A total of 245 substance categories (551 substances) are subject to restrictions. We are preparing a chemical substances database system that integrates such information as the characteristics of these chemicals as well as related legal restrictions and are sharing this information via our intranet.

■ **Chemical Substances**(Excluding redundant substances)

Chemical substances	Number of substances
■ Substances that are subject to PRTR of five electric machinery and electronics industry groups	179
■ Substances designated by Matsushita Product Assessment (including products)	41
■ Substances designated by Matsushita Product Assessment (Production processes)	37
■ Chemical endocrine disruptors	67
■ Substances that will become Matsushita Electric Group environmentally conscious products by 2000	3

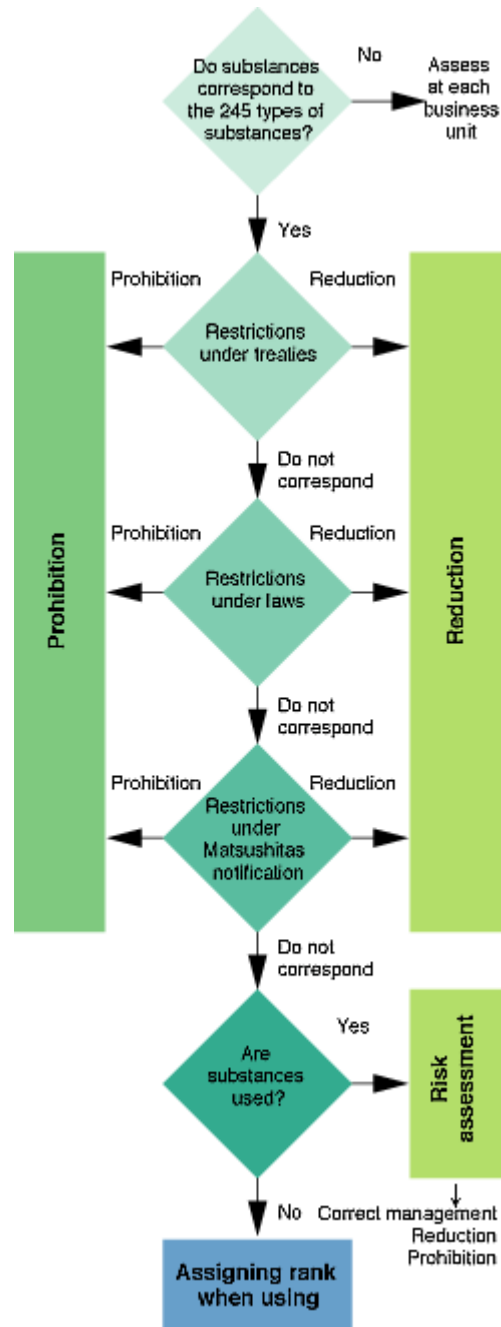
Prohibited	27
Reductions	41
Correct management	48

Comprehensive Management of Chemical Substances

■ Chemical Substance Management Rank Guidelines

Based on the results of risk assessments for 245 types of substances, Matsushita has published the Chemical Substance Management Rank Guidelines, which assigns ranks for prohibition, reduction, and proper management. In addition, we are asking our materials and procurement sources to adhere to these guidelines, with efforts centered on the Green Procurement Standards, which were published in March 1999 for Matsushita's 3,600 principal procurement suppliers.

■ Basic Rationale behind Ranking System

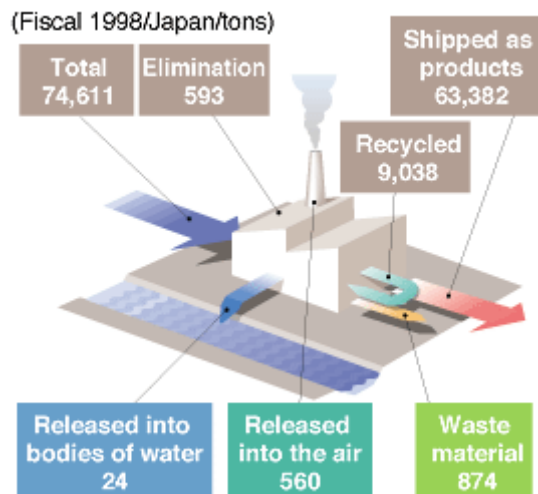


Comprehensive Management of Chemical Substances

■ Ascertaining Material Balance

Matsushita is carrying out detailed verification of the actual state of usage-which covers 1kg used for one year as well as all additives-for the 245 types of substances.

■ Material Balance for Types of Chemical Products Used



Comprehensive Management of Chemical Substances

PRTR Survey in Japan (Fiscal 1998/ton)					
Material	Total	Chemical emissions and movements			
		Released into bodies of water	Released into the air	Waste material	Subtotal
Toluene	1,860.860	0.542	215.514	24.916	240.972
Mangan dioxide (IV)	8,763.661	0.322	0.005	188.733	189.059
Xylene	277.227	0.000	125.653	30.871	156.524
Ethanolamine	326.069	0.554	0.150	145.660	146.365
Zinc Sulfide	208.261	2.220	0.000	72.470	74.690
Polyvinyl Chloride	921.967	0.000	0.000	67.348	67.348
Aluminium Sulfate	736.984	0.000	0.000	51.887	51.887
Dichloromethane	63.720	0.000	48.312	0.000	48.312
4,4-diphenylmethane diisocyanate	2,491.018	0.000	40.356	0.178	40.534
Zinc oxide	690.392	0.139	0.154	32.024	32.317
Nickel hydroxide (II)	4,004.084	0.017	0.148	28.578	28.743
Cadmium	2,389.429	0.006	0.023	28.588	28.617
Boric acid	130.596	5.369	5.574	15.941	26.884
Lead solder	872.881	0.040	1.646	18.020	19.707
1,2-dichloroethane	24.780	0.000	18.788	0.000	18.788
Halogen flame retardants	244.742	0.000	0.000	18.671	18.671
Chlorodifluoromethane	1,459.630	0.000	17.214	0.397	17.611
Hydrogen chloride	19.251	5.420	8.475	2.954	16.849
Styrene: Styrene monomer	83.209	0.000	14.211	0.245	14.456
Anhydrous cupric	463.482	0.000	0.000	14.130	14.130
Tetrafluoromethane	15.795	0.000	9.661	2.538	12.199
Antimonial trioxide	187.709	0.008	0.063	11.077	11.148
Zirconia (IV)	28.040	0.000	0.000	10.710	10.710
Silicon carbide	10.565	0.000	0.000	10.565	10.565
Barium sulfate	152.646	0.000	0.000	9.968	9.968
1,1,1,2-tetrafluoroethane	136.345	0.000	9.601	0.003	9.603
Chlorine	9.119	5.299	1.349	1.858	8.506
Lead	41,877.009	0.014	0.061	7.788	7.862
1,1,dychloro-1-fluoroethane	181.219	0.000	6.695	0.989	7.684
Sodium cyanide	8.297	0.001	0.350	6.742	7.093
Other(127 substances)	5,972.290	4.390	36.105	70.573	111.069
Total	74,611.277	24.341	560.108	874.422	1,458.871

Material	Elimination	Recycled	Shipped as products
Toluene	422.005	1,190.813	6.841
Mangan dioxide (IV)	0.000	0.685	8,481.917
Xylene	53.825	63.874	3.004
Ethanolamine	0.367	179.337	0.000
Zinc Sulfide	0.000	81.183	52.388
Polyvinyl Chloride	17.697	3.176	833.746
Aluminium Sulfate	0.000	685.097	0.000
Dichloromethane	0.000	15.408	0.000
4,4-diphenylmethane diisocyanate	2.202	5.210	2,443.072
Zinc oxide	0.389	92.634	564.052
Nickel hydroxide (II)	0.000	817.239	3,158.102
Cadmium	0.000	297.938	2,062.874
Boric acid	1.225	55.910	46.577
Lead solder	8.520	171.199	673.455
1,2-dichloroethane	0.000	5.992	0.000
Halogen flame retardants	0.000	23.452	202.619
Chlorodifluoromethane	0.645	1.200	1,440.174
Hydrogen chloride	2.584	0.000	0.019
Styrene: Styrene monomer	0.000	0.000	68.754
Anhydrous cupric	0.000	449.352	0.000
Tetrafluoromethane	2.553	0.000	1.043
Antimonial trioxide	0.000	29.519	147.042
Zirconia (IV)	0.000	4.978	12.352
Silicon carbide	0.000	0.000	0.000
Barium sulfate	0.000	1.221	141.457
1,1,1,2-tetrafluoroethane	0.000	0.000	126.742
Chlorine	0.583	0.000	0.031
Lead	0.000	2,107.659	39,761.488
1,1,dychloro-1-fluoroethane	0.000	0.000	173.535
Sodium cyanide	1.204	0.000	0.000
Other (127 substances)	79.532	2,755.301	2,980.290
Total	593.331	9,038.377	63,381.574

Notes: 1. Volume consumed includes the number of PRTR substances that became other substances through reaction and the number shipped together with other products. 2. Volume removed shows the amounts of PRTR substances that changed to other substances through neutralization, disintegration, or dispensation.

