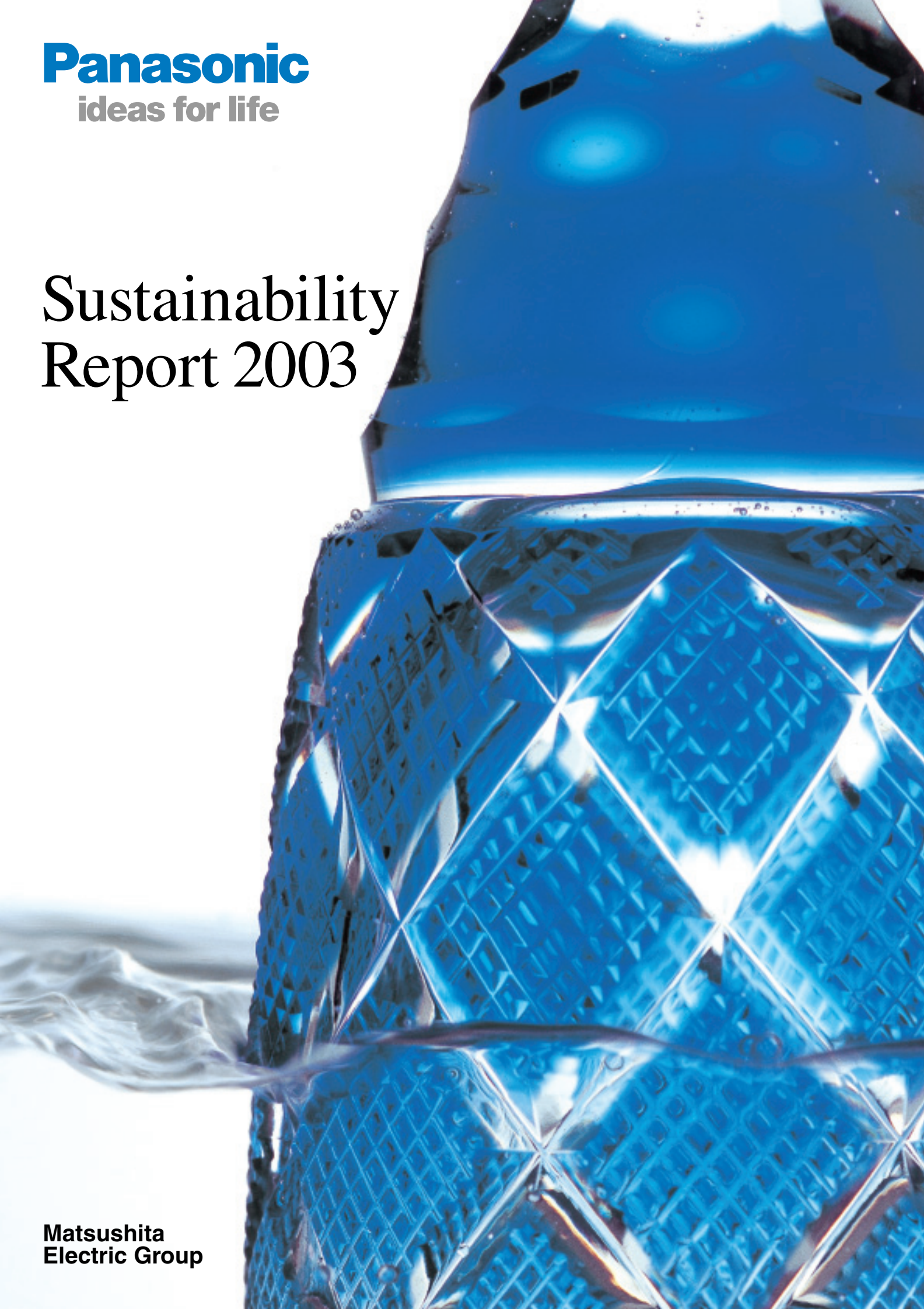
Panasonic
ideas for life

Sustainability Report 2003



Matsushita
Electric Group

Corporate Profile

Matsushita Electric Industrial Co., Ltd.

Address: 1006 Kadoma, Kadoma City, Osaka 571-8501, Japan

Phone: +81-6-6908-1121 (main representative)

Incorporation: December 15, 1935

Establishment: March 7, 1918

Representative: President Kunio Nakamura

Capital: ¥258.7 billion

Net Sales: ¥7,401.7 billion

Number of Employees: 288,324

Stock Exchange Listings: Tokyo, Osaka, Nagoya, Fukuoka, Sapporo, New York, Pacific, Euronext (Amsterdam), Euronext (Paris), Frankfurt, and Dusseldorf

Matsushita Website:
matsushita.co.jp/ (Japanese only)
www.panasonic.co.jp/global/ (English)

■ Brand

Global Brand

Panasonic

Used as the global brand for all product categories

Region/Product-Specific Brand

National

In 1925, the founder, Konosuke Matsushita, chose "National" as the trademark focusing on the word's meaning, i.e. "of or relating to the people of a nation." Used for home appliances in the Japanese market

Product-Specific Brand

Technics

Used for hi-fi audio products, electronic musical instruments

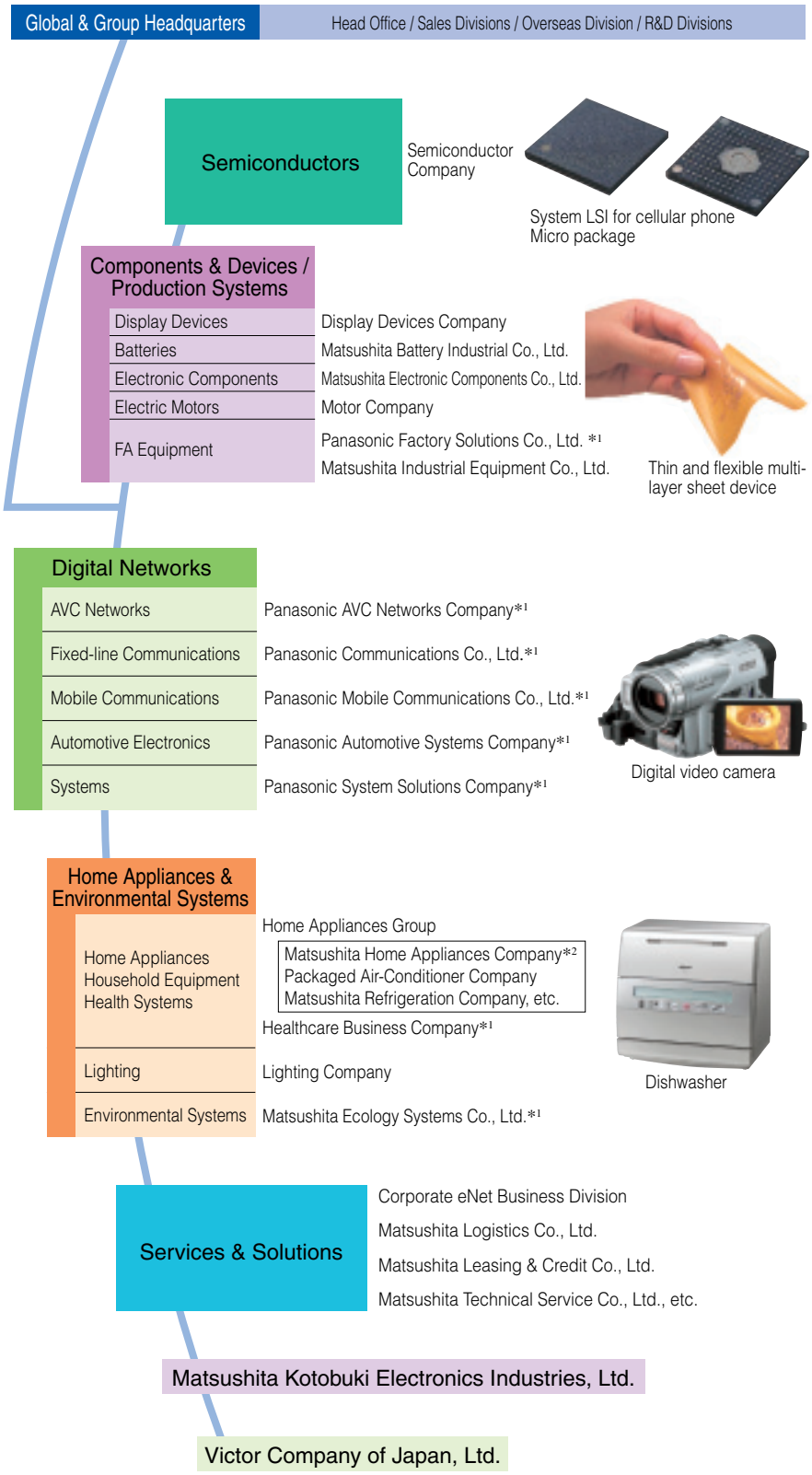
Region-Specific Brand

Quasar

Used in North America for CTVs, VCRs, microwave ovens

Some consolidated subsidiaries such as Victor Company of Japan, Ltd. use other brand names.

■ Business Segments of Matsushita Electric Group



Organizational changes due to business restructuring:

*1 New companies established on January 1, 2003 after the restructuring of the following five companies, which became wholly-owned subsidiaries in October 2002: Matsushita Communication Industrial Co., Ltd.; Kyushu Matsushita Electric Co., Ltd.; Matsushita Seiko Co., Ltd.; Matsushita Kotobuki Electronics Industries, Ltd.; and Matsushita Graphic Communication Systems, Inc.

*2 A division company established on April 1, 2003 after the consolidation of two division companies, the Home Appliance & Housing Electronics Company and the Air-Conditioner Company.

Editorial Policy

- This report is published to provide a faithful and readable account of the activities undertaken by the Matsushita Electric Group toward the establishment of a sustainable society.
- The report covers a wide range of business activities from the three perspectives: "Environmental Sustainability," "Economic Performance," and "Social Responsibility."
- "Highlights 2002" is a newly added special feature. It introduces specific projects carried out at Matsushita from diverse perspectives of outside writers based on their field reports.
- The "Global Highlights" segment presents activities carried out by the Matsushita Electric Group companies around the world, with emphasis on local cultures and customs.
- A sustainability analysis was conducted by The Natural Step, an environmental NPO. The results of this analysis are shown in the Third Party Comments section.

[Reference Guidelines]

This report:

- Complies with the Environmental Reporting Guidelines (FY 2000 version), as set forth by the Ministry of the Environment (Japan).
- Uses the Global Reporting Initiative (GRI)'s Sustainability Reporting Guidelines as a reference (See p. 90 for GRI Content Index).

[Information available on Websites]

- Environmental Activities
  http://matsushita.co.jp/environment/en/
- IR Information
  http://matsushita.co.jp/ir/en/
- Corporate Citizenship
  http://matsushita.co.jp/ccd/index_eng.html

[Scope of the Report]

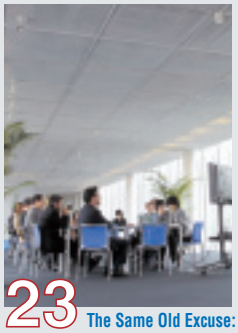
- Reporting period:
  FY'02 (April 1, 2002 – March 31, 2003)
  In this report, the fisal year ended March 31, 2003 is indicated by FY'02. The performance data are from FY'02. Some of the FY'03 activities are also included.
- Organizations covered:
  Matsushita Electric Industrial Co., Ltd., ten main subsidiaries, and other subsidiaries inside and outside Japan (p. 1)
- Scope of data:
  Financial data are consolidated Group data.
  Environmental performance data are the consolidated Group data from all sites that have established the environmental management system (pp. 83-84).
  (The scope of environmental data is different from that of financial data because it does not include small divisions that have not yet acquired the ISO 14001 certification.)

Highlights 2002 mark
Special feature articles are on pp. 7-26.

Facts and Figures mark
Detailed performance data are available on pp. 82-90.

URL mark
Please visit our websites for further information.

CONTENTS



In March, 2003, Japan had the honor of hosting the third meeting of the World Water Forum. During this event, some 25,000 individuals from more than 180 countries gathered to discuss solutions to the looming global water crises. Japan is blessed with abundant precipitation that has supported its rice-based diet over the millennia. Coming from Japan's Shiga Prefecture, which encircles Lake Biwa, the largest lake in Japan, I grew up with a keen awareness of how crucially our lifestyles depend on water.

At the same time, Earth is called the "Water Planet." Yet only 0.01% of Earth's water is readily available for human use. Even today an estimated 1.2 billion people have no access to safe drinking water. Securing enough of this precious resource for human beings is a critical theme as we seek a way to maintain a sustainable coexistence between a rapidly growing world population and the desire of civilization to enrich human life.

Water use and conservation, of course, are not the only challenge. Environmental problems, such as global warming caused by energy consumption and deforestation, are becoming chronic and ever more serious. Coexistence with the global environment is now an urgent concern shared by all mankind. Moreover, from my standpoint as an executive of a global-scale business, I myself am fully aware that Matsushita's own survival demands serious efforts to protect the environment.

Aiming for Coexistence with the Global Environment

Achieving Steady Efforts and Tangible Results, and Moving On to Further Challenges

In October 2001, Matsushita adopted its Environmental Vision and Green Plan 2010, a global action plan laying out 10-year goals to be accomplished by 2010. In so doing, we made a promise to society to meet those goals. Below is a brief report on our progress in the fiscal year ended March 31, 2003.