Comprehensive Management of Chemical Substances

■ Comprehensive Management of Chemical Substances in the Future

Matsushita's fundamental thinking is focused on preventing environmental pollution by carrying out comprehensive management of chemical substances, developing environmentally conscious products, and lowering environmental risk. Matsushita's principal approaches include establishing a Matsushita version of the PRTR; developing technologies for eliminating and reducing the use of various chemicals; preparing manuals for correct management; making responses related to risk communication; and progressing with globalization. In the future, we plan to establish a database linked to our green procurement system and is capable of verifying data on all chemical substances, including those contained in purchased components. By implementing the comprehensive management of chemical substances, we are aiming to reduce the volume of chemicals released and transferred, lower the amounts of chemicals used, reduce losses, develop products with consideration of the environment, and establish a low-cost recycling system for end-of-life products. Through these efforts, Matsushita intends to create a system that will yield economic benefits.

Soil and Ground Water Contamination

Matsushita embarked on efforts to prevent contamination of ground water and soil in the 1980s. In 1991, Matsushita prepared its Manual for Preventing Contamination of Ground Water and Manual for Preventing Water Pollution as part of extensive efforts to prevent pollution. In 1993, Matsushita began imposing a total Groupwide ban on the use of volatile organic compounds for use as cleaning solvents and eliminated their use totally by 1995.

Under present law in Japan, there is no obligation to submit pollution reports to local governments. However, at factories where pollution exceeds environmental standards, we have voluntarily reported the situation to the relevant government agencies while receiving instructions from these government agencies and establishing countermeasures.

In June 1998, it was determined that the pollution of underground water caused by volatile-based organic compounds exceeded environmental standards at Matsushita's factories. These reports were made public by the Osaka government and other agencies that received the report. In response, we established the Team for Accelerated Implementation of Underground Water Pollution Countermeasures at our head office. Concurrently, we established similar teams at various factories and reinvestigated as we strove to accelerate the implementation of countermeasures. Matsushita is carrying out pollution surveys at its overseas factories.

	Trends in Laws (Japan)		Response of the Matsushita Electric Group	
1989	October	Revision of the Water Quality Pollution Prevention Law ■Regulations on the permeation of specified ground water ■Ongoing government surveillance of ground water	October	Thorough Groupwide measures to prevent ground water permeation
1991			September	Prepared Manual for Preventing Contamination of Ground Water and distributed this manual throughout Matsushita
			December	Prepared Manual for Preventing Water Pollution and distributed this manual throughout Matsushita
1992			February	Prepared Manual for Surveys and Countermeasures for Ground Water Pollution Caused by Volatile Organic Compounds and distributed this manual throughout Matsushita
1993	March	Revision of water quality environment standards (Includes presently restricted volatile organic compounds)	March	Groupwide advisory for the total elimination of the use of volatile organic compounds by the end of 1995
1994	November	Formulation of Provisional Policies on Surveys and Countermeasures for Soil and Ground Water Related to Organic Chlorine Compounds		

1995			February	Prepared Manual for Surveys and Countermeasures for Soil and Ground Water Pollution Caused by Volatile Organic Compounds and distributed this manual throughout Matsushita
1997	March	Establishment of underground water environment standards		
	April	Implementation of Revision to Water Quality Pollution Prevention Law ■ Ordinance requiring the installation of septic tanks by polluters		
1998			June	The Team for the Accelerated Implementation of Ground Water Pollution Countermeasures established
			August	Amendment to Manual for Surveys and Countermeasures for Soil and Ground Water Pollution Caused by Volatile Organic Compounds
1999			April	Environment Risk Management Committee formed
			April	Environment Auditing Office established

Soil and Ground Water Contamination

■ Responses at Business Units Where Environment Standards Are Exceeded

Following the previously mentioned announcement in June 1998, Matsushita implemented extensive environmental surveys at all 112 of its facilities in Japan. At plants where pollution levels were found to exceed standards, we immediately reported on the situation to the relevant government agencies and carried out purification and restoration measures directed by these government agencies. At the time we used volatile organic compounds, we were unaware that these compounds were pollutants, and there were no special instructions for handling these compounds. Thus, it is believed that insufficient consideration was given to these chemical compounds.

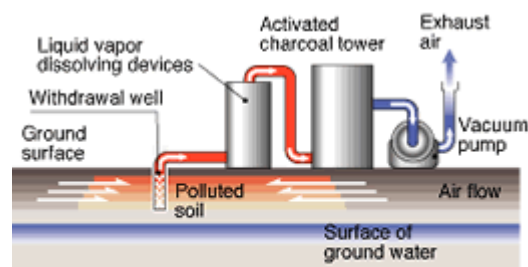
Soil and Ground Water Contamination

■ Restoration Activities

In many cases, volatile organic compounds that have penetrated the ground accumulate above the clay layer and are not being dissolved by water nor do they evaporate. This makes a long-term soil restoration process necessary. Several restoration methods are believed to be effective. These include the vacuum gas extraction method, the underground pumping method, the raw limestone mixing method, and the soil excavation method. Using its leading-edge technologies, the Group will progress with rapid restoration of soil quality and will continue to monitor ground water after restoration.

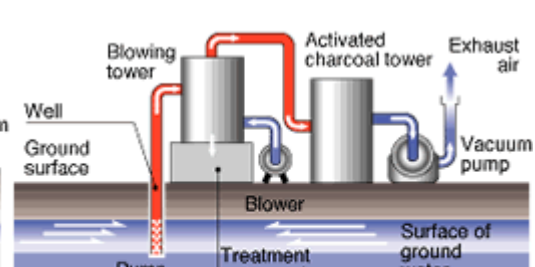
■ Soil Remediation Methods

■ Vacuum gas extraction method



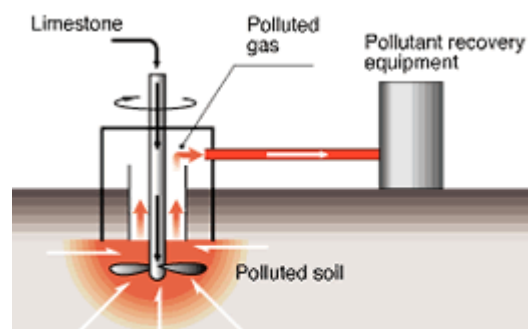
Vaporized pollutants are drawn to the ground surface and absorbed and extracted with activated charcoal.

■ Blowing treatment method



Air is blown into polluted water that has been drawn from underground, and pollutants are vaporized, absorbed, and extracted with activated charcoal.

■ Raw limestone mixing method



Burnt lime is introduced into the polluted soil where it is churned to reach a heat level that produces a hydration reaction. The gas generated by the reaction is recovered.

■ Soil excavation method



Polluted soil is excavated and detoxified or used as landfill at a managed industrial waste treatment site.

■ Example of purification facilities



Soil and Ground Water Contamination

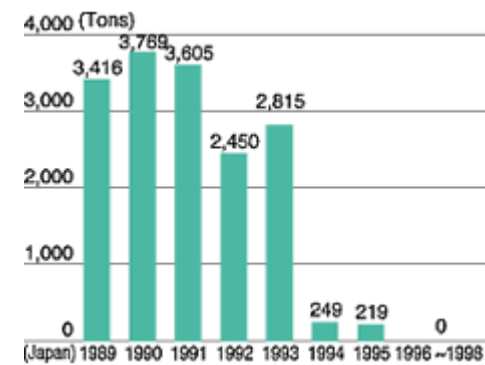
■ Volatile Organic Compounds

The use of trichloroethylene, tetrachloroethylene, 1,1,1-trichloroethane, and other volatile organic compounds as cleaning agents grew rapidly in the 1970s. However, the toxicity of volatile organic compounds later became apparent. Moreover, these agents are believed to have cancer-causing properties. Matsushita totally eliminated the use of volatile organic compounds as cleaning agents by adopting processes that eliminated the need for cleaning and switched to alternative agents.

■ Changes in cleaning methods and alternate agents

Cleaning component and materials	Changes in substitute cleansing agents
Press oil for power sources and printer components	Carbon hydrogen-based agents
Plastic IC components	Alcohol/water cleaning
Plastic printed circuit boards	Nonwashing flax that eliminates the need for cleaning
Aluminium die cast processing oils	Water-soluble Water cleaning
PC press oils	Alkali water cleaning
Press component press oils	Eliminating the need for cleaning by switching to lubricant steel plates

■ Use of volatile organic compounds



1,1,1-trichloroethane	carbon tetrachloride
dichloromethane	1,1-dichloroethylene
trichloroethane	1,1,2-trichloroethane
tetrachloroethylene	1,1,2-trichloroethane
1,2-dichloroethane	1,3-dichloropropene

Environmental Engineering Company

Established in 1976, Matsushita Seiko Engineering Co., Ltd., engages in activities within and outside Matsushita. These include such environmental businesses as wastewater treatment and soil purification as well as such commercial-use air-control facilities for factories, buildings, and clean rooms. Using the environmental preservation technologies and know-how cultivated through these activities, this company changed its name to Matsushita Environment Airconditioning Eng. Co., Ltd., and is now carrying out its activities under a new structure with strengthened ties to Matsushita.

Business fields	
Air conditioning and sanitation facilities	<ul style="list-style-type: none">■ Air circulation and air conditioning■ Water supply and wastewater and hygiene facilities■ Automated control and calculation■ Clean room facilities
Production process-related facilities	<ul style="list-style-type: none">■ Purified and ultrapure water production systems■ Semiconductor production-related equipment
Glass and construction related	<ul style="list-style-type: none">■ Atriums■ Skylights■ Opening and closing systems■ Curtain wall light adjustment systems
Wastewater treatment facilities	<ul style="list-style-type: none">■ Rainwater and wastewater treatment facilities■ Water treatment facilities for households, industry, and agricultural communities
Air pollution prevention facilities	<ul style="list-style-type: none">■ Waste gas treatment facilities■ Dust collectors■ Solvent recovery facilities■ Deodorizing facilities
Soil remediation facilities	<ul style="list-style-type: none">■ Underground water purification facilities■ Soil remediation facilities
Waste material recycling facilities	<ul style="list-style-type: none">■ Household electric appliance recycling facilities■ Factory waste material recycling facilities
Waste material treatment facilities	<ul style="list-style-type: none">■ Household waste treatment facilities■ Incinerators■ Industrial waste treatment facilities
Promotion of energy conservation	<ul style="list-style-type: none">■ Solar power facilities■ Wind-powered electric generating facilities■ Cogeneration systems
Environmental surveys, measurement, and analysis	

■ Example of Environmental Engineering Activities

Multimedia Center in Tokyo:

In fiscal 1995, the Multimedia Center was awarded the Energy Conservation Structure Prize by the Minister of Construction in recognition of its natural lighting and ventilation features.



Recycling System

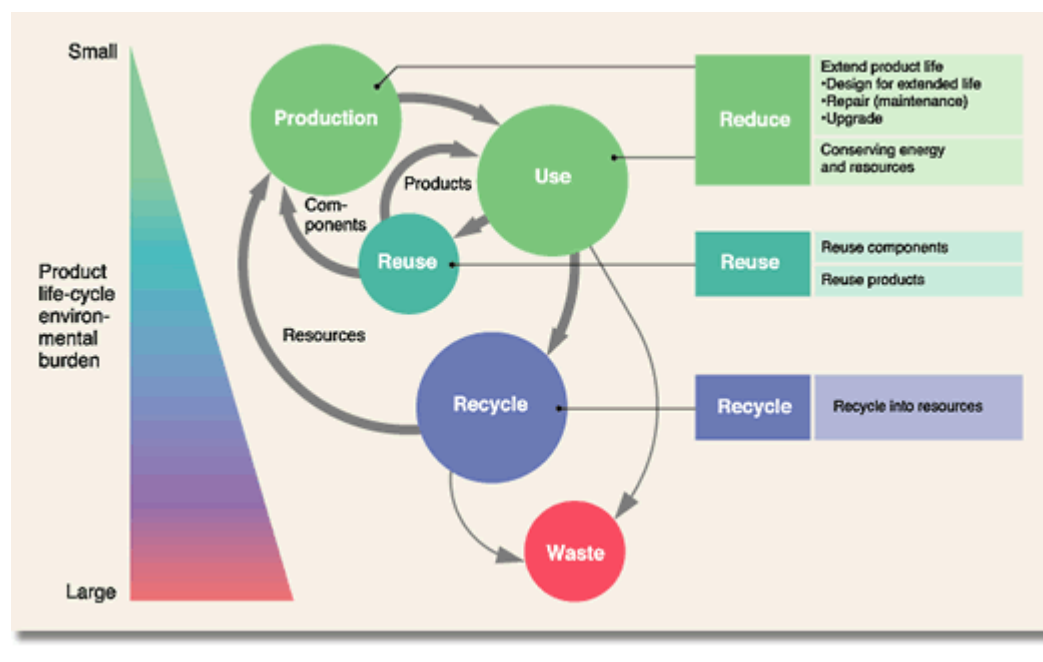
■ The Attitude of the Group

As it works toward the realization of a recycling-oriented society, Matsushita is carrying out verification research for the recycling of principal products, developing recycling technologies, and developing easy-to-recycle products with the aim of reducing the burden on the environment.

■ The Reduce and Reuse Research Committee

In May 1999, Matsushita launched the Reduce and Reuse Research Committee to minimize resource and energy consumption. Formed to promote recycling, this committee was established as part of Matsushita's efforts to build a framework for reducing waste products and progressing with the reuse of products and components.

■ Environmental Burden during the Product Life Cycle



Recycling System

■ The Recycling of Four Types of Household Electric Appliances

The Association for Electric Home Appliances of Japan has carried out research on the appropriate treatment of used household electric products and has developed various recycling technologies. Matsushita has cooperated with this organization, serving the Kansai area, for verification research on the recycling of used TVs and refrigerators. Matsushita also participated in verification research for the integrated recycling of used TVs, refrigerators, air conditioners, and washing machines, which was carried out in Nakamachi, Ibaraki Prefecture.

■ The Law for Recycling of Specified Kinds of Consumer Electric Goods (Japan)

Objective : The correct and smooth collection, transportation, and recycling of used household appliances and the effective use of resources

Schedule : Announced on June 5, 1998, and scheduled for implementation on April 1, 2001

Products subject to law : TVs, refrigerators, air conditioners, and washing machines

Outline : •Obligation of disposing party: transfer correctly and payment of recycling costs

•Obligation of retailer: pickup from the disposing party, transport correctly, transportation, and transfer to manufacturer

•Obligation of manufacturer and other parties: pickup, transfer, recycle into products, and correct treatment

■ Research and Development by the Group

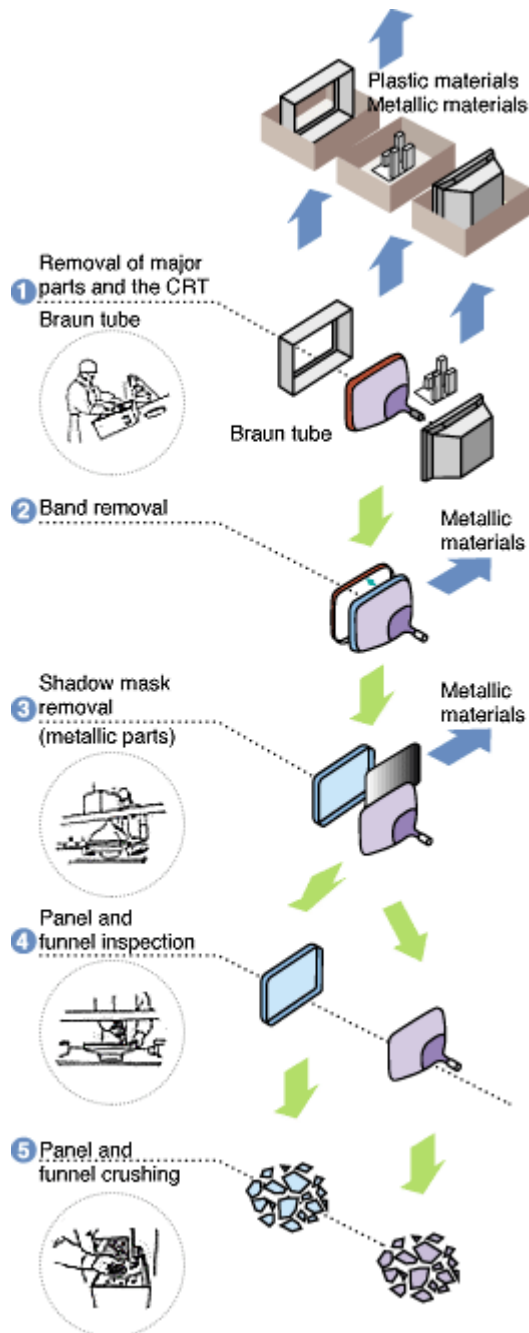
Through the previously mentioned verification research, we are raising recycling rates, considering the economic feasibility of recycling, and developing appropriate treatment methods. Moreover, to carry out the collection and recycling of products, we are planning to start recycling used household electric appliances. Matsushita's basic thinking is to aim for the nationwide implementation of a recycling system that is approved of by society and other related parties. In addition, Matsushita plans to develop recycling technologies focused on common issues related to recycling as it strives to minimize the volume of waste for final treatment.