1. Fully Implemented Lead-free Soldering Worldwide

Fundamentally, the substance we call "solder," which has a history of some 5,000 years, is used to join electronic components, and during this long history, it has always been assumed that lead was an essential ingredient. However, Matsushita has overturned this long-held belief by eliminating lead from solder.

Our efforts led to the 1998 launch of the first product – a portable Mini Disc player – that utilized printed circuit boards made with lead-free solder. Matsushita then set a goal of using lead-free solder in all products around the globe by the end of March 2003, which has occupied a good proportion of our energies since then. I am happy to say that as of now, the Matsushita Electric Group has successfully switched to lead-free solder in all Panasonic/National brand products produced around the world thanks to our partners who helped make this possible. All the Matsushita Electric Group employees share a deep sense of pride in this exceptional achievement. As a Group, we remain committed to expanding the scope of clean manufacturing and minimizing the use of hazardous substances.

2. Developing Energy-Saving Products: Aiming to Be the World's Best

Electrical products consume energy when working to serve their users. It is therefore our responsibility as a manufacturer to adopt any and all reasonable means to reduce the amount of energy consumed. In many product categories, we have developed world-leading energy-saving products. In Japan, for instance, four products, including our CFC/HFC-free refrigerators, have won the Grand Prize for Energy Conservation from Japan's Energy Conservation Center. Meanwhile, in the U.S., our products' superior energy-conserving performance and market popularity have helped us to earn the U.S. Government's Energy Star Partner of the Year Award for the fifth consecutive year.

3. Recycling Home Appliances to Ensure Sustainable Use of Resources

The 20th century linear model of mass production and mass consumption has resulted in the problem of end-of-life electrical products becoming unwanted waste.

Our recycling plant, the Matsushita Eco Technology Center, operates under the "from products to products" concept to extract resources from end-of-life products and reuse them in new products. Our pioneering recycling system for TVs, refrigerators, air conditioners, and washing machines has now been running for two years, recovering 1.2 million end-of-life products and recycling them into new products. We are especially pleased that the plant has received so many visitors, including elementary and junior high school students, who have been able to see our systems and efforts for themselves.

Offering "ideas for life"

On January 1, 2003, Matsushita implemented a Group-wide business and structural reorganization and launched a new corporate structure based on 14 business domains. I myself consider this to be our "second founding." The resolute philosophy that underpins our business operations manifests itself in our contribution to society. To make this a reality, I have presented our mission in the form of two visions: achieving a ubiquitous network society and assuring coexistence with the global environment.

Each person lives in a web of relationships with other people. People-to-people interaction and communication, it seems to me, are one way we enhance the richness of our lives. Ubiquitous network technology gives us the potential to communicate with anyone, anywhere, anytime, and to make our use of time and energy more efficient and rewarding. Moreover, by giving rise to a new value called "creative time," I believe that this technology can benefit us by helping to build a diverse society where each person's individuality is respected.

Looking forward in the 21st century from a global environment perspective, our enjoyment of ever more affluent lifestyles has led to an increasing consumption of resources and energy. Matsushita is dedicated to an alternative kind of development in which we will strive for a "New Prosperity." This New Prosperity adds to the value of our lives, while driving the use of resources and energy to an absolute minimum in order to achieve a harmonious coexistence between human society and the global environment.

All of our endeavors are for the benefit of our customers. The brand slogan 'Panasonic ideas for life' represents the commitment of all the employees, from R&D and manufacturing to marketing and services, to supplying products and services based on valuable ideas which can enrich people's lives and advance the society.

Increasing Transparency and Fulfilling Social Responsibility

Society entrusts Matsushita with resources for its business operations. Our Management Philosophy, which has long underpinned our business, is to make a substantial contribution to society as a public entity by putting these resources to effective and responsible use. We will continue faithfully to put our Management Philosophy into practice, communicate our vision, actions and results more openly and in an easily understandable form.

Above all, environmental concerns, which mirror corporate ethics, are in fact corporate-level management challenges. Increasing transparency with respect to environmental issues heightens corporate ethical behavior, ultimately resulting in greater transparency of corporate activities overall. I believe that when our employees take pride in their own work with vigor and enthusiasm and when we conduct our business fairly and ethically, this will demonstrate our ability as a corporation to develop prosperously and sustainably in the future.

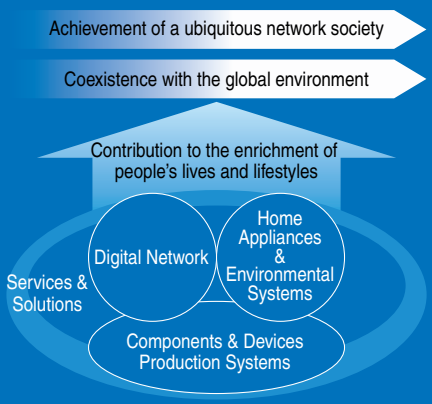
Matsushita has restyled its previous Environmental Sustainability Report into this Sustainability Report to convey these ideas and actions, and we hereby publicly pre-sent our corporate activities. In closing, I would like to take this opportunity to thank you for your interest in Matsushita and your continued understanding and support.

Kunio Nakamura

Kunio Nakamura
President

Panasonic
ideas for life

Matsushita's vision



Achieving a "New Prosperity"

Matsushita aims for a harmonious coexistence between people and the global environment, while seeking a sustainable "New Prosperity." In order to achieve this goal, we offer products and services that improve the quality of life while minimizing environmental impact.

"New Prosperity" indicators: "Environmental Efficiency" and "Factor X"

Matsushita has defined two New Prosperity indicators: "environmental efficiency" and "Factor X." These indicators assess products and services over their entire life cycles. They represent our corporate vision and one of our basic policies for product development. At the same time, they serve as a set of uniform indices to help people around the world choose products and services.

$$\text{"Factor X"} = \text{Environmental efficiency improvement factor} = \frac{\text{Improvement in "quality of life"}}{\text{Reduction on "environmental impact"}}$$

"Quality of life" is a measure for assessing product longevity and product function. "Environmental impact" measures effects in terms of global warming, resources, and chemical substances. Together these define "environmental efficiency."

Global warming

$$\text{GHG* efficiency} = \frac{\text{Product life} \times \text{Product function}}{\text{GHG emissions over the entire life cycle}}$$

Resources

$$\text{Resource efficiency} = \frac{\text{Product life} \times \text{Product function}}{\text{Non-circulating resources over the entire life cycle}}$$

(Non-circulating resources: Resources newly extracted from the earth + Resources disposed of)

Chemical substances

Non-use of hazardous chemicals
(Lead, cadmium, mercury, hexavalent chromium, specified brominated flame retardants, and PVC resin)

* GHG: greenhouse gas

Ripple effect on society

Pursuing the New Prosperity we envision will lead towards a sustainable society.

"Factor X" compares the environmental efficiency of new and old products and expresses improvement as a simple number. To maximize "Factor X," it is necessary to minimize greenhouse gas emissions and the amount of non-circulating resources over the entire product life cycle. For example, halving greenhouse gas emissions will lead to a Factor 2 improvement, and if we additionally double a product's life, the result will be Factor 4 improvement.

Presently, the 20% of the world's population living in developed countries consume 80% of the earth's resources and energy. In light of the rapidly growing world population, Matsushita believes that Factor 4 is required for today's products and will expand its efforts in meeting this requirement.

URL **Factor X**
matsushita.co.jp/environment/factor_x/ (Japanese only)

Highlights 2002

In FY'02, Matsushita initiated efforts to strive for the New Prosperity. New challenges await us at every phase of a product's life cycle, from the manufacturing site to the recycling plant. Here, we put the spotlight on our employees and the efforts they made throughout FY'02.

Highlights 2002

The 1,022-Day Challenge for World's First Initiative

Accomplish the Lead-Free Soldering Project

On March 31, 2003, Matsushita finally eliminated lead-based solder from all Panasonic and National brand products produced around the world. This was the world's first achievement, affecting more than 12,000 products*1. Soldering is a basic technique, and many other technologies depend on it. Re-doing such a basic piece of the process was like plunging a scalpel into the backbone of Matsushita's manufacturing process.

Advanced Skill Development Center,
Corporate Manufacturing Innovation Division

Shoshi Kabashima

"Our motto is 'Being super honest': once we made up our minds, we followed through. We never gave up and got the job done all the way to the other side of the world."

Lead-Free Solder

Solder is not a new material; it's been in use for 5,000 years. And all this time it has contained lead. The dawn of lead-free solder was a revolutionary event.

Matsushita's lead-free solder project was launched on June 12, 2000, exactly 1,022 days before their self-imposed deadline for reaching their goal. Team members began by checking all their products, since no single person really knew about the whole range of products produced at their worldwide manufacturing bases. Shoshi Kabashima at the Advanced Skill Development Center recalls that although the team sorted products into different categories, each product embodied unique technologies. This fact presented them a high hurdle to clear.

Classifying 12,000 products*1 into only six groups

Eventually, after a lot of hard work, they were able to classify their products into "Six groups in three series" according to how they were soldered. Essentially the project team divided the soldering processes into "flow" and "reflow." "Flow" means dipping a board into a bath filled with molten solder. "Reflow" means first printing a board with a paste containing powdered solder and then heating it to melt the solder onto the board.

*1: Some purchased units and OEM products built for others excluded (see p.64)

Although the product classifications now seem to be fairly obvious, actually they are the result of a mass of individual steady efforts.

Next, the team selected the best new materials for each product group. Quality assurance was the most time-consuming task. Many home electronics products are used for a decade or more, so Matsushita needed to carry out intensive quality assurance testing to make sure that the new solder didn't disappoint. For roughly two years, the team scrutinized different combinations of materials, types of plating, temperatures and time conditions and so on. This was an exhausting process but they did make a very interesting discovery. As Yoshinori Wada at the Production Core Engineering Laboratory put it, "We found alternative solders that were even stronger than traditional ones. Traditional solder is not necessarily the best."

In November 2000, the project team finally undertook to choose solders to recommend. There were three finalists: tin-copper, tin-silver-copper, and tin-silver-bismuth-indium. However, this wasn't the end of the story. Just as the project team was preparing to implement these on the production line, they faced a new obstacle.

❶ Melted solder from inside a flow machine is ejected upwards to coat the board as it passes over.
❷ The board passes over the solder in just a few seconds.
❸ Operators control quality by checking the soldering points with a scanning electron microscope.

Eco Process Technology Group,
Production Core Engineering Laboratory,
Corporate Manufacturing Innovation Division

Yoshinori Wada

"Developing lead-free solder involved gaining a great deal of expertise. No manual could have taught you everything about it."

Environmental Auditing Group,
Corporate Environmental Affairs Division

Toshiyuki Onishi

"This was pioneering work, so we had to do the quality verification ourselves. It was a big job."

■ **Six product groups in three series, by soldering process and form**

Three series	Six groups	Typical products
Combined flow/ reflow process	Double-sided mounting	Digital MFP Car audio equipment Notebook PC
	Single-sided mounting	Refrigerator Microcomputer-controlled gas meter
Flow process	Double-sided mounting	Dishwasher Garbage disposer
	Single-sided mounting	Microwave oven Air conditioner
Reflow process	Large temperature difference, low heat durability	Camcorder Optical disk products
	Small size, high heat durability	Cellular phone SD card

URL Matsushita online magazine "isM" Manufacturing technology rewrites 5,000 years of history
matsushita.co.jp/ism/handa.html (Japanese only)

Accomplish the Lead-Free Soldering Project **The 1,022-Day Challenge for World's First Initiative**

Lead-Free Solder

Six-month patent dispute roils the waters

The next obstacle to overcome was getting the patent rights. The University of Iowa in the U.S. was asserting its claim to the proposed tin-silver-copper solder. This claim was only valid in the U.S. and so Senju Metal Industry Co., Ltd. and Matsushita together acquired patent rights for Japan. This led to a heated patent dispute. After six months, a cross-licensing agreement was made to let each party use their technology in each other's territory. By then, it was already the middle of 2001. Time was running out.

By FY'01, lead-free solder had been adopted in only about 400 products. When the introduction progress was going slowly in China, Matsushita set up a Lead-free Soldering Techno-School in Shanghai to offer technical instructions.

Propelling a project that involved 60 suppliers

There was still another big problem to be solved. Matsushita doesn't do all of its soldering in-house, so its suppliers would have to introduce the same lead-free technology. To help make this happen, Matsushita would sign contracts with these business partners, offering them the rights to use its technology and know-how. Many rebelled, because the contracts would cover even products supplied to other customers. Project members shuttled back and forth to about 60 partner companies to explain how this was a new business opportunity. Some of those suppliers are now thanking Matsushita, since they've won new offers thanks to the lead-free solder.

The project affected over 250 bases, including partner firms. In the end, the use of lead-free solder spread to Brazil, the opposite end of the Earth from Japan.

This success wouldn't have been achieved without the entire company working together under a united commitment. Matsushita squeezed everything it had into its 1,022-day battle to make the introduction of lead-free soldering a solid reality.