Recycling System

■ Recycling Used TVs

Cathode-ray tubes (CRTs) account for approximately 60% of a TV's total weight. Because of the lead contained in the glass components in the rear of a CRT, recycling has been difficult until recently. Matsushita has developed technologies for separating the front glass sections from the rear glass sections for recycling, a process that has significantly increased the percentage of recycled materials.

■ Recycling Used TVs



Recycling System

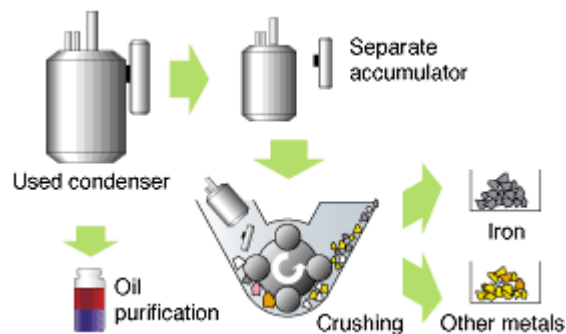
■ Recycling of Insulation Materials

Matsushita has developed technologies that make the use of vacuum insulation materials heartwood and has created a new process for recycling hard urethane foam, which has long been used as an insulation material for refrigerators but has proven difficult to recycle. Recycled vacuum insulation materials can provide approximately 2.5 times the insulation of hard urethane foam and can be adapted for refrigerators, household appliances, and other appliances used for heat and cold retention.



■ Recycling Motors and Compressors

The dismantling and recycling of motors and compressors are difficult tasks due to the degree of hardness of the components. Matsushita has thus developed recycling technologies and begun actual testing of this recycling process.

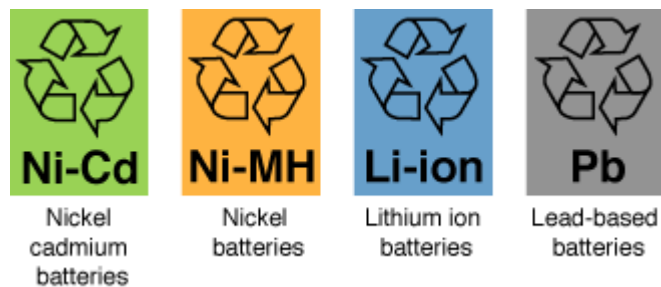


Recycling System

■ Recycling Rechargeable Batteries

Matsushita has been recycling nickel cadmium batteries through the Association of Battery Manufacturers since 1994. Rechargeable batteries contain a number of scarce materials, including nickel, cadmium, and cobalt. Matsushita recycles four types of small-scale rechargeable batteries in addition to lead-based batteries used in automobiles and other equipment, of which it has a collection and recycling ratio of over 90%.

■ Rechargeable Batteries



■ Collection of Rechargeable Batteries



\$B'' (JCollection box for rechargeable batteries

To promote the collection of small rechargeable batteries, a recycling box has been set up at the entrance of participating shops.

Global Environmental Preservation Activities

■ Global Environmental Preservation Promotion Structure

Matsushita has established environmental divisions at its holding and support companies in North America, Europe, Asia and Oceania, China, and Latin America. Each of these divisions formulates and executes environmental programs specifically tailored for regional environmental problems. In addition, environmental officers from each Matsushita company participate in regional environmental conferences held several times a year to discuss Groupwide and regional policy issues.

■ Global Conference for the Environment

With the aim of strengthening cooperation on a global level, in June of each year Matsushita holds its annual Global Environment Conference, in which environmental division representatives from each region gather to discuss regional activities and environmental trends. The 1998 conference drew approximately 120 participants, including 21 regional representatives, and featured a panel discussion focusing on environmental activities and the recycling of used products.

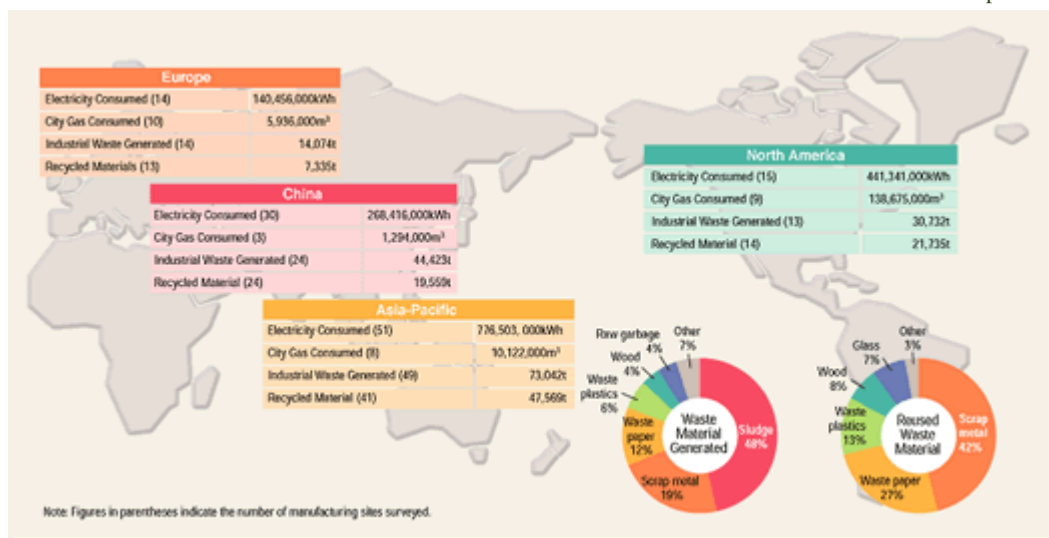


■ Collection of Overseas Environmental Data

Matsushita conducts a survey, called the Environmental Performance Report, to monitor the yearly environmental preservation activities of its facilities. Until 1994, the survey was conducted only in Japan. However, we have been monitoring environmental activities through individual systems designed for each country, such as implementing the management tools called for in the Facility Profile in the North American region. Since fiscal 1995, the Environmental Performance Report has been used in all Matsushita's global facilities with the exception of North America. In fiscal 1998, we revised the survey and introduced it to all facilities, including those in North America, as well as to principal nonmanufacturing companies. In fiscal 1998, approximately 80% of global facilities completed the survey. Matsushita is constantly revising the survey to increase participation.

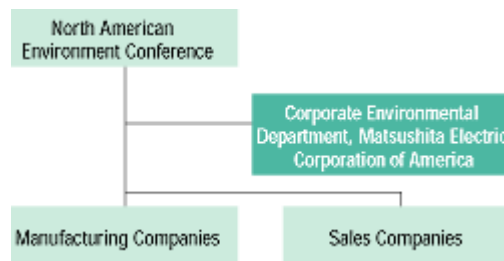
■ Principal Environmental Data of Overseas Manufacturing Facilities (Fiscal 1998)

► Expansion



Global Environmental Preservation Activities

■ North America



Regional Environmental Conferences

- North America Manufacturing Environmental Conference
- North America Green Marketing Conference

External Affairs

- Electronic Industries Alliance: Environmental Issues Council
- Information Technology Industries Council: Environmental Committee
- Association of Home Appliance Manufacturers: Government Relations Committee
- National Electrical Manufacturers Association: Battery Council International
- Electronic Products Recycling and Recovery Roundtable
- New Jersey Institute of Technology, Multi-Lifecycle Re-engineering Center

Environmental Promotion Activities

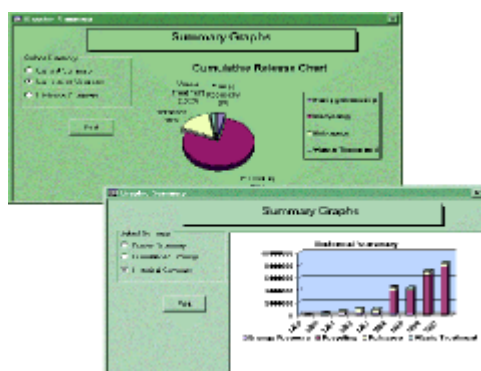
- U.S. Environmental Protection Agency: "Wastewise" newsletter
- California Recycling Fair
- America Recycling Day

The United States has introduced a number of strict environmental regulations, such as mandatory soil testing and evaluations of other forms of pollution linked to high-tech industries. In particular, the Emergency Planning Citizens' Rights Act demands that enterprises provide full disclosure of environmental information to citizens of the respective areas and have a system in place for ensuring full accountability to citizens in surrounding regions. Matsushita in North America is pressing ahead with activities to ensure full compliance with these environmental regulations. To adequately understand and strictly adhere to these diverse and complex environmental regulations, we published the United States Environmental Compliance Handbook, which has been distributed to the management and Environmental Affairs Department of each facility since 1993, and regularly holds seminars for managers involved in these activities. Moreover, in 1992 Matsushita began publishing an independent North American Facility Profile, which is used to better understand and analyze the environmental performance of each manufacturing facility in the United States.