(Related article: p.64)

Visual Network Products Business Group,
Panasonic AVC Networks Company

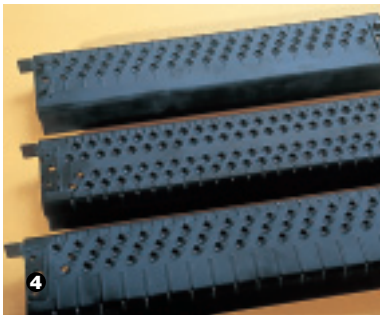
Yasuji Kawashima

"The last place we implemented the technology was in Manaus in Brazil's Amazon River Basin, a city surrounded by a vast jungle. Only Matsushita has gone this far."

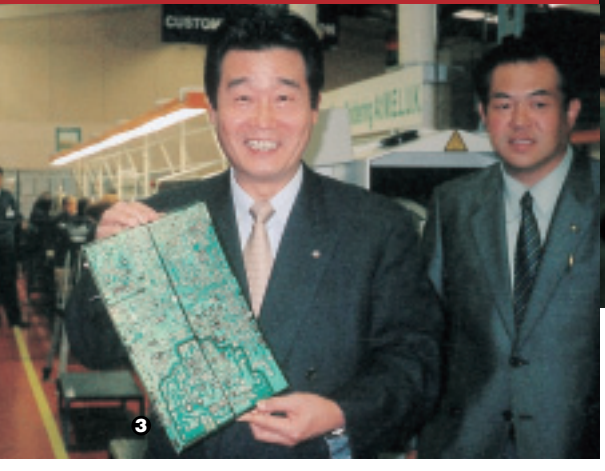
A globe-trotting "solder expert"

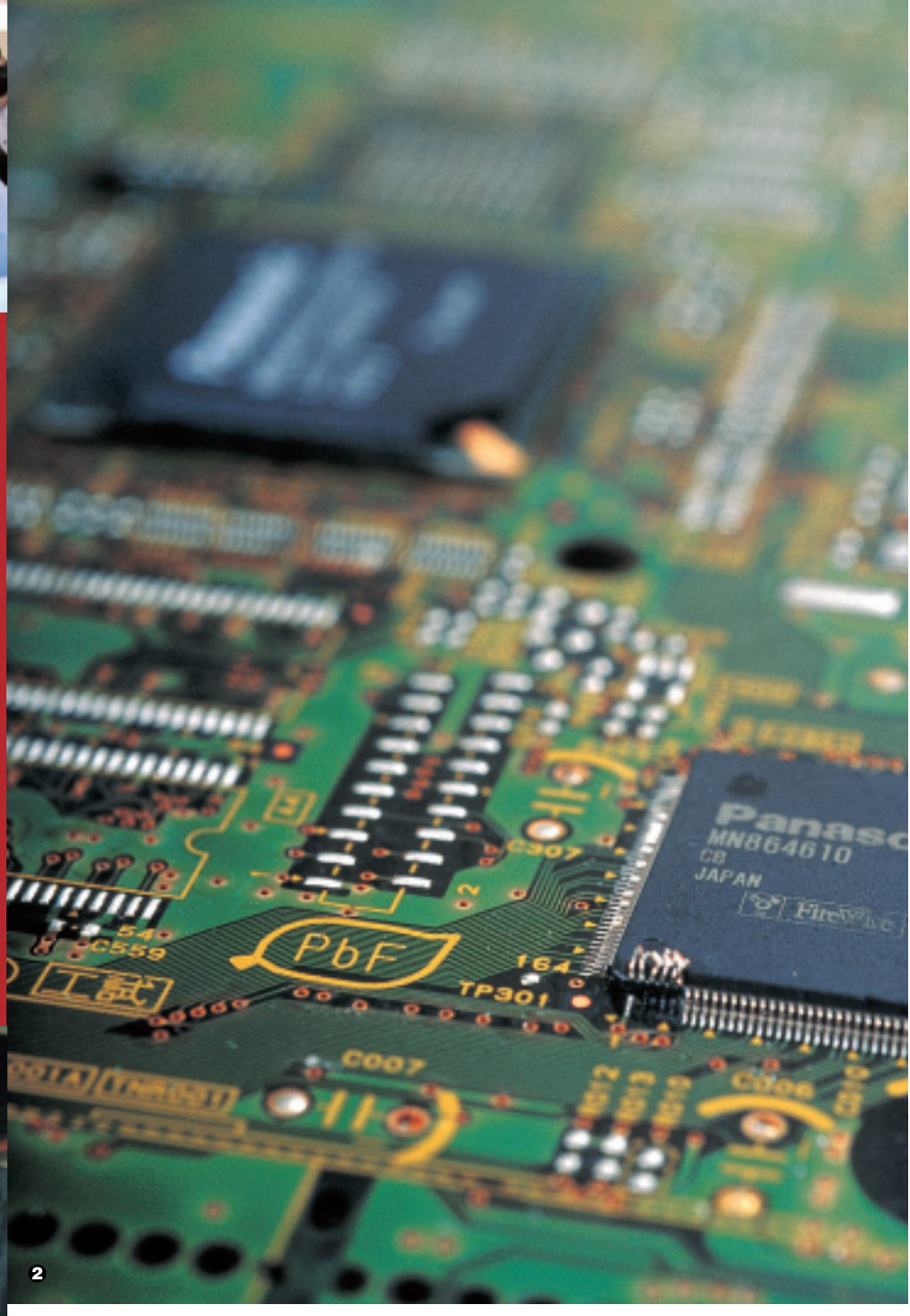
Yasuji Kawashima took the initiative in introducing lead-free solder at manufacturing bases throughout the world. He has traveled to 14 nations and done everything by himself without an interpreter. As he describes it, "You have to show them by doing it yourself. First I demonstrate, then I have the local staff try it. If they make mistakes, I show them how to do it correctly. That's the fastest way." He adds that verbal instructions are never enough to give confidence.

Local employees worry most of all that they are going to damage the machinery. Kawashima tells them, "If there's any damage, I'll take all the responsibility." With 27 years of experience, this "solder expert" can take care of any equipment problem. In fact, he has been known to work all night with local staff members to fix damaged machinery if any. Local employees are capable of fixing it next time without assistance.



With global-wide implementation complete, Panasonic do Amazonia ltda. (PAM) hosts a ceremony marking 100% introduction.





❶ A Lead-free Soldering Techno-School teaches lead-free soldering to partner firms.
❷ The "PbF" mark on the board signifies that it is lead-free (Pb = lead, F = free).
❸ Newspapers extensively cover a ceremony honoring the first introduction outside of Japan (at Matsushita Electric (U.K.) Ltd.).
❹ Nozzles eject melted solder. Expertise is required to shape and arrange the nozzles appropriately.

Inquiries flood in about advanced environmental technology

"I'd like a quote for 10 tons of lead-free solder." "Kindly send me your solder profile." Toshiaki Onishi received a barrage of questions like this after an advanced technologies exposition held for European cellular phone manufacturers. Today, the device business accounts for about 20% of Matsushita's total sales. This is a good example of the growing sensitivity to environmental-related technologies at the front line of industrial marketing and sales.

European environmental regulations have grown stricter in recent years. According to Onishi, "No company will survive unless it gains environmental awareness. In trade shows, our presentations highlight our environmentally conscious operations." Matsushita's mission is to respond rapidly to the world's environmental and other demands.

Techno Strategy Group,
Corporate Industrial Marketing
& Sales Division

Toshiaki Onishi

"I lived in Sweden for 11 years from 1972. The Swedish were already quite concerned about the environment, unlike Japan at the time."

Treasure Hunting

Highlights 2002

New Treasures from Old

Matsushita Eco Technology Center (METEC)

METEC's R&D lab dismantles products in development to test their recyclability.

President,
Matsushita Eco Technology Center Co., Ltd. (METEC)

Nobutaka Tsutsumi

"METEC owes its success to the efforts of its employees and the support of the local community. I believe that, in the future, waste will be regarded not as garbage but as a valuable 'urban resource.'"

The second floor of the plant has a viewing corridor that lets visitors see the whole factory.

What do you see in the photo above? Just another factory? This is actually an 'unfactory,' or, more accurately, a Matsushita recycling plant. True, it looks exactly like a state-of-the-art production facility: nothing like a typical recycling plant. METEC is redefining the concept of the recycling plant.

Matsushita Eco Technology Center Co., Ltd. (METEC) began operations in April 2001 and has already attracted more than 18,000 visitors. As required by Japan's Law for Recycling of Specified Kinds of Home Appliances, METEC dismantles TVs, washing machines, air conditioners, and refrigerators and sorts materials to be used again.

President Nobutaka Tsutsumi says, "We want people to see what we do. That helps them understand what recycling is all about."

Tsutsumi continues, "We built a viewing corridor overlooking all the lines. We make constant improvements to make visits even more interesting. In one display, we stacked up 190 beer cans to show how much aluminum can be recovered from just one air conditioner." METEC's openness inspires confidence among local citizens, and employees feel proud of working in such a highly regarded place. METEC is gaining a good reputation for its progressive facilities and draws visitors from Western countries and elsewhere. The Chinese newspaper People's Daily has given it extensive coverage.

METEC's ambitious goal is to achieve a "from products to products" cycle, aiming at creating a sustainable economy. The slogan is "Treasure Hunting." The plant is developing new recycling technologies that increase the resources recovered, and feeding back the expertise they gain to product development. Tsutsumi comments, "Product development engineers themselves are dismantling products to learn which designs are easiest to recycle. There is even a '3R Awareness Room' for bringing new ideas to light. The waste electronics we process are not garbage: they're a mountain of resources. That is why we call it Treasure Hunting. This is a truly fascinating job."

In FY'02, METEC recycled around 640,000 home appliances, in other words, about 1,700 units per day. At METEC, resources recovered from end-of-life appliances are used to make new models in the same product category. This is a place where you can see the dream of a sustainable society coming true.

(Related article: p.69)

These 190 beer cans show how much aluminum can be recycled from a single air conditioner.

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❶❷❸ Waste appliances are stacked in an orderly way prior to dismantling.
❹❺❻ TVs are carefully taken apart by hand. CRTs are separated into panel glass and funnel glass.
❼❽ Condensers used in washing machines are removed and the machine units are then crushed.
❾❿ CFC/HFC refrigerant is carefully removed from refrigerators and sent to specialized agents for proper treatment.
⓫ A large signboard is hung on the plant's wall, reminding staff of the slogan: "Treasure Hunting - from products to products."
⓬⓭ CFC/HFC refrigerant is also removed from air conditioners and treated properly by specialized agents.
⓮ Silver blocks of compressed aluminum once is heat exchangers used in air conditioners.
⓯⓰⓱ Separated and recovered materials like glass and metals are the products of 'unfactory' METEC.

URL **Matsushita Eco Technology Center Co., Ltd.**
matsushita.co.jp/environment/metec/
(Japanese only)

URL **METEC KIDS**
matsushita.co.jp/environment/metec/kids/
(Japanese only)

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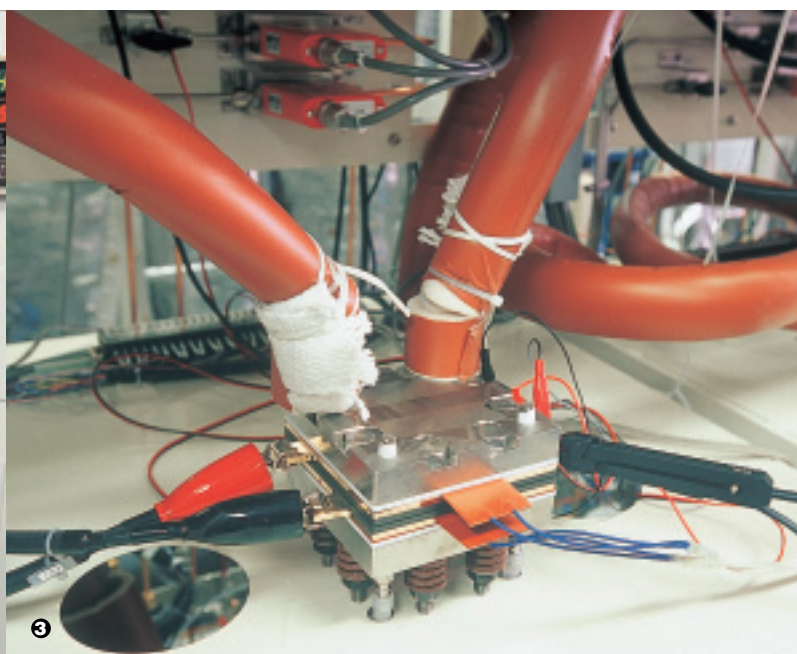
Fuel Cell Cogenera


❷


❸

Highlights 2002

The 40,000-Hour Endurance Test

Fuel Cell Cogeneration Systems

FC Development Office,
Living Environment Development Center
Shinsuke Takeguchi

"My happiest moment is when my work turns out just as I hoped."

As Shinsuke Takeguchi of the FC Development Office sees it, 40,000 hours would mean a life of about 10 years, running 10 hours a day, 365 days a year. Takeguchi has been working intensively with fuel cells since 1999. Ten years is about the normal life of a home appliance, but have we reached that practical phase with fuel cell cogeneration systems?

❶ The mark "FC" standing for the fuel cell is attached to the system unit.
❷ Engineers use this fuel cell stack endurance tester.
❸ The stack of silver rectangles is the heart of the fuel cell. Hydrogen and oxygen are fed in through large pipes.

tion Systems

Takeguchi has just installed another battery stack in the endurance tester. The stack is the main part of the fuel cell, where hydrogen and oxygen react with each other. A long line of machines is testing stacks and the system as a whole. Takeguchi says, “We’ve come up with some great stacks in the past year. New development takes place in three stages. In the first stage, we assure the required output. Now, we’re in the second stage, which aims at reaching a sufficient level of endurance, and that’s what we’re testing now. The final stage is to bring the cost down.” Takeguchi takes pride in working in the development of fuel cells, an ideal energy source.

The principle behind fuel cells is very simple. Fuel cells use the reaction between hydrogen and oxygen to produce water and electricity; this is electrolysis in reverse. The technology has lots of benefits. For example, it works efficiently and can decentralize power generation. Various fuels can be used depending on how the hydrogen is harvested. Fuel cells are regarded as essential technology for achieving an energy recycling-oriented society.

Matsushita President Kunio Nakamura endorses fuel cell technology, saying, “I’d really like to make this successful as Matsushita’s mission.” A fuel cell system for home use, now under development, is set to be launched at the end of FY’04. Fully aware of the fact that the technology is likely to be the foundation of the world’s future energy infrastructure, Matsushita’s rivals are also stepping up development efforts in a bid to ensure their survival in the market, which has triggered more intense competition. Because most development-related information is confidential, the laboratory is filled with tension. The lab is also very cautious about providing photos, fearing that even one look at the appearance of stacks can reveal know-how.

Verification tests are now taking place at ordinary residences. From the outside, the system looks rather like the outdoor unit of an air conditioner. It won’t be long before you'll have one at your home.

(Related article: p.46)

❹ Pipes lining the lab walls carry hydrogen and oxygen to the testing system. Hydrogen comes through the red pipe.
❺ Seen from behind, the testing systems are covered with hydrogen and oxygen pipes and other equipment.
❻ A fuel cell system (foreground) and hot water tank (right background) are undergoing verification tests.

Highlights 2002

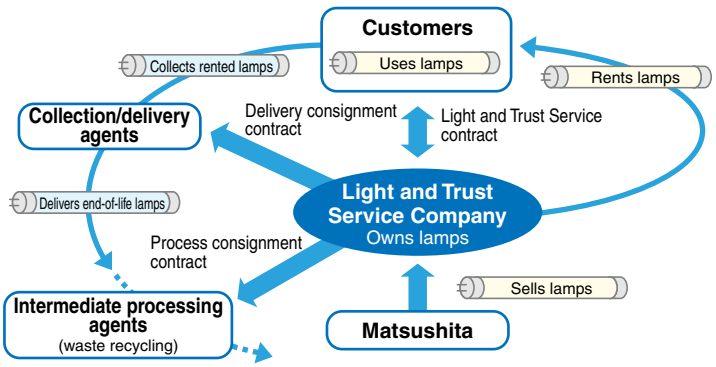
What's He Selling?

Light and Trust Service

Energy Solution Service Group, Customer Development Center, Corporate Electrical Supplies Sales Division

Masatoshi Miyaki

"I like the name 'Light and Trust.' It is so easy to understand."



Commenting on the new fluorescent lamp rental business, Masatoshi Miyaki says, "I like this because it's so unusual for Matsushita." Begun in April 2002, the Light and Trust Service has been a sensation in the mass media, and the number of inquiries far exceeded expectations. He says, "I knew it was going to be a smash hit. We already have contracts with 80 corporate customers." Contracts are now being drawn up with another 260 firms.

Under the Japanese Waste Management and Public Cleansing Law, factories and offices are obliged to bear the responsibility for correctly disposing of their end-of-life lamps. Violators are penalized. Users have to be particularly sure to dispose of fluorescent lamps properly because they contain small amounts of mercury.

Miyaki explains, "This is the advantage of the service: The Light and Trust Service Company owns the lamps, so the user does not have to worry about discarding them or keeping a manifest. The service company takes all the responsibility for collecting end-of-life lamps for recycling. Customers can cut their costs by 15 to 20% and no longer

Miyaki advises a client to clean his lamps' reflective panels regularly to save energy.

New Business Model

Although Matsushita is known as a manufacturer, not all of its businesses sell objects. Their "Light and Trust Service"sells light instead of lamps. Masatoshi Miyaki, at the Corporate Electrical Supplies Sales Division, devised this business prioritizing customers' needs. Miyaki is an unconventional thinker who tackled the setting up of an "un-Matsushita-like" business.

need to bother with managing and ordering lamps. The system provides ISO 14001-certified companies with substantial benefits."

The system has more advantages. According to Miyaki: "This gives Matsushita the benefit of building long-term relationships with customers. Providing a "software" service, namely light, helps us gain customers' confidence and trust. As a result, we can enjoy a synergy effect that boosts our "hardware" sales of environmental equipment. It's a win-win relationship in the best sense of the word."

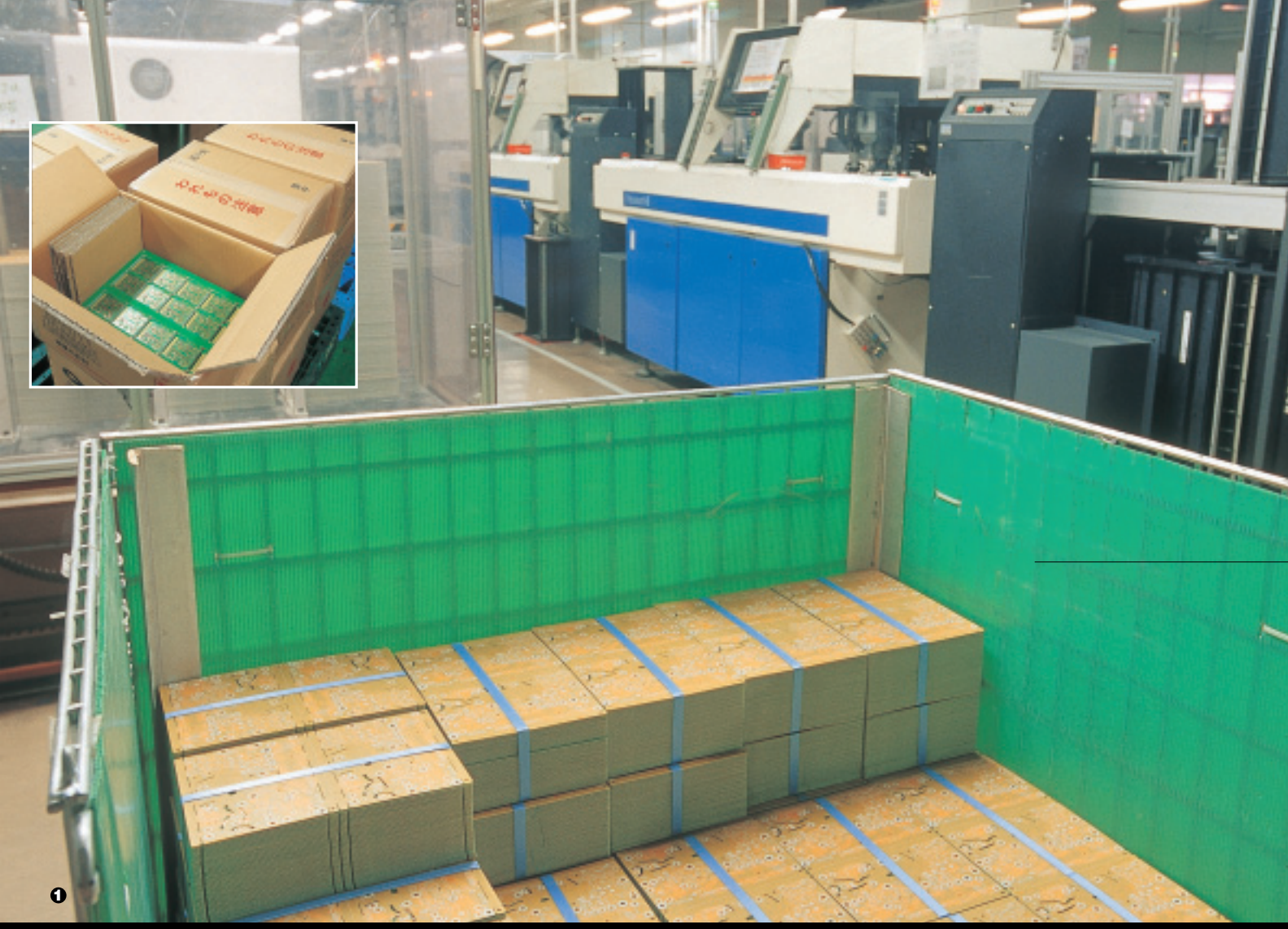
This is a business model that will gain momentum as environmental regulations become stricter. Miyaki adds, "I myself believe that we are heading down the right path in concert with the trend of 'have-not management,' which outsources necessary functions. Environment is one of the key factors for Matsushita. We would like to develop a new sustainable business model that will strike a chord with our stakeholders, thereby encouraging our society to raise its environmental consciousness."

(Related article: p.46)

Trump card for zero emissions

"Just one look and I knew this would be interesting," says Hiromasa Yagishita of Kansai Paint Co., Ltd. "This isn't just an operations improvement. It's a revolution." The idea of the Light and Trust Service appeals to Yagishita, because lamps arrive when required. "We're working on zero emissions, so it's really convenient that they collect our lamps. It also makes recordkeeping very easy." Kansai Paint is now planning to adopt it at all its sites. This growing service will further benefit customers, Matsushita, and, most of all, the global environment.

Members of
Kansai Paint's
Product Quality & Environment Division:
Hiromasa Yagishita,
General Manager
(right)
Jun Maeda, Manager
(center)
Mitsuo Tomioka, Manager
(left)



❶

Highlights 2002

The Unwanted Factory Product

Achieve Zero Waste Emissions

❹

❷

❸

Zero Emission

❶ In the past, 400 boards were packed into one cardboard box. Now, 13,200 are supplied at one time in “bare packaging.”

❷ Screws are sold in bulk. Scoops are used to take the amount needed and the quantity is calculated by weight.

❸ Copper coils are also sold in “bare packaging.”

❹ Cardboard is used in place of non-recyclable foam trays to deliver the transformer cores used in power supply units. Having suppliers place their products in these trays reduces packaging processes. Best of all, the trays can be used again and again and finally recycled.

Purchasing Department,
Nara Business Unit, Cooking Systems Division,
Matsushita Home Appliances Company

Yoshio Nishigaki

"Our environmental efforts promoted across the Nara Business Unit under the initiative of plant superintendents have yielded great outcomes."

New products carrying the Panasonic or National logo are the "face" of Matsushita, but factory shipments contain more than just products. They also include waste. Matsushita has committed itself to achieving zero emissions of waste. They want to ensure honest management with respect to waste, that is, the downside of manufacturing operations.

Definition of zero emissions of waste
Recycling rate: 98% or more

On August 2, 2000, Matsushita's Corporate Environmental Affairs Division issued a notice to Environmental Officers at Matsushita's manufacturing sites in Japan. The notice stated that their ultimate environmental goal is to cut waste landfilled as close as possible to zero by the end of FY'02, that is, to achieve at least a recycling rate of 98%. The recycling rate for Matsushita overall in FY'99 was 94%. Improving another 4% out of the remainder was a tough hurdle to clear, like wringing water out of an almost dry towel. But Matsushita delivered on its promise, boosting its recycling rate to 95.9% in FY'00, 97.6% in FY'01 and finally 98.2% in FY'02. It was the radical reform promoted on shop floors that helped Matsushita fulfill its commitment.

Yoshio Nishigaki at the Cooking Systems Division is proud that his workplace is "paying its own way." Nishigaki led a waste reduction project at the microwave oven production site. Actually the plant really is "paying its own way," since it's slashed its waste processing costs from 33 million yen in FY'98 to 7.4 million yen in FY'02. The effort not only addressed how to sort out waste but also how to keep sources of waste from getting inside the plant in the first place.

First, the team collected the waste from all the production lines. Their analysis revealed that logistics and packaging accounted for 70% of all waste. Now they knew what to focus on. The project members put waste on display just as it was for half a year. Nishigaki adds, "We put it where customers could see it. That pricked the employees' pride and gave them a sense of urgency. We encouraged our suppliers to take a look at the displayed waste and called for their cooperation in eliminating it."

This idea has started to bear fruit. In the past, paper phenol circuit boards arrived in cardboard boxes containing 400 boards each. Now they come in units of 13,200 boards in "bare packaging." Nishigaki notes, "Some people thought that bare boards would be prone to cracks and other defects. Ironically, the opposite was true: we achieved zero defects." A cardboard box full of boards weighed approximately 10 kg. Staff members were able to carry these heavy boxes by hand but did not always handle the boxes carefully enough: they sometimes dropped them. A container of 13,200 boards, however, weighs a third of a ton and is far too heavy to carry by hand. Only a mechanical lift can pick it up, so the boards are handled carefully. As Nishigaki puts it, "What is needed is the confidence to take up the challenge."

Matsushita has continued to put a whole series of other measures into effect and as a result achieved its target 98% recycling rate a year ahead of schedule. Nishigaki concludes, "There's no waste in the natural world. 'Waste' is just a word we give to the things people don't want."

(Related article: p.61)

Each production line is assigned an address and materials are delivered directly to it. The sign in the upper left of the photo says "Line A;" the line is behind it.