■ United States Environmental Compliance Handbook



■ Example of Figures from Facility Profile



Global Environmental Preservation Activities

■ North America

■ External Activities

In cooperation with the United States Environmental Protection Agency (EPA), Matsushita is working with a number of U.S. states on product management plans aimed at reducing the volume of industrial waste. Furthermore, in line with the EPA's Common Sense Initiative we have completed our proposal for the main parts of regulations to recycle used CRTs. Matsushita is a member of the EPR2 Roundtable and a regular participant of the annual Education Forum, North America's most forward-looking conference on environmental issues.

■ Rechargeable Battery Recycling Corporation

Since its establishment, the Rechargeable Battery Recycling Corporation (RBRC) has played an important part in the collection and recycling of rechargeable batteries in the United States and Canada. The RBRC has attracted considerable attention as a model program for recycling activities in North America.

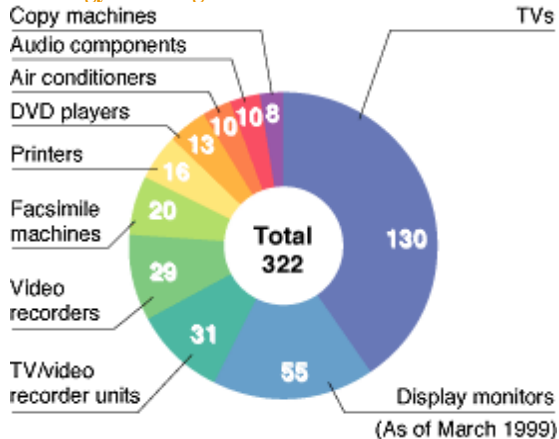
■ Energy Star Program

Matsushita participates in the Energy Star Program, which is sponsored by the EPA to promote energy-efficient products. The Group has a proud history of developing and marketing the widest range of energy-saving products in the home appliance industry and has been lauded for its support of this program. In March 1999, Matsushita received the 1999 Energy Star Home Electronics Partner of the Year Award from the EPA.

■ Energy Star Logo



■ Energy Star Registered Products



■ Support of Environmental Research

Matsushita supports the New Jersey Institute of Technology Multi- Lifecycle Re-engineering Center by sponsoring two technological assistance committees. In addition, we participate in the Demanufacturing Partnership Program at Rutgers University.

Global Environmental Preservation Activities

■ Latin America

Promotion Structure	Latin America is blessed with an abundance of natural beauty. The region has a long and varied history of environmental preservation as exemplified by the hosting of the 1992 Earth Summit (the United Nations Conference on Environment and Development) in Rio de Janeiro, Brazil, and the Fourth Conference of the Parties to the United Nations Framework Convention on Climate Change (COP4) in 1998 in Buenos Aires, Argentina. Matsushita continues to work with governments in the region to ensure full compliance with environmental protection regulations in Central and South America.
■ Corporate Management Division for Latin America Matsushita Electric Industrial	
Regional Environmental Committees	
■ Latin America Presidents' Conference (Environmental Issues)	
■ Latin America Environmental Conference	
External Activities	
■ Support for Centro de Entrenamiento Matsushita del Peru (CEMAPE)	
Environmental Promotion	
■ UD Fair Exhibition (Brazil)	
■ Bogota Fair Exhibition (Colombia)	

■ Latin America

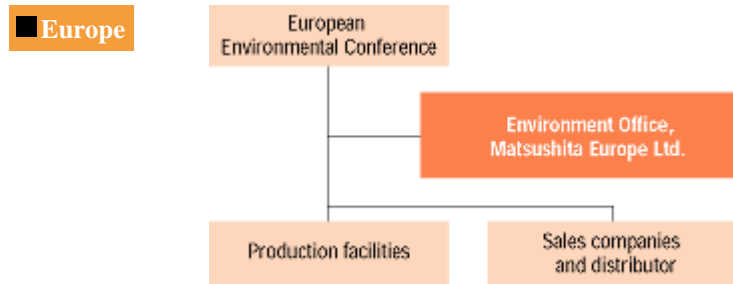
■ EMS

Since there was no ISO 14001 certification when Matsushita introduced EMS into Peru and Costa Rica, Matsushita's business units in these countries were certified through evaluation committees based outside Peru and Costa Rica. In November 1998, Matsushita Electric Industrial del Peru S.A. acquired ISO 14001 certification, becoming the third company in Peru to obtain such certification and the first in the Peruvian electronics industry.

■ Support for Training of Personnel

CEMAPE, Matsushita's education and training center, which teaches courses in environmental management and quality control, evolved from a proposal put forth by then former Japanese Prime Minister Hashimoto to Peruvian President Fujimori to emphasize industrial training in Peru. In August and October 1998, Matsushita responded to requests from both governments to provide assistance to the program and began the Special Environment Course at Matsushita Electric Industrial del Peru. We have also dispatched instructors from Japan and have contributed to employee training by giving lectures on environmental management to students selected by Peru's industry associations.

Global Environmental Preservation Activities



Regional Environmental Conferences

- European Presidents' Conference (Environmental theme)
- European Manufacturers' Environmental Conference
- European Sales Company Environmental Conference
- European Environmental Committee

External Activities

- European Association of Consumer Electronics Manufacturers (EACEM) Environmental Affairs Committee
- Zentralverband Elektrotechnik- und Elektronikindustrie e.v., (ZVEI) Environmental WG
- European Information and Telecommunications Equipment League (ECTEL) Environmental Association
- Japan Business Council in Europe (JBCE)
- EUREKA CARE VISION 2000

Environmental Promotion

- Domotechnica Exhibition (February 1999, Germany)
- CeBIT Exhibition (March 1999, Germany)

Europe is a region of diverse cultures and languages, with rivers running through several countries and across borders. Because of the pollution problems that accompany rapid industrialization, the region is comparatively sophisticated in its drive to preserve the natural environment. In addition to environmental laws governing individual countries, the creation of the European Union has resulted in the adoption of environmental regulations that cover most of the continent. The European Matsushita Electric Group has contributed to finding environmental solutions in Europe for many years, participating in ZVEI since 1984 as well as the EACEM, ECTEL, and other organizations since 1996. In particular, Matsushita actively advanced an opinion to a draft of the WEEE^{*1}, putting forth proposals through such industry organizations as JBCE and ORGALIME^{*2}.

*1: EU Directive on Waste from Electrical and Electronic Equipment

*2: Liaison Office of the European Mechanical, Electrical, Electronic, and Metalworking Industries

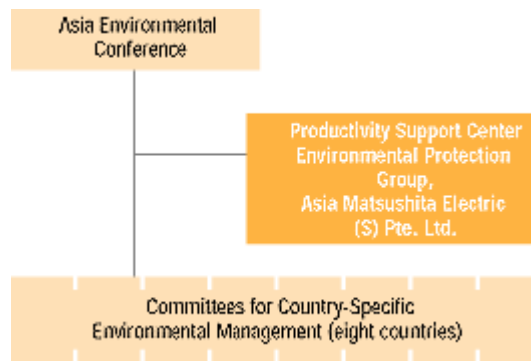
Europe

■ EUREKA CARE VISION 2000

Matsushita is an active participant in EUREKA CARE VISION 2000, which is an organization committed to developing comprehensive technologies for the recycling of electronic equipment. In November 1998, CARE INNOVATION '98, was held in Vienna, Austria. The Managing Director, Corporate Environmental Affairs Division, Matsushita Electric Industrial Co., Ltd., was a key speaker at this event.

Global Environmental Preservation Activities

■ Asia & Oceania



Regional Environmental Conferences

- Asian Presidents' Conference (Environmental Themes)
- Asia Environmental Conference
- Manufacturing Capability Enhancement Conference, Environmental Subcommittee
- All of the following Countries' Environmental Management Committees (Singapore, Malaysia, Thailand, Indonesia, the Philippines, India, Taiwan, and Australia)

The Asia/Oceania region comprises diverse countries, each with differing ethnic groups, religions, and languages. Matsushita operates 56 manufacturing subsidiaries in the region, making it Matsushita's largest overseas production base. Environmental conservation in this region requires careful consideration of each country's unique features. In 1995, we established country-specific environmental management committees in eight countries and since then have conducted Asian environmental conferences spanning the region. Environmental management committees meet in each country several times a year, and the Asia Environmental Conference is held semiannually.