Warehouse built next to plant

Under the old delivery system, suppliers once delivered materials to a separate warehouse for storage, then supplied the plant with the necessary quantities of materials when needed. Nishigaki was inspired to build a new warehouse (Nara Consignment Inventory System) right next to the factory. This has improved efficiency and created a "win-win" relationship because Matsushita can respond precisely to fluctuations in production, and suppliers can deliver materials in bulk. Logistical reforms intended to achieve zero emissions are evolving into larger-scale steps that also boost business efficiency.

Highlights 2002

Breakthrough that Respects Individuality

Improve Management Quality

Creative Evolution

Conventional wisdom holds that defects are unavoidable when products are mass produced. However, a recent change at a Matsushita plant that builds speakers for automobiles has proved that this is no longer correct. Common sense appears to be utterly defied. What drastic reforms did they put into practice?

Hiroshi Wada at the Manufacturing Engineering Group admits he was surprised when defects started to disappear. “Achievement of zero defects was a result that far surpassed our original target. I thought at best we would cut defects by half.” Three years ago, the Acoustic Products Business Unit switched to a cell production method in which small groups of operators complete products. Achieving zero defects was not the intention of the change, but a kind of miracle occurred. “The introduction of the cell production method aimed at flexible production to respond adequately to customers’ needs,” says Wada, “but once we started we surpassed our targets and got to zero defects.”

He believes what truly undermined the conventional wisdom was the concept of “building upon individual motivation.” When the cell production system was introduced, management simply asked for volunteers to work in it. Unlike a top-down order, this approach motivated operators.

Chihiro Nakanishi and Keiko Higashide joined the list of participants from the Manufacturing Engineering Group.

In a cell, each person performs a variety of operations. Their brisk and practiced motions are much closer to our idea of “craftspersons.”

Manufacturing Engineering Group, Acoustic Products Business Unit,
Automotive Device Company, Matsushita Electronic Components Co., Ltd.

Keiko Higashide

"Before I didn't even know the names of the tools. But now I can fine-tune the equipment by myself."

Chihiro Nakanishi

"I only did a single operation when working on the production line, but now I'm doing quite a few."

Unlike a production line with 15 people working side by side, only three people work in a cell. For one thing, this means each operator owns a third of the responsibility for building one speaker. The new system did not make the actual work easier. When machinery problems occur, the team members now deal with it personally. As Higashide puts it, "Previously, machine adjustments were considered a man's job. I wasn't happy about this. Now I can do anything I want but I also have to take responsibility. Still, it's nice to work on these things until I'm completely satisfied with the result." She clearly enjoys the added responsibility. Nakanishi, who has always enjoyed tinkering with machines, adds, "When something goes wrong and I don't know what it is, I like to poke around for answers." When operators are motivated, they naturally begin to think these things out for themselves. This is the incentive that makes zero defects possible. Presently there are teams that have had an amazing zero defect record for six months, or 180,000 units produced defect-free. These cell operators held an internal forum to present their efforts to other employees, who responded favorably. Even Matsushita President Nakamura himself emailed them to say how impressed he was.

The plant includes a listening post. Some operator says, "The first time I heard music over speakers we'd built I was utterly moved. Before, they were just things to me, but when I listened to music on them, I realized for the first time that they were speakers." Their job is to produce speakers, but what they're really doing is to create sound, more specifically the "sound of excitement."

The unit has taken the necessary steps to improve in its management quality, but these efforts are still under development. They have created a basis for a new awareness of human needs in the workplace. The next step for the future is to implement a form of management that will build added value on this foundation. That is the task of the directors and managers of the business unit. "Building upon individual motivation," which releases amazing energy and enthusiasm, is playing an important role in shifting the corporate paradigm.

Employees suggested installing this listening post, where they can appreciate their own work by listening to music over the speakers they build.

An open-minded culture is not built overnight. It evolves as the concept of "building upon individual motivation" gradually takes hold.

"Catch My Finger Project"

Under the Catch My Finger Project, which is the Japanese way for seeking project supporters, Kumi Tanimoto proposed her "Transform" Project to change the work environment from the customer's perspective, she enlisted nine partners. She says, "I was happy to find out that our company has such valuable human resources, who voluntarily participated in my project though it wouldn't add to their benefits." This corporate culture of freedom, in which employees' ideas and initiatives transform the workplace, helps to develop human resources.

From left to right:
Kumi Tanimoto (Planning Group)
Tetsuya Mouri (AV Multimedia Products Engineering Group)
Hideki Kusatani (Manufacturing Engineering Group)

1

Highlights 2002

Confrontation leads to Dialogue

The Second Environmental Stakeholders Meeting

2

"The activists are invading!" A few years ago, any visit by environmental NGO members might have been viewed that way. However, the situation was quite different on October 1, 2002. This was the day when five Japanese major NGOs marched into Matsushita Refrigeration Company's Kusatsu Site.

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with Stakeholders

"The latest insulating materials are this thin! Amazing!"
Such were the comments overheard at an Environmental Stakeholders Meeting to which Matsushita had invited NGOs to discuss new partnerships on the theme of natural fluid (HC) refrigerators, which do not use CFC/HFC refrigerants. Their representatives learned about Matsushita's environmental initiatives through a factory tour and then sat down to a roundtable conference with development and production staff.

Too often in the past NGOs and companies in the industry worked against each other. Corporations have had the image of destroyers of the environment for their profit and NGOs have regarded it as their mission to condemn them. Actually, the subject of HC refrigerators was one of these confrontations.

HC refrigerators, a technology using HC refrigerant developed in Europe in 1992, contain no CFCs or HFC refrigerants and so do not damage the ozone layer or promote global warming. Greenpeace Japan implemented a large-scale promotion with the goal of making this technology available in Japan. In December 1999, Greenpeace activists stood outside the entrance to Matsushita's Head Office, handing out fliers condemning Matsushita's stance.

Although the two parties seemed to be irreconcilable enemies, they in fact shared the hope of "supplying society with good products." As a result of repeated dialogues, together they learned about the technical difficulties that were hampering the start of an HC refrigerator in Japan and what's more, about the lack of relevant safety standards. Matsushita encouraged other manufacturers in the industry to get involved and finally succeeded, thanks to the assistance of the Japan Electrical Manufacturers' Association (JEMA).

At the roundtable meeting, NGO members asked tough questions: "What are your plans for developing CFC/HFC-free air conditioners?" "How safe are HC refrigerators during the recycling stage?" Their opinions were important not only to Matsushita but also to society as a whole. Some have suggested fostering closer links with NGOs by regarding such groups as representatives of citizens that are seeking social well-being. Matsushita believes NGOs and corporations can establish constructive partnerships that contribute to society because each has a different approach to serving the interests of society and its citizens.

The Second Environmental Stakeholders Meeting

Date: 12:30 – 16:40, October 1, 2002

Place: Kusatsu Site, Matsushita Refrigeration Company

Theme: "A New Partnership between NGOs and Industry"

Participants:
Greenpeace Japan
The Network "Earth Village"
WWF Japan
Kiko Network
A SEED Japan
Matsushita Electric Group


❶Environmentalists gather at Matsushita Refrigeration Company's Kusatsu Site.
❷Technological issues and their solutions to developing natural fluid (HC) refrigerators are explained using displays.
❸Participants listen attentively to each explanation.
❹HC refrigerators are put on display in the meeting room.

Extracts of Matsushita's answers at the roundtable meeting

- Regarding natural fluid air conditioners, at this time HFC refrigerants present the least environmental impact across their life cycle when safety and other various conditions are taken into account. Matsushita will continue R&D efforts.
- Matsushita would like to put a fully operational recycling system in place by the time recycling of the natural fluid (HC) refrigerators is in full swing. Industry groups are now working on the formulation of guidelines.

Learning Together

Highlights 2002

The Same Old Excuse: Eco Products Don't Sell?

The Third Environmental Stakeholders Meeting

❶ NACS consultants present their findings in the second-floor Sky Bridge at the Panasonic Center.
❷ NACS consultants examine the Panasonic Center's "Green Products Corner."
❸ Products on display undergo a close inspection by NACS consultants.
❹ The meeting with NACS starts to bog down as more and more comments are made.
❺ Participants discuss catalogs for natural fluid (HC) refrigerators.
❻ Tatsumi, leaning forward, answers questions.
❼ Tatsumi responds cheerfully even to critical remarks.
❽ Participants discuss necessary environmental information on product package.

"Matsushita's refrigerator catalog contains hardly any of the information we'd like to see, and absolutely nothing about the environmental costs of transportation and packaging." Representatives from Matsushita sat in uncomfortable silence while Kikuko Tatsumi and Kimie Tsunoda of the Nippon Association of Consumer Specialists (NACS) listed the findings of their survey. The group's survey of environmental information provided in Matsushita catalogs and packaging opened a debate.

The NACS representatives noted that while the catalog claimed that Matsushita refrigerators consumed markedly less energy, it did not explain why. As the debate unfolded, one fact became apparent: although Matsushita has a wealth of information on safety and environmental impact, it was not being successfully conveyed to consumers or Matsushita failed to convey that information to consumers.

One issue after another spilled out as the discussion grew more heated. Finally, no time was left and still the meeting yielded no concrete solutions. The participants became aware of several things, however. For one, Matsushita catalogs had put their focus on product performance without any thought of mentioning the environment. Matsushita became aware of the need to make consumers understand that Matsushita has focused on reducing environmental impact during usage because they have an accurate understanding of the life of refrigerators.


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Conventional wisdom says that environmentally friendly products do not sell because they are more expensive. However, times are changing. Now manufacturers need to change. Matsushita invited the NACS consumer group to join an Environmental Stakeholders Meeting held on April 2, 2003 to discuss environmental information required on their products.

Tatsumi and Tsunoda did have some encouraging news. “Matsushita has been improving their environmental advertising over the past 10 years. But because it prioritized raising public awareness of Matsushita’s brand image, it did not do much for sales. In the last few years, however, consumer consciousness has been on the rise. We think an environmental message would be effective now. Matsushita should take a bolder approach and say, ‘Why aren’t you buying Green?’”

When the meeting came to an end, Yuko Kida of the Corporate Environmental Affairs Division commented, “Communication is really a tricky thing. If we just say ‘This is how it is,’ it doesn’t mean the consumer will get the message. We need to put ourselves in their shoes. We have to share the consumer’s problems. That’s what’s essential for finding fundamental solutions.” Matsushita hopes that you will watch them closely as they tap into the strengths of consumers and experts to sustain their trial-and-error efforts. We are entering an era when eco-friendly products do sell because they are eco-friendly. Matsushita believes the time is coming when only eco-friendly products will sell.

(Related article: p. 70)

The Third Environmental Stakeholders Meeting
Date: 10:00 – 13:00, April 2, 2003
Place: Sky Bridge on the second floor of the Panasonic Center
Theme: “How Can Manufacturers Best Convey Environmental Information about their Products?”
Participants:
Nippon Association of Consumer Specialists (NACS)
Matsushita Electric Group

URL **N’s Eco Project**
national.jp/eco/ (Japanese only)

NACS
Kikuko Tatsumi

“Better environmental labeling lets consumers choose better products and will encourage better business. I look forward to enhancing dialogues that ultimately contribute to the development of a sustainable society.”

NACS
Kimie Tsunoda

“Manufacturers need to devise ways of presenting their case so that even people who aren’t interested in the environment can easily see how their choice of refrigerators has an impact on it.”


8

Communication Group,
Corporate Marketing Division for National Brand
Junichiro Akiyoshi

“We are completing a full line of products aiming at gaining the No. 1 position in energy conservation. Matsushita is starting the N’s Eco Project in June under the themes of ecology and economy.”

The best way to describe CO_2 emissions

Emission levels of carbon dioxide, or CO_2, are a good indicator of global warming, but the participants in this meeting argued how best to express those emissions. Among their comments: “I hear the term kg-CO_2, but it’s hard to visualize.” “CO_2 is a gas, so wouldn’t it be more logical to measure its bulk than its weight?” Given these misunderstandings, what is the best way to express the amount of carbon dioxide emissions? Matsushita welcomes your suggestions: just use the Communication Sheet.

Love

Original “eco-bags” with designs created by employees and their families

the

Matsushita’s Love the Earth Citizens’ Campaign is a novel project, different from most corporate activities.
For one thing, it is a corporate effort that actively encourages a citizen’s action.
Questions arise from the public:
“What is a citizen’s action led by a corporation like Matsushita?”
“What exactly are they trying to do?”
“Why are they promoting this type of action?”

Highlights 2002

Citizen Action Transcends Corporate Walls

Love the Earth Citizens’ Campaign




Earth

Love the Earth Citizens’ Campaign Promotion Committee, Corporate Environmental Affairs Division

Sawako Kaneshiro

“I’d be happy to see our Love the Earth Citizens’ Campaign spread out into society and get more companies involved in helping employees and their families ‘reform their lifestyles.’”

A program for tracking household energy consumption by the “Environmental Household Budget Ledger” marks its sixth year.

"Matsushita has a philosophy: develop people before making products," says Sawako Kaneshiro at the Matsushita's Love the Earth Citizens' Campaign Promotion Committee. "That's the basis for this campaign."

The Love the Earth Citizens' Campaign traces its origin to an Environment Conference held in October 1997. Executive Officers have stated that creating Green products in the true sense of the word requires a Green mindset. President (now Chairman) Yoichi Morishita agreed, saying, "Members of the company are also members of families and society, and as such I would hope they will be citizens that are conscious of the need to protect the environment." An on-the-spot decision was made to kick off the campaign.

In February 1998, the campaign was launched with the goal of "raising environmental awareness and transforming lifestyles." Kaneshiro notes that the "Love the Earth Citizens' Campaign involves not only Matsushita's employees but also their families. Supported by the labor union, this is an unprecedentedly unique program that's different from conventional in-house projects."

Major accomplishments include holding the environmental symposium, enhancing the Environmental Household Budget Ledger, the "eco-bag" campaign, and implementing other environmental preservation programs for local communities in collaboration with the labor union.

Chairman Yoichi Morishita addresses a Conference on "Wa-no-Kuni-Kurashi" hosted by the Ministry of the Environment.
"Reducing CO_2 emissions is an urgent issue. Industry and families have to work together to achieve it."

Kazuo Sasaki, Director of Yaesu Building Management Office, Honda Motor Co., Ltd. and leader of a Rural Forest Campaign
"This natural ecosystem has different tree species coexisting with each other."

Members of five workplaces present their efforts.

Participants in a program in Yokohama thin trees and make handcrafted goods.

In FY'02, the committees created an LE personnel database. They began a survey of 10,000 employees to gauge their level of environmental awareness. The results are being used to identify potential leaders and recruit them for regional environmental training and volunteer activities. As Kaneshiro says, "We want to find people capable of leading environmental programs and then create a 'network of environmental experts.'"

Networking is one other theme the Love the Earth Citizens' Campaign addresses. "It is exciting that even our competitors have offered to collaborate with us," says Kaneshiro. They have conferred with several companies to trade know-how on how to raise environmental awareness. Networks that are linked by an interest in the environment are expanding across corporate borders. "Everyone loves our planet," says Kaneshiro. "Efforts to 'love the Earth' can be shared not only by the Matsushita Electric Group employees but also by people around the world as well. Our ultimate aim is to break through all corporate walls and spread our networks regionally and globally."

The novelty of the program has led to more requests for lectures and interviews than Kaneshiro can keep up with. By turning that novelty into strength, her efforts are expanding the field of her activities.

(Related article: p. 81)

Environmental representatives from Matsushita, Tokyo Gas, NEC, Tokyo Electric, and others exchange opinions in a study session that transcends corporate boundaries.

Global Highlights

Every nation in the world is the same in one respect:
each desires to live in peace and prosperity.
Still, each nation has its unique natural environment, history, culture,
form of government, and economic development pattern.
Matsushita is a global company doing business in 170 nations and regions around the world.
Our basic principle on international business is that
we should recognize the differences among nations and regions
and help each one to develop prosperously.

Matsushita's View of International Business

1. We will operate our business in such a way that we are welcomed by the host country and we will carry out our business activities honoring local customs.
2. We will promote business in accordance with the host country's policies. Also, we will make continuous efforts to have the host country understand the management philosophy of our company.
3. We will manufacture products and provide services that are competitive in international markets in terms of quality, performance, and cost, so that we can provide customers with added value.
4. We will promote the global transfer and exchange of technology under a worldwide research and development system.
5. We will practice autonomous and responsible management, build up a strong management structure and generate our own capital for the expansion of our business.
6. We will manage our overseas companies with local employees, and will make every effort to develop the skills of our local employees for their advancement.

Global Highlights

Americas

Matsushita Electric Corporation of America

Starting about 45 years ago with its first American facility, a small New York City sales office, Matsushita Electric Corporation of America (MECA) now manufactures and sells various electronics products and components under the Panasonic brand name in 15 countries throughout the Americas region.
This brief overview of our activities demonstrates our sense of social responsibility, mainly at MECA, the regional headquarters of our North American operation, as well as environmental activities at three manufacturing companies located in the Americas.

Executive's Message

I think about the potential fragility of our environment each time I take a trip on an airplane. In just a few moments after take-off, a jet aircraft transports us to an environment of subzero temperatures that is completely uninhabitable. One can only marvel at how a thin, transparent atmosphere can make such a difference and be reminded that we must understand and maintain the delicate balance of nature.
We are committed to playing a responsible leadership role in making our company and our products environmentally sustainable — to bring environmental concerns to bear on our products throughout their life cycle.

Dr. Paul Liao, Vice President and Chief Technology Officer, MECA

Corporate Profile and Economic Performance

■ **Matsushita Electric Corporation of America (MECA)**
Location: One Panasonic Way, Secaucus, NJ 07094 U.S.A.
Foundation: September 17, 1959
Management: Hideaki Iwatani, Chairman & CEO
Area of operations: USA, Canada and Mexico
Sales: $8.6 billion (consolidated North American operations)
Employees: Approximately 21,000 (consolidated North American operations)
Major products: Consumer electronics, system devices, electronic components and materials, professional audio and video equipment

Corporate Profile

MECA was established in New York in 1959 and moved its headquarters to Secaucus, New Jersey in 1975. Originally started with $4 million in annual sales, MECA has grown to $8.6 billion in sales and continues to expand. The company offers a wide range of products from consumer electronics, telecommunication and IT, to professional and industrial equipment and components for various customers, including major electronics dealers and companies listed in the Fortune 500. MECA not only sells electronics products in the region but also manufactures TVs, telephones and other electronics. It also conducts advanced R&D activities at approximately 150 business locations in North America.

URL **Matsushita Electric Corporation of America (MECA)**
www.panasonic.com

Social Responsibility

Diversity

Several months throughout the year are devoted to celebrating the rich cultural heritage that can be found in the United States. MECA employees, working with the company's Equal Employment Opportunity Department, develop a wide range of programs covering women's history, African-American history and culture, Hispanic heritage and other areas. These informative programs have included guest speakers, art displays, food tasting and performances and demonstrations.

Organized by MECA employees, fellow employees taste traditional Hispanic foods in the company cafeteria, as part of Hispanic Heritage Month.

Human by Design/Accessibility

Matsushita believes that everyone should be able to enjoy the benefits of our products. To achieve this goal, we endeavor to improve the accessibility, especially telecommunications products that can aid people with disabilities. The Consumer Electronics Association's Best of Innovations Award program for 2003 recognized Panasonic's KX-TG2258S digital cordless telephone in its new Accessibility category. The phone includes several innovative features such as Talking Caller ID and voice enhancer technology that assist people who are hearing or visually impaired.

Digital cordless telephone

URL **Working for accessibility**
www.panasonic.com/accessibility/

Beach Sweep

Sponsored by Clean Ocean Action and MECA, the bi-annual Beach Sweep promotes a cleaner ocean environment. Employee volunteers from MECA have participated for several years, collecting and analyzing trash and debris that have washed ashore. Other similar local projects have included the Hackensack River (NJ) clean-up.

Hackensack River (NJ) clean up

America Recycles Day

Each November 15, recycling becomes more than just an important, everyday practice of employees at MECA headquarters; it's the theme of a fair held in honor of the EPA's America Recycles Day. The fair features a recycling pledge contest and offers valuable information about recyclable materials and using recycled content materials in new products.

A display for America Recycles Day

Environmental Responsibility

The Matsushita Electric Group works to improve the environment by recycling products and conserving energy.

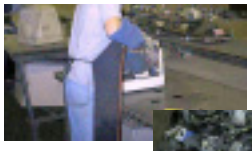
URL **On behalf of the environment**
www.panasonic.com/environment/

Electronics Recycling

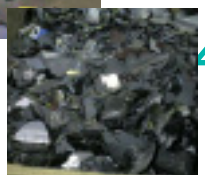
By working closely with government agencies and recycling companies, Panasonic has helped develop a model for recycling electronics products. Obsolete or unwanted televisions and other electronics products from households are accepted at collection events and programs held at various locations throughout the U.S. Those collected products are sent to our partner recyclers and processed properly. Creation of sustainable recycling systems for advanced products such as TVs requires developing applications and markets for the materials they contain. In FY'02 Panasonic achieved 10% post-consumer recycled content CRT glass in the funnels section of our CRTs manufactured at our Troy, OH facility. We are the first TV manufacturer in the U.S. to reach this goal.

■ **Product recycling**

1. Collection events
MECA sponsors collection events.



2. Recycling
Contractors use appropriate techniques.



3. CRTs
Glass is sorted into leaded and non-leaded material.

4. Glass manufacturing
The material is reused for glass.

5. New CRT glass
The glass contains 10% recycled material.

6. New TVs
The CRT glass is incorporated into a new TV.

7. TVs are used again.

eCycling Project

Since October 2001, Panasonic has participated in the EPA Region III eCycling Project, a pioneering program which encourages consumers, municipalities, retailers and electronics manufacturers to share in the overall responsibility of properly managing the disposal, reuse and recycling of obsolete or unwanted consumer electronic products. Forty-five collection events in 35 counties and cities took place in the year 2002.

EPA Plug-In To eCycling Campaign

Panasonic joined the EPA and a number of other companies to announce the Plug-In To eCycling program at the Consumer Electronics Show in Las Vegas in January 2003. Plug-In To eCycling, a national expansion of the above mentioned eCycling Project, is designed both to promote awareness of the need to recycle electronic products and provide opportunities to do so. Panasonic will help sponsor approximately 150 collection events, as well as promote Plug-In To eCycling.

Plug-In To eCycling logo

URL **EPA Plug-In To eCycling Campaign**
www.epa.gov/epaoswer/osw/conserve/plugin/

● Energy-efficient Products

Panasonic continually strives to raise awareness of the importance of energy efficiency and conservation by offering a wide range of Energy Star qualified products for consumer, business and industrial use. More than 455 Panasonic product models including audio and video products, cordless telephones, imaging and IT products, room air conditioners, ventilation fans, and compact fluorescent lamps meet or exceed Energy Star performance levels. Additionally, Panasonic's public outreach efforts have helped to instill a sense of the importance of energy conservation and raise awareness of energy efficiency.

DVD player
DVD-CV51

Energy Star logo

Energy Star poster

URL **Energy Star**
www.energystar.gov

● Toxic Release Inventory (TRI)

The U.S. government requires industries to collect data each year on the release and transfer of harmful substances specified by the Toxic Release Inventory (TRI) and to report the results to the EPA. MECA collects such data for the Matsushita Electric Group in America and uses its unique Facility Profiles to track and manage environmental performance.

A Facility Profile

● Environmental Performance Data

MECA

Category	Item		FY'02
Prevention of global warming	Power consumption	(1000kWh)	80,840
	City gas consumption	(kℓ)	2,159
	LPG consumption	(kℓ)	27
	Heavy oil consumption	(kℓ)	363
	Kerosene consumption	(kℓ)	0
	Energy consumption (crude oil equivalent)	(kℓ)	24,389
	Energy consumption (CO_2 emissions equivalent)	(t-CO_2)	63,494
Chemical substance management	Use	(t)	1
	Release/transfer	(t)	0
Waste reduction	Generation	(t)	5,129
	Recycling	(t)	3,955
	Final disposal	(t)	1,173
Water consumption	Water consumption	(m^3)	174,073

Awards

● WasteWise/Partner of the Year

In a ceremony held in October 2002 in Washington, D.C., the U.S. EPA honored Panasonic as a Partner of the Year in its WasteWise program. WasteWise, launched by the EPA in 1994, is a voluntary partnership program that provides guidance and recognition to the nearly 1,300 participating organizations working to find practical methods to reduce municipal solid waste. Panasonic was honored for its efforts in the WasteWise program's Electronics Challenge category.

Sharon Streicher, Vice President for Facilities Management at MECA, receives Partner of the Year Trophy.

● Energy Star Partner of the Year

For the fifth straight year, Panasonic has been awarded the prestigious Energy Star Partner of the Year Award presented by the U.S. EPA and the U.S. Department of Energy. The 2003 award was presented at a ceremony in Washington, D.C. in April. The award recognizes Panasonic's record of selling numerous energy-saving products and the fact that it has all types of audio and video products meeting Energy Star criteria. Panasonic is the sole consumer electronics manufacturer to receive the Energy Star Partner of the Year Award each of the past five years.

EPA Administrator Christine Todd Whitman (left) presents trophy to Robert Greenberg, Vice President of MECA

● EPA eCycling Project

In November 2002, the U.S. EPA honored Panasonic for its contributions to the EPA's eCycling Project.

Press conference and award ceremony sponsored by Pennsylvania-based recycler Envirocycle, Inc.

TOPICS in the Americas

● Matsushita Ultra-Tech. Battery Corporation of America MUTEC

MUTEC is striving to make the most advanced, environmentally friendly battery and production process. In FY'02, MUTEC changed the cleaning agent from naphtha to a biodegradable one, and anticipates conversion from a solvent-based carbon coating to a water-based coating process. While large amounts of industrial waste are disposed of in controlled landfills in the U.S., MUTEC has established many innovative ways to recycle its waste streams. Battery process waste is recycled into steel, while manganese dioxide and carbon graphite dust are used as filler for bricks and concrete. Though not always economically justifiable, top management realized the value of using resources effectively, enabling MUTEC to achieve an 80% recycling rate in FY'02. In FY'03, MUTEC is working to reduce its usage of xylene and advance the recycling of polyethylene packaging.

Greg King, MUTEC Assistant General Manager oversees environmental initiatives and compliance.