■ Asia & Oceania

■ Environmental Management Systems

The governments of some countries have come together to establish ISO 14001 certification pilot programs and promote the system's adoption. From Matsushita, Matsushita Refrigeration Industries (S) Pte. Ltd., Matsushita Electric Co., (M) Bhd., and Matsushita Television Co., (Malaysia) Sdn. Bhd., were selected for the pilot programs, with all three companies achieving certification in fiscal 1996. Thereafter, Matsushita spread this expertise to each company in the Asia/Oceania region and contributed to the region as the corporate leader in environmental conservation.

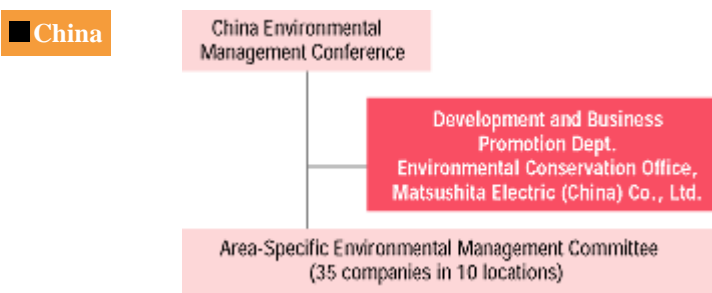
■ Recycling Efforts

Matsushita in Taiwan played the central role in the establishment of E&E Recycling, Inc. In September 1999, operations commenced at Plant One, with a monthly processing capacity of approximately 210,000 units, including TVs, refrigerators, air conditioners, and washing machines.

■ E&E Recycling, Inc.



Global Environmental Preservation Activities



Regional Environmental Conferences
■ China Environmental Management Conference
■ Environmental Management Systems Interchange Conference
External Activities
■ Announcement of the 1998 ISO 14001 International Symposium, sponsored by the Chinese National General Office for Environmental Preservation
Environmental PR
■ Newspaper Advertisement, "Celebrating the Launch of an Environmental Certification Agency in China"
■ Press release, "31 Chinese Companies Achieve ISO 14001 Certification"

For many years, the Chinese government has maintained a comprehensive system of environmental legislation as promoted by international environmental treaties. Also, for all industrial projects with potential environmental impact, the Chinese government has enacted a unique simultaneous system in which environmental conservation devices are designed, installed, and operated along with main equipment. It also enforces strict environmental legal actions, including the shutdown and forced removal of several thousand polluting factories. In November 1996, Matsushita sponsored the First Annual Matsushita (China) Environmental Management Conference in Beijing and officially established ISO 14001 certification programs. It was also selected for the Chinese government's primary pilot program for ISO 14001 certification, and in December 1996 Beijing.Matsushita Color CRT Co., Ltd., achieved certification. By March 31, 1999, 32 factories, including two companies in Hong Kong, had achieved certification. This alone accounts for nearly 30% of all certified companies in China.

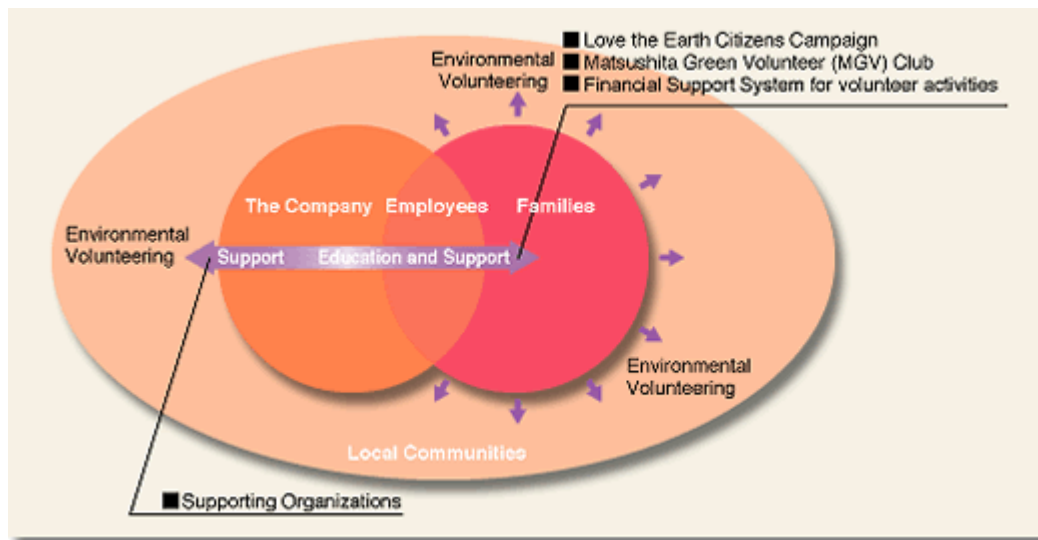
■ The People's Daily (Feb. 25, 1999)

The clipping is from the February 25, 1999 issue of The People's Daily. The headline reads '松下在华生产企业全部通过环境认证' (All Matsushita production enterprises in China have passed environmental certification). The text describes how Matsushita's commitment to environmental protection led to all its 31 manufacturing subsidiaries in mainland China achieving ISO 14001 certification. It mentions that the companies have implemented various measures like using recycled materials, reducing waste, and improving energy efficiency. The article also notes that Matsushita has been a pioneer in environmental protection in China since 1991.

The above article relates the ISO certification of all 31 Matsushita manufacturing subsidiaries in mainland China. As Matsushita-Wanbao (Guangzhou) Air-Conditioner Co., Ltd., and Matsushita-Wanbao (Guangzhou) Compressor Co., Ltd., took joint certification, the number of sites is listed as 30 or 32 sites with the inclusion of the locations in Hong Kong.

Domestic and Community Activities

■ Domestic and Community Activities



Principal achievements of the Love the Earth Citizens' Campaign (fiscal 1998)

- Production of educational leaflet inserted in copies of Company newsletter (distributed to approximately 140,000 people)
- Production of educational posters and their display at Company facilities (approximately 120 locations)
- President's message during Environment Month (June)
- Environmental Suggestion Emphasis Month established

Domestic and Community Activities

■ Love the Earth Citizens' Campaign

It is crucial for corporations, governments, and citizens to participate in seeking solutions to global environmental problems, and more people are realizing that reform is necessary even in personal lifestyles. Matsushita has promoted many environmental efforts on the corporate level, and in February 1998 it implemented the Love the Earth Citizens' Campaign to motivate every Matsushita employee to fulfill their roles as local citizens. As part of the campaign, the Company and its labor union work together to support education and environmental volunteer programs, while employees and their families volunteer their time in local environmental efforts to reevaluate their lifestyles.

■ LE (Love the Earth) Family

With increasing awareness of environmental issues, Matsushita has established a system to register environmentally active employees and their families as LE families and is promoting environmentally conscious lifestyles, such as environmental household budget ledgers.

■ Environmental Household Budget Ledger

Matsushita is promoting the use of environmental household budget ledgers as tools for employees and their families to reevaluate their lifestyles. We also produce and distribute our own original environmental household budget ledger, along with promoting its use through the Company newsletter.

The environmental household budget ledger calculates the volume of water, electricity, household gas, and gasoline used in the household, and the corresponding amount of carbon dioxide discharge. Checking this ledger monthly helps families devise methods for reducing carbon dioxide discharge.



■ Examples of Education and Support

■ Environmental seminars on Home Appliance & Housing Electronics Company



The Group sponsors seminars featuring lecturers from nonprofit organizations. Home Appliance & Housing Electronics Company held four such seminars in 1998, attended by a total of 340 people.

■ Head office flea market



A mini flea market was included in the Company's head office December 1998 charity bazaar. The market featured a total of 187 used items.

■ PET collection at the Company sports meet



A special event was included in the October 1998 in-company athletic meet to collect PET bottles from attending families.

Domestic and Community Activities

■ Matsushita Green Volunteer (MGV) Club

In November 1998, the MGV Club was established as an environmental volunteer organization consisting mainly of employees, union members, and retired personnel. Eight companies and approximately 70,000 employees in Matsushita have become club members who donate funds and work closely with local communities on environmental activities. Furthermore, nationwide chapters of Matsushita's labor union, in cooperation with local municipalities and volunteer forestry organizations, conduct numerous campaigns for forest preservation and the cleanup of shores and other natural areas, nature observation trips, environmental lectures, and other such events. Approximately 4,000 people participate in these activities annually.