● Matsushita Display Devices Corporation of America MDDA

MDDA works continually to improve its environmental performance. Energy conservation at the factory is MDDA's most significant achievement. While maintaining production volume, the facility has been able to reduce its total electricity usage by 5% through precision control of its oven startup sequence and temperature.

The company is also trying to reuse as much of its material as possible. Defective CRTs from the production process are separated into their component subassemblies (panel, funnel, and mask-frame assembly), and reused wherever possible. Non-reusable parts are further separated into leaded (funnel) glass and non-leaded (panel) glass and metal (mask-frame assemblies) and sent to recyclers for raw material reuse.

MDDA also makes efficient use of its water resources. By installing a new high efficiency RO system to make de-ionized water, it reduced the discharge of water by 70%.

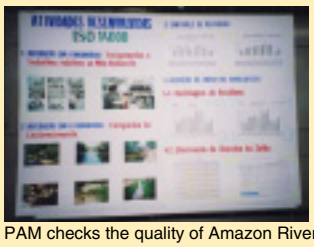
In 2003, MDDA will target further waste and energy reduction. Through the implementation of new technology, MDDA will lower the waste effluent from toluene strippers, and through the use of energy-efficient lighting and the initiation of a steam trap replacement program, it plans to lower plant energy usage.

Recycled glass containers and MDDA environmental staff members

● Panasonic da Amazonia S.A. PAM

PAM is committed to improving the quality of life in the community through reducing the environmental impact of its operations. Since 1999, the company has made a significant improvement in its logistics function. By sharing shipping containers with a neighboring manufacturer, it raised the loading ratio by nearly 20% in three years and reduced the use of containers by 300 units each year, while the company increased production during the period. In 2002, PAM started shifting from shipping products via truck to more environmentally friendly water transportation. Currently, more than 30% of its containers are shipped via water to the major markets of Brazil, such as Rio de Janeiro and Sao Paulo.

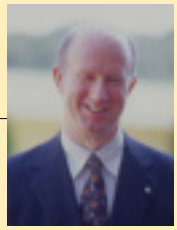
During Environmental Awareness Week, the company investigated the water quality of the Amazon River and discussed what it can do to maintain the precious environment of the Amazon.



PAM checks the quality of Amazon River water as part of an awareness-raising event.

A TV assembly line where the sorting and recovery of waste are practiced

David A. Thompson,
Corporate Environmental Department, MECA



"We will continue to work on electronic product recycling cooperatively with governments, recyclers and other manufacturers."

Europe

Matsushita Electric (U.K.) Ltd. / Panasonic AVC Networks Czech s.r.o.

Corporate Profile and Economic Performance

■ **Matsushita Electric (U.K.) Ltd. (MELUK)**

Location: Wyncliffe Road, Pentwyn Industrial Estate, Cardiff CF23 7XB, U.K.
Foundation: June 17, 1974
Management: Junro Nakamura, Managing Director
Market: All of Europe
Sales: £325 million
Employees: 1,049
Major products: Color TVs, microwave ovens, set top boxes, PCs for commercial use

■ **Panasonic AVC Networks Czech s.r.o. (PAVCCZ)**

Location: U Panasoniku 1, 320 84 Plzen, Czech Republic
Foundation: March 13, 1996
Management: Junro Nakamura, Managing Director
Tadanori Asahi, Vice President
Market: All of Europe
Sales: CZK 11,014 million
Employees: 1,668
Major products: Color TVs

● **Business Activities**

Today, two Matsushita plants develop and manufacture TVs for the European market: MELUK in the U.K. handles digital TVs and PAVCCZ in the Czech Republic analog TVs. PAVCCZ, first established to make smaller-screen models, now enhances its range of models to high-end. PAVCCZ receives product development support from MELUK, forging a parent-child relationship in the development and production of TVs. In addition to TVs, MELUK manufactures microwave ovens and set top boxes, assembles PCs, and installs language software. In FY'02, the company implemented a cell production method for set top boxes with the aim of achieving a small-lot production of a variety of products while improving space efficiency.

Europe, particularly in the western part, saw an increasing number of production bases in the 1980s. In the late 1990s, seeking to further step up production in response to a growing demand, the Matsushita Electric Group expanded its production bases to Eastern European countries where infrastructures improved. Since the dawn of a common EU currency in 1999, the EU nations have begun to function as a single market and the number of member nations is set to grow. Our report focuses on two companies developing and manufacturing TVs for the transforming markets of Europe.

PAVCCZ TV manufacturing line

Executive's Message

These days, environmentally conscious management is a must. In order for companies to survive, it is imperative that we achieve a competitive advantage in R&D, production, and costs to respond to social demands. Today, one of the focuses of social demands is the environment. The market judges our business ability by assessing how actively we develop environmentally conscious products and how quickly and steadily we bring them to market. Moreover, it is not enough to make the product itself eco-friendly. We also need to keep our factories running cleanly and be conscientious in our day-to-day production. I believe that if each employee looks after the factory, then the productivity will benefit and concerns for the environment will ensue.

Junro Nakamura, Managing Director, MELUK and PAVCCZ

As the first Japanese company operating in the city of Plzen, indeed in the entire Czech Republic, PAVCCZ is grateful for everything the citizens and government have done for us. We hope to do business in a way that shows our gratitude. The Czech Republic is well known for its beer and Bohemian glass; what an honor it would be for Panasonic TVs to be the next great product from this country. Environmental standards are very strict in Europe, and as the Czech Republic prepares to join the EU in 2004, it is enacting environmental laws and regulations to implement EU-level environmental standards. PAVCCZ will of course obey these laws and standards. What's more, I believe it's important to look to the future and ensure that the environment is an ongoing concern in our business practices.

Tadanori Asahi, Vice President, PAVCCZ

Global Highlights
Europe

Matsushita Electric (U.K.) Ltd. / Panasonic AVC Networks Czech s.r.o.

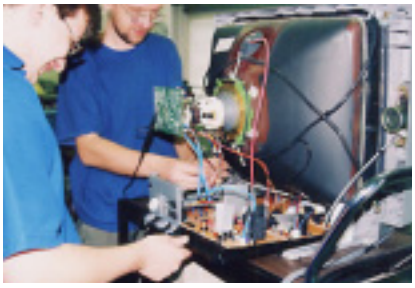
Social Responsibility

● Contribution to Local Communities PAVCCZ

Hit by massive flooding in August 2002, the Czech Republic sustained significant and unprecedented damage.

Plzen, the home of PAVCCZ, was among the towns hurt by the flood, which caused our plant to shut down temporarily. PAVCCZ responded to the human side of the disaster by donating TVs to the city for the benefit of citizens forced from their homes, especially seniors who live alone in municipal housing.

Every year, PAVCCZ donates TVs and makes monetary contributions to homes for children as well as provides the University of West Bohemia with products and subsidies to support research activities.



Research at the University of West Bohemia

Environmental Responsibility

● Environmentally Conscious TV Design MELUK

The TV R&D department as a core division at MELUK tackles the challenge of environmentally conscious product design. Researchers here endeavor to make TVs more energy efficient, save resources by reducing the product part counts and making products smaller or integrated, reduce the use of halogen elements and other hazardous substances, and address ecological concerns from production energy consumption to product packaging. To achieve these goals, MELUK encourages cooperation from parts suppliers and other business partners and enforces a strict verification.

TX-36PD30
16:9 100Hz color TV

● Model Introduction of Lead-free Solder MELUK

MELUK took the lead among the Group companies in Europe by introducing lead-free solder as a model case in November 2000. The company completed the introduction by March 2003, while providing support and instructions to assist the other production bases in employing the technology.

Lead-free soldering machine

● Energy- and Resource-Saving Microwave Oven Design MELUK

Over the life cycle of a microwave oven, the energy consumed during actual use accounts for a full 87% of the total energy consumption. Moreover, the product consists of many heavy components. MELUK started using an original inverter power supply to cut the energy consumption during usage by 12.2% and reduce the weight of the power supply unit from 4.6 kg to just 560 g. These efforts have reduced the overall weight of the oven while saving resources.

MELUK is also cutting material waste, part counts, and processes by stamping parts from stainless steel panels and then using the remaining material to make smaller parts, and by alternating product designs so that multiple parts can be taken from a single panel at a time.

● Environmental Performance Data

MELUK PAVCCZ

Category	Item	FY'02
Prevention of global warming	Power consumption (1000kWh)	19,461
	City gas consumption (kℓ)	897
	LPG consumption (kℓ)	0
	Heavy oil consumption (kℓ)	168
	Kerosene consumption (kℓ)	0
	Energy consumption (crude oil equivalent) (kℓ)	6,392
	Energy consumption (CO_2 emissions equivalent) (t-CO_2)	15,776
Chemical substance management	Use (t)	81
	Release/transfer (t)	4
Waste reduction	Generation (t)	3,388
	Recycling (t)	2,595
	Final disposal (t)	793
Water consumption	Water consumption (m^3)	44,644
Air pollutants	NOx emissions (t)	36

● Electricity, Water, and Gas Usage Monitoring PAVCCZ

The scale of production has steadily increased at PAVCCZ since its founding, so finding a way to save energy in the factory is crucial.

The plant initially installed a monitoring system to keep track of its electricity usage. In December 2002, it followed up its actions by adding water and gas monitoring capabilities throughout the company. This system consists of meters in the plant and office areas to allow the responsible manager to track usage of electricity, water, and gas easily and in nearly real time. By keeping tabs of this information on a desktop computer, he can detect and respond to problems immediately. The results provide administrative managers with evidence of problems, which helps staff in each work area to be perceptive and encourages sustained energy conservation efforts. Through this system, PAVCCZ staff not only get familiar with usage totals but also have a way of investigating and responding promptly in the event of a problem, for example, if a crack of pipe causes gas or water leakage.

Stanislav Kopelent, Industrial Engineering
"Implementation of this system has made our staff more conscious of energy conservation."

● Using Exhaust Heat from Soldering Systems PAVCCZ

As the Czech Republic sits at a latitude of 50°north, warm air is a precious commodity in winter. At PAVCCZ, cold, fresh air comes into the plant and is warmed using the waste heat from the soldering machines, which act as the heater for the plant. This is one method in which we save energy in a manner appropriate to the region.

TOPICS in Europe

In February 2003, the EU issued the WEEE and RoHS Directives affecting waste electrical and electronic equipment and restricting the use of hazardous substances in products. Following are examples of the ways in which the Matsushita Electric Group in Europe is responding to these directives and to the global warming problem.

● Digital MFPs get Blue Angel Mark

The WORKiO series digital multifunction products have earned the Blue Angel mark, which is a German environmental test mark. The mark indicates exceptional energy conservation, recyclability, reduction of hazardous substances, and product durability.

One of the authorized model DP-6010 introduced in mid-2002

● Reduction of CO_2 Emissions from Transportation

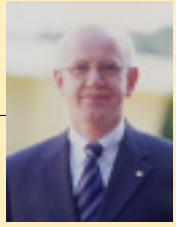
Panasonic Logistics Company U.K. Ltd. is working with Safeway supermarkets to cut costs while reducing CO_2 emissions. Trucks loaded with food and wine in one direction carry TVs on the return journey rather than run empty. This arrangement saves roughly 200 tons of CO_2 emissions annually.

A truck at Safeway's distribution center

● CRT Recycling

Matsushita Display Devices (Germany) G.m.b.H (MDDG), which manufactures CRTs, is building a system within and outside of the company to keep end-of-life products in circulation, thereby reusing materials more efficiently and contributing to the achievement of WEEE Directive recycling targets.

Wilfried Oppermann,
Head Environmental Team,
Matsushita Electric Europe (Headquarters) Ltd. (ME)



"We will challenge ourselves further to achieve the Green Plan 2010 and be a leading sustainable company."

Asia and Oceania

PT. National Gobel

Matsushita started the Asian operation outside of Japan in the early 1960s. PT. National Gobel (NABEL), a joint venture of Gobel and Matsushita, is our first affiliate to be established in Indonesia. As one of our major manufacturing plants in Asia, it currently produces and sells a wide range of products, including audio and visual equipment and home electronics. This section offers a glimpse of initiatives pursued at this Asian base.

Corporate Profile and Economic Performance

■ **PT. National Gobel (NABEL)**

Location: J1. Raya Jakarta-Bogor Km. 29
P.O.Box 3, Jakarta 13710 Indonesia
Foundation: July 27, 1970
Management:
Shuji Horikawa, Managing Director
Market: Indonesia (74%), exports (26%)
Sales: Rp 1.68 trillion
Employees: 3,098
Major products: TVs, refrigerators, radio/cassette players, stereo equipment, air conditioners, pumps, electric fans, washing machines, pants pressers, etc.

URL **PT. National Gobel (NABEL)**
www.panasonic.co.id/


Air conditioner CS-C96K1


Refrigerator NR-A15KD


Water pump GA-125JBE


Pump GP-125JB

Executive's Message

Our company naturally complies with existing environmental regulations, but we are going further that and starting to deal with possible new regulations still under discussion. In FY'02, we set up a waste recycling center within our plant. Reusing and recycling resources are a first step toward reducing the amount of waste released from the factory and achieving the ultimate goal of zero waste emissions.

It is our mission to provide customers with high-quality products. Here at NABEL, because we seek to provide a high level environmental performance, as is the case with product quality, we give greater consideration to the environment in our manufacturing process and product design.