■ Principal Achievements of MGV (fiscal 1998)

"Unitopia Sasayama" Conservation Campaign	(Hyogo)
Tsurumi Green Land Park Cleaning Campaign	(Osaka)
Takatsuki Citizen Forest Conservation Volunteer Campaign	(Osaka)
Minami Ashigara tree-planting volunteer activities	(Kanagawa)
Utsunomiya Union Green Lands "Shizen-no-Mori-Tsukuri"	(Tochigi)
Yokohama "Shinji-no-Mori" Conservation Campaign	(Yokohama)
Sakura Watching [*]	(nationwide)
Beach-Cleaning Campaign	(Chigasaki, Suma)
Municipally sponsored environmental citizens' campaigns	(nationwide)

^{*}This campaign surveys the periods when cherry blossoms bloom around the country as a measure of global warming.

■ Beach-Cleaning Campaign



■ "Unitopia Sasayama" Conservation Campaign



Domestic and Community Activities

■ Financial Support for Volunteer Efforts

Matsushita has long provided support for independent employee volunteer activities through Company institutions and labor union partnerships. In addition to these existing support efforts, we implemented our Volunteer Activity Financial Support System for the promotion of greater employee involvement in social contribution activities in April 1998. This system provides partial financial support for the social causes of nonprofit organizations in which Matsushita employees, retired personnel, and their respective spouses participate. In fiscal 1998, the system provided support for five environmental conservation campaigns.

■ Employees' Voluntary Activities Supported by Matsushita in Fiscal 1998

Osaka Society for Nature and Environmental Conservation A comprehensive nature and environmental conservation group, based at Osaka Senior Nature College	Osaka
Nigawa Association for Nature Consideration Surveys and conservation efforts for local natural environments	Hyogo
Hanamaki Citizens' Society for Protection of Beech Forests The society seeks to bequeath the area's lush nature to future generations through the protection of beech tree forests.	Iwate
Soft Energy Project Promoting energy conservation and the use of solar power and wind power	Kanagawa
Kobe Asia Town Promotion Conference Active in efforts for multilingual trash collection signs	Hyogo

■ Soft Energy Project



Domestic and Community Activities

■ Supporting Organizations

Matsushita has always been supportive of various causes. However, recently environmental conservation has grown to be a crucial area of support, on a par with art, culture, and social welfare. Below is a summary of the organizations supported by Matsushita in fiscal 1998.

■ Organizations Supported by Matsushita in Fiscal 1998

Japan National Trust
Japan Society for Nature Conservation
Japan Wild Bird Society
Japan Committee of the World Wildlife Fund (WWF)
Keidanren Conference on Nature Preservation Fund Management
Organization for Promoting Tree Planting on National Lands
Japan Environmental Education Forum
Rainbow Parade Executive Committee
Japan Environmental Association
Japan Tree-Planting Center
General Energy Promotion Committee
Japan Society for Protecting Pines
The Nikko Cedar Protection Foundation
NHK International
Foundation for the Preservation of Wetlands

The support given to NHK International was used, at the request of China Educational Broadcasting, to fund the televising of the children's environmental education program, "One and Only Earth," from October 1998 to February 1999. The weekly 20-minute show was broadcast 40 times (including reruns).

Education and Self-Development

■ Employee Training

Ensuring that employees are well informed about the environment is indispensable in addressing wide-ranging environmental problems. Matsushita holds environmental management seminars in various regions of the world to improve its employees' knowledge of the environment. These seminars cover a wide spectrum of issues ranging from general environmental awareness to specialist training.

■ Matsushita Electric Group Environmental Education

New Employees	Regularly Hired Employee Introductory Education (Environmental Training)
	Regularly Hired Employee Introductory Education (Environmental Training)
Promoted Employees	Councilor Training (Environmental Training)
	Assistant Councilor Training (Environmental Training)
Employees in Overseas Posts	Overseas Plant Management Training (Environmental Training)
Environmental Auditors	Internal Environmental Auditing Seminars
	Managerial Internal Environmental Auditing Seminars
Technical Specialists	Energy Conservation Diagnostic Training
Managers	Management Research Organization (Environmental Theme)
	Regular Reporting Organization (Environmental Theme)
General Staff	Environmental Seminars

Education and Self-Development

■ Environmental Contribution Award

Matsushita established its own Environment Contribution Award System in 1993 for recognizing outstanding environmental conservation efforts.

■ Environment Contribution Award Recipients

	President's Award		Special Award
	Domestic	Overseas	
Fiscal 1993	■ Dry Battery Div., Matsushita Battery Industrial Co., Ltd.	-----	Panasonic Deutschland GmbH
Fiscal 1994	■ Uozu Plant, Matsushita Electronics Corporation	■ Matsushita Battery Industrial Corporation of America, Storage Battery Div.	-----
Fiscal 1995	■ Hiraide Plant, Matsushita Electronics Corporation	■ Matsushita Electric Co., (M) Bhd.	-----
Fiscal 1996	■ Capacitor Div., Matsushita Electronic Components Co., Ltd.	■ Beijing ■ Matsushita Color CRT Co., Ltd.	■ AV Kadoma, AVC Company
Fiscal 1997	■ Refrigerator Div., Matsushita Refrigeration Company	■ Matsushita Communication Industrial UK Ltd.	■ Arai Plant, Matsushita Electronics Corporation ■ Kasugai West Div., Matsushita Seiko Co., Ltd. ■ America Matsushita Electronics Company
Fiscal 1998	■ Vacuum Cleaner Div., Home Appliance & Housing Electronics Company	■ P.T. Matsushita Kotobuki Electronics Industries Indonesia	■ Recording Media Div., AVC Company ■ Audio Div., Fukushima Plant, AVC Company ■ Saedo and Tsunashima Area, Matsushita Communication Industrial Co., Ltd. ■ Indo National Ltd.

■ Environmental Rally

Managing Directors and Environmental Officers from each Matsushita company gather at Matsushita's Environmental Rally, held in June every year. At the convention in fiscal 1998, Matsushita's policy on crucial environmental measures was announced.

■ Environmental Exhibition

Coinciding with the Environmental Convention, an Environmental Exhibition is also held each June. Group environmental measures, shared technological development, and Matsushita companies' campaigns are exhibited.

Education and Self-Development

■ Promoting Suggestions

To elicit suggestions to promote environmental conservation, Matsushita established suggestion emphasis months in fiscal 1998. Outstanding ideas are implemented at Matsushita facilities.

■ Suggestion Promotion

Period	Number of Suggestions
Number of Suggestions	19,241
October 1998 (Recycling Month)	14,692
February 1999 (Energy Conservation Month)	15,226

■ Slogans

Environmental slogans have been collected since fiscal 1997 as part of internal education. Out of the approximately 12,000 slogans collected in fiscal 1998, the three below were selected. They are used in posters displayed during their related special months.

■ Fiscal 1998 Environmental Slogans

Environmental Slogan
"For your future and your children's future, environmental problems are everyone's concern."
Recycling Slogan
"Resources are limited. Ideas are not. Be friendly to the earth...recycle."
Energy Conservation Slogan
Energy Conservation Slogan

■ Intranet

Since fiscal 1997, the latest environmental trends and Matsushita's tools for promoting environmental activities are available on the Company's intranet.

■ Group Newsletter

The Company newsletter Environmental Innovation is published quarterly as a repository of the latest environmental trends. Through the newsletter, Matsushita strives for information sharing among the world's regional environmental officers. Furthermore, environmental reports are regularly published around the world.

Disclosure of Information

■ Environmental Information

Matsushita releases information on its environmental conservation efforts in a variety of forms. These Environmental Reports are a crucial medium for disseminating information, and we intend to continue issuing them annually. Additionally, a wide range of communication is conducted by Matsushita via Internet Web sites, exhibitions, newspaper advertising, lectures, press releases, e-mail, post, telephone, and facsimile.

■ Environmental Reports

With the understanding that the majority of readers are not environmental specialists, every effort has been made to make these reports as easy to understand as possible.



■ **Fiscal 1997 issue**
■ 25,000 copies distributed (17,000 in Japanese, 8,000 in English)
■ 24 pages total
■ Issued in February 1998



■ **Fiscal 1998 issue**
■ 15,000 copies distributed (10,000 in Japanese, 5,000 in English)
■ 28 pages total
■ Issued in March 1999

■ Environment Web Site

In September 1998, a Web site entitled "Matsushita Electric Group's Environmental Preservation Activities" was created in both Japanese and English.

■ Participation in Lectures and Exhibitions

Matsushita participates in numerous lectures and exhibitions around the world to publicize its environmental activities.

■ Seventh Annual Convention for the Promotion of Waste Reduction



Held in November 1998, this was one of the conventions in which Matsushita participated.

■ Environmental Display at the Hall of Science and Technology

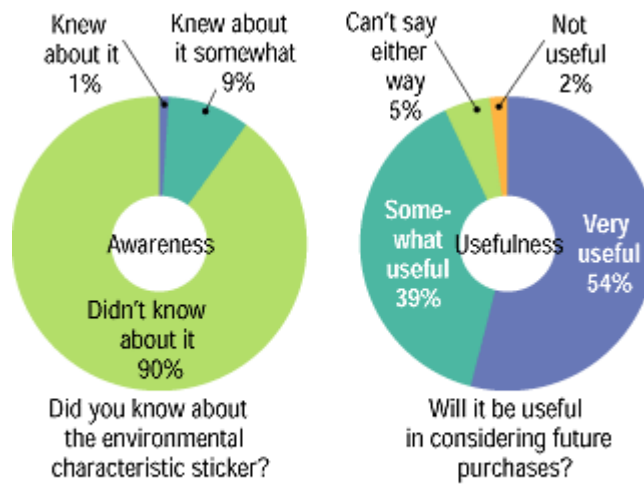


Matsushita's Hall of Science and Technology, located near the Matsushita Electric Industrial head office, displays the achievements of Matsushita research and development year-round. Since 1992, the center has featured an environmental display, demonstrating our environmental measures.

■ Newspaper Advertising

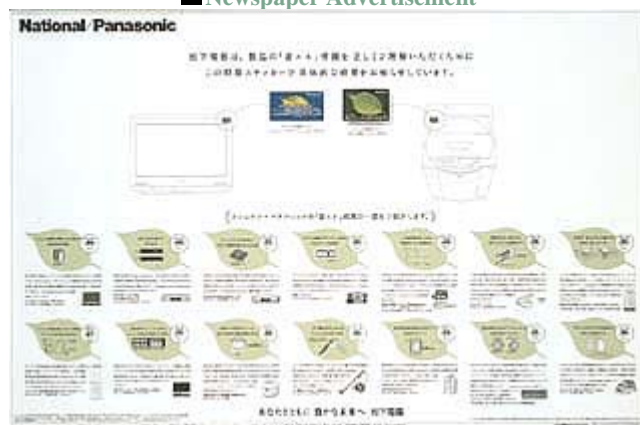
To inform as many people as possible of its efforts to conserve the environment, Matsushita regularly runs newspaper advertisements. In particular, response from around Japan to our March 1999 environmental characteristic sticker advertisement on energy conservation was enormous.

■ Questionnaire on the Environmental Characteristic Sticker



Taken from 200 *Nihon Keizai Shimbun* readers on March 10, 1999

■ Newspaper Advertisement



Disclosure of Information

■ Inquiries and Requests

Matsushita provides instant replies to customer inquiries and requests concerning environmental activities via telephone, facsimile, and Matsushita's environmental Web site.

■ Examples of Comments and Group Responses

Q. Request for information on environment-friendly products (homemaker from Yokohama)

A. List of Environmentally Conscious Products sent by e-mail and a copy of the National Products Energy Conservation Catalog sent by post

Q. Request for details on MD Players made with lead-free solder (technician from Germany)

A. Price, product number, and photographs of the unit sent by e-mail

Q. Request for corporate environmental posters and pamphlets for display at school festival (Osaka high school teacher)

A. Love the Earth Citizens' Campaign posters and pamphlets sent along with several copies of the Group's environmental report

Q. Request for information on the battery division's environmental policy and battery recycling (U.K. university student)

A. E-mail reply and document on battery sent simultaneously

Certificates and Awards (Fiscal 1998)

Region	Award		Facility/Product
Japan	Energy Conservation Award	Energy Resource Bureau Director's Award Energy Conservation Center Chairman's Award	Centrifugal force washing machine Room air conditioner (CS-G22YH) Broadcast digital VCR system (DVC PRO Series)
	Energy Conservation Equipment Award	The Japan Machinery Federation Chairman's Award	In-process control for resistance welder [*]
	Factory Energy Management Excellence	Ministry of International Trade and Industry Director's Award	Matsumoto Plant, Matsushita Communication Industrial Co., Ltd. Television & Network Systems Div., Utsunomiya, AVC Company Video Equipment Division, Okayama Plant, AVC Company Recording Media Div., AVC Company Hiraide Plant, Matsushita Electronics Corp.
	National Energy Conservation Promotion Council	Ministry of International Trade and Industry Director's Award Energy Conservation Center Chairman's Award Energy Conservation Center's Award for Excellence	Arai, Matsushita Electronics Corp. Nagaoka, Matsushita Electronics Corp. Recording Media Div., AVC Company Kiyohara, Matsushita Electronics Corp. Uozu, Matsushita Electronics Corp. Kasugai East Div., Matsushita Seiko Co., Ltd.
	Ozone Layer Protection Award	Award for Excellence	Air-conditioner Company
	Recycling Promotion Awards	Recycling Promotion Conference Chairman's Award	Kasugai West Div., Matsushita Seiko Co., Ltd. Okayama Area, Matsushita Electronics Corp. Tonami Plant, Matsushita Electronics Corp.
	Environmental Advertising Contest	Award for Excellence	Akari Poster (Lamplight Relational Poster)
	Japan Institute of Electronics Mounting	Technology Award	Development and mass production of lead-free soldering for portable MD drives

Overseas	U.S. EPA	1999 Energy Star Home	Matsushita Electric Industrial
		Electronics Partner of the Year	Co., Ltd./Matsushita Electric Corporation of America
	U.S. State of Georgia	The Spirit of Industry Award	Matsushita Communications Industrial of U.S.A.
	Chinese Communist Party Wuxi City Committee	Fiscal 1997-1998 Wuxi City Outstanding Environmental Protection Award	Wuxi Matsushita Refrigeration Co., Ltd.
	Xin Hui City, Hui Cheng District People's Government	Fiscal 1998 Award for Advanced Environmental Protection in Hui Cheng District	Xinhui Matsushita Industrial Equipment Co., Ltd.

*This product, developed jointly with Toyota Motor Corp., is highly praised for its effectiveness and minimal energy use through the use of the in-process control method.

History of Environmental Efforts

Era	Matsushita Electric Group Efforts	World Efforts
1970s	<p>1970 • Launch of the Pollution Survey Committee</p> <p>1972 • Environmental Management Office established</p> <p>1975 • Environmental Management Regulations enacted</p>	<p>1971 • Environmental Agency established in Japan</p> <p>1972 • The Limits to Growth published by the Club of Rome</p> <p>• U.N. Conference on Human Environment held in Stockholm (Declaration of Human Environment adopted)</p>
1980s	<p>1988 • Launch of Freon Countermeasures Committee</p> <p>1989 • Establishment of the Environmental Protection Promotion Office (an outgrowth of the Environmental Management Office)</p>	<p>1985 • The Vienna Treaty of ozone layer protection adopted</p> <p>1987 • The Montreal Protocol on ozone-depleting substances adopted</p>
1990s	<p>1991 • Matsushita Environmental Charter enacted</p> <p>• Environmental R&D Center established</p> <p>• Product Waste Committee launched</p> <p>• Matsushita Product Assessment enacted</p> <p>1993 • Matsushita Environmental Protection Promotion Action Plan (Environmental Voluntary Plan) enacted</p> <p>• Matsushita Group environmental auditing commenced</p> <p>1996 • ISO 14001 Certification Plan enacted</p> <p>• Corporate Environmental Affairs Division (CEAD) established</p> <p>• Environmental Conference established</p> <p>1998 • Love the Earth Citizens' Campaign commenced</p> <p>• Recycling Business Promotion Team established</p> <p>• Environmental Auditing Office established within CEAD</p> <p>1999 • Office established within CEAD</p>	<p>1991 • Japan's Keidanren announces its environmental charter</p> <p>1992 • U.N. Framework Convention on Climate Change adopted</p> <p>• U.N. Conference of the Environment and Development (Earth Summit) held in Rio de Janeiro, Brazil</p> <p>1993 • Basic Law on the Environment enacted in Japan</p> <p>1995 • First Conference of Parties to the U.N. Framework Convention on Climate Change (COP1) held in Berlin</p> <p>1996 • Second Conference of Parties to the U.N. Framework Convention on Climate Change (COP2) held in Geneva</p> <p>• ISO 14001 International Standard on Environmental Management Systems enacted</p> <p>1997 • Third Conference of Parties to the U.N. Framework Convention on Climate Change (COP3) held in Kyoto</p> <p>1998 • Fourth Conference of Parties to the U.N. Framework Convention on Climate Change (COP4) held in Buenos Aires</p> <p>• The Law for Recycling of Specific Kinds of Consumer Electric Goods</p>

	<div>Environmental Risk</div> <ul style="list-style-type: none">• Management Promotion Committee launched• Green Procurement launched <div>Environmental Production</div> <ul style="list-style-type: none">• Technology Center launched	enacted in Japan
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