Shigeru Inoue, Executive Director, NABEL

Social Responsibility

● Volunteer Mosques Repair Project

Some 87% of Indonesia's population follow the teachings of Islam. NABEL employees and local residents took part in a 2001 volunteer work to repair nine area mosques that had begun to deteriorate. NABEL contributed funds to encourage the participation of the volunteer work.


Employee volunteers help repair a mosque.

● Planting and Cleaning

NABEL has planted new vegetation on its factory grounds since FY'77, including 114 mango and other trees put in by FY'02. It additionally cleans the filters for local rainfall purification wells to assure that local citizens have clean groundwater.


Well filter cleaning


The former Managing Director also helps plant trees.

● Hosting Factory Tours

NABEL welcomes local elementary and middle school students to factory tours. These tours not only introduce NABEL's production process to students, but also give them a chance to see our environmental technology such as wastewater treatment facilities and eco-friendly products. These demonstrations of our various environmental activities encourage students to understand the importance of these efforts.

About 150 elementary school students take a factory tour in August 2002.

Environmental Responsibility

● Mutual Exchange of Know-how through Internal Environmental Audit

NABEL established its environmental management system in 1998 and has earned its ISO 14001 certification. Presently the Matsushita Electric Group in Indonesia performs internal environmental audits on each other to enhance environmental activities and help the improvement of environmental performance. Participating companies hold meetings where they exchange the information learned in the audit process to improve environmental performance, which accelerates mutual promotion of environmental management.

Meeting to improve performance

An internal environmental audit in March 2003

● Waste Recycling Center

NABEL has established an on-site waste recycling center as it targets zero emissions. By precisely sorting factory waste, the center assures that more of it is used again, thus boosting our recycling rate. This rate reached 74% in FY'02. In addition to sorting waste, NABEL tries to prevent waste generation. One successful measure at the design stage in our TV manufacturing division reduced the parts count by 40%. This initiative will continue in FY'03, aiming at further waste reductions.

Recycling center established in FY'02

● Eliminating Cadmium

Matsushita is advancing an initiative to eliminate the use of chemical substances, thereby creating truly eco-friendly products. NABEL has begun full-fledged efforts of its own. For one, it is asking suppliers not to include cadmium in their parts and materials, and packaging. So far 92 suppliers have agreed. Currently NABEL is asking suppliers to survey how much cadmium is included in their parts' materials and to submit certificates as evidence of non-inclusion. Moreover, from April 2003 onwards, NABEL has measured cadmium content in the purchased component materials in each package.

Cadmium content measuring instrument

● Lead-free Solder Implemented

NABEL completed the switchover to lead-free solder in all products in March 2003. To achieve this goal, we implemented 11 lead-free solder flow systems for TV sets and sought out the cooperation of partner firms who process a wide range of small components for NABEL.

Soldering machine for lead-free printed circuit boards

TV set built with lead-free printed circuit boards

● Using Low-emission Vehicles

NABEL measures emissions of pollutants (NOx, SOx) from supplier vehicles in order to decrease the air pollution in Jakarta. We plan to introduce low-emission vehicles to assure our own logistics are clean. Even our forklifts have reduced their usage of conventional diesel fuel by using 5 to 10% of biodiesel fuel derived from palm oil. This has resulted in significant reduction in CO_2 emissions.

Checking a supplier's gas emissions

Global Highlights
Asia and Oceania

PT. National Gobel

● Environmental Performance Data

NABEL

Category	Item	FY'02
Prevention of global warming	Power consumption (1000kWh)	10,963
	City gas consumption (kℓ)	481
	LPG consumption (kℓ)	0
	Heavy oil consumption (kℓ)	54
	Kerosene consumption (kℓ)	0
	Energy consumption (crude oil equivalent) (kℓ)	3,531
	Energy consumption (CO_2 emissions equivalent) (t-CO_2)	9,945
Chemical substance management	Use (t)	9.2
	Release/transfer (t)	7.3
Waste reduction	Generation (t)	4,255
	Recycling (t)	3,127
	Final disposal (t)	1,128
	Recycling rate (%)	74

● Legal Compliance Data

NABEL

Category	Item	Standard	Max recorded
Air	NOx (mg/m^3)	1,000	4
	SOx (mg/m^3)	860	21
	Soot and dust (mg/m^3)	——	98
Water	COD (mg/ℓ)	100	99
	Phosphorus (mg/ℓ)	4	0.6
	Organic (mg/ℓ)	80	77
Noise	Noise (dB)	70	65
Odor	Methyl sulfide (ppm)	0.01	0.007
	Methyl mercaptan (ppm)	0.002	0.001
	Styrene (ppm)	0.1	0.05

TOPICS in Asia and Oceania

● Indo National Ltd. Awarded for Excellence in Environmental Management

The Andhra Pradesh Pollution Control Board in India conferred an award for excellence in environmental management on Indo National Ltd. on June 5, 2002, also known as the World Environment Day. This award recognizes the effectiveness of a wide range of ongoing environmental initiatives undertaken by Indo National, including its earning of the ISO 14001 certification in 1998 and its government awards in 1994 and 1995 for planting on its factory grounds.

Andhra Pradesh Chief Minister N.Chandrababu Naidu presents award to Indo National Joint Managing Director Shozo Soematsu and Chief General Manager-Operations T.V. Subba Rao.

Award for excellence in environmental management
Award certificate

● PT. Matsushita Gobel Battery Industry Honored for Safe Labor Practices

PT. Matsushita Gobel Battery Industry received a great honor in January 2003 when Indonesia's Ministry of Manpower and Transmigration designated it as a safe, accident-free enterprise. The award followed 4.37 million working hours from September 2001 to November 2002 in accordance with the government policy of protecting workers from accident and injury.

Kazuo Ishimoto (left), Managing Director of PT. Matsushita Gobel Battery Industry, receives safe labor citation from Indonesian President Sukarnoputri Megawati.

● Asia-Oceania Regional Environmental Conferences

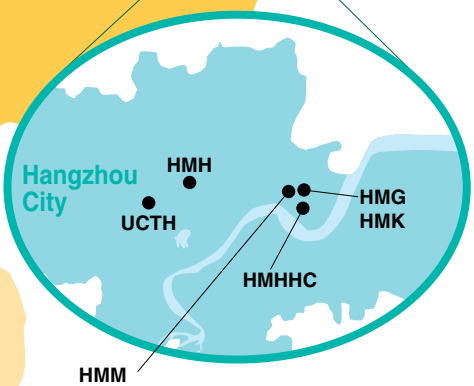
Matsushita's Environmental Officers in each country in Asia and Oceania meet in Regional Environmental Conferences to promote global environmental management. Both management and Environmental Officers of each group company attend these meetings, where they evaluate the targets of environmental initiatives and the efforts that are being made.

Philippines environmental conference

Singapore environmental conference

China and Northeast Asia

Hangzhou Matsushita Group



HMM

Corporate Profile and Economic Performance

■ Hangzhou Matsushita Home Appliance Co., Ltd. (HMH)

Foundation: April 1992
Management: Qin Ji Qiang, Managing Director
Shigeru Tominaga, Executive General Manager
Sales: 789 million yuan
Employees: 1,284
Major products: Fully automatic washing machines, clothes dryers, etc.

■ Hangzhou Matsushita Motor Co., Ltd. (HMM)

Foundation: November 1994
Management:
Tadao Yamamura, Managing Director
Sales: 535 million yuan
Employees: 1,591
Major products: Small motors for home appliances (such as air conditioners)

■ Hangzhou Matsushita Gas Appliances Co., Ltd. (HMG)

Foundation: December 1995
Management:
Masaaki Sakamoto, Managing Director
Sales: 217 million yuan
Employees: 500
Major products: Gas cookers, gas water heaters

■ Hangzhou Matsushita Kitchen Appliances Co., Ltd. (HMK)

Foundation: March 1998
Management:
Masaaki Sakamoto, Managing Director
Sales: 122 million yuan
Employees: 197
Major products:
Electric rice cookers, rice mills and parts

■ Hangzhou Matsushita Home Appliance & Housing Electronics Co., Ltd. (HMHHC)

Foundation: December 2001
Management: Wu Liang, Managing Director
Sales: 120 million yuan
Employees: 381
Major products: Home appliances such as vacuum cleaners, and housing electronics

■ Universal Communication Technology (Hangzhou) Co., Ltd. (UCTH)

Foundation: September 2002
Management: Toshimi Shimoyu, Chairman
Sales: (Not yet operating)
Employees: 166
Major products: Mobile telephone base station equipment, etc.

The history of Matsushita operations in China began in the late 1970s, when China's Vice Chairman Deng Xiaoping visited Japan and met with Matsushita Electric Founder Konosuke Matsushita. A manufacturing company for color TV CRTs was established in 1987, and since then, we have developed our operations primarily through joint ventures. In the mid-1990s, we opened several more manufacturing companies as the Chinese government stepped up its policies of reform and liberalization. Currently, Matsushita oversees 43 manufacturing bases around China with production and sales reaching 430 billion yen in FY'02.
Following is a description of Hangzhou City, which is located near Shanghai, and with a population of 6.2 million, serves as the hub of Zhejiang Province. Matsushita started operations there in 1992 with the launch of Hangzhou Matsushita Home Appliance Co., Ltd. and now runs 6 companies in the Hangzhou area.

● Safe, Environmentally Conscious Products

Automatic washing machine reduces water use by 30% with even better cleaning performance.

Vacuum cleaner uses a negative ion nozzle for cleaning as thorough as wiping (for Japanese market).

Compact rice cooker contributes to resource conservation.

Gas-powered water heater uses innovative air exhaust for greater safety.

Social Responsibility

Employment

The common employment practice in China is to offer permanent jobs to professional personnel in areas of management, engineering development, or production while periodically offering temporary contracts according to business conditions, so that most of the labor is temporary, particularly in production. Primarily, temporary employees at the Matsushita Electric Group companies in China are interns from career training schools and must be at least 16 years old, as prescribed by China's Labor Law.

Benefits extended to temporary employees include meals and lodging, coverage of health insurance expenses, and periodic physical exams.

Education and Training

Matsushita's human resource development standards require education and training of employees, and as a result, the Group works toward this goal. We provide a variety of courses and on-site training on specific subjects such as work regulations, safety and firefighting, ISO 9000-based quality control systems, ISO 14001-based environmental management systems, and labor health and safety.

Training for new employees at HMM

Occupational Health and Safety

HMH

Employees safety is crucial to any company engaged in manufacturing. Our companies appoint a health and safety committee led by management executives. The committee promotes various programs such as safety patrols and training to ensure the safety of workplaces. HMH is the first company in China to earn the OHSAS 18001 certification for its occupational health and safety management system. Additionally, in recognition of its day-to-day efforts, it earned the designation as a company of excellence in 2002 in Ankangbei, a nationwide safety contest.

The Ankangbei (safety contest) award given by the All-China Federation of Trade Unions and State Administration of Work Safety

OHSAS 18001 certification for occupational health and safety assessment systems

Environmental Responsibility

Introducing Lead-Free Solder

The Hangzhou Matsushita Group companies have all begun using lead-free solder in the printed circuit boards of their products. Lead-free soldering machines are being installed for boards manufactured in-house and suppliers are being asked for their cooperation regarding boards purchased from outside sources.

Lead-free flow soldering machine installed at HMH

Reusing Packages for Shipments between China and Japan

HMM

HMM builds air conditioner and washing machine motors for sale in China and supply to production bases in Japan. Previously, shipments to Japan went in corrugated cardboard boxes on wooden pallets, materials that were simply discarded as waste at the point of entry or at customer sites. HMM initiated an experiment for reusing the amount of packaging used between the two countries in order to minimize such waste, to cut costs and improve the quality of logistics. In place of the conventional packaging, HMM now uses steel mesh containers and anti-static plastic trays, which preserve product quality during transportation and can be folded up for maximum compactness and efficiency for the return trip.

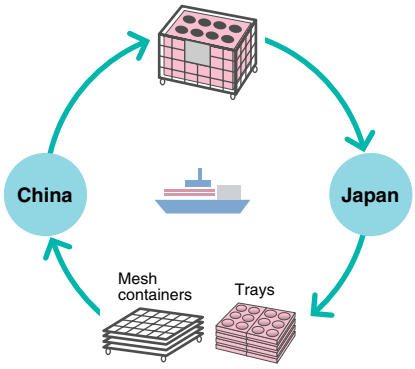
New reusable packaging container

Environmental Performance Data

HMM

Category	Item	FY'02
Prevention of global warming	Power consumption (1000kWh)	5,723
	City gas consumption (kℓ)	0
	LPG consumption (kℓ)	336
	Heavy oil consumption (kℓ)	30
	Kerosene consumption (kℓ)	25
	Energy consumption (crude oil equivalent) (kℓ)	2,007
	Energy consumption (CO_2 emissions equivalent) (t-CO_2)	6,787
Chemical substance management	Use (t)	1,234
	Release/transfer (t)	510
Waste reduction	Generation (t)	5,588
	Recycling (t)	5,574
	Final disposal (t)	10
Water consumption	Water consumption (m^3)	75,500
Air pollutants	NOx emissions (t)	0.1
Water pollutants	COD load (t)	2.6
Air	Systems using lithium bromide	
	Measured NOx density (mg/Nm^3DA)	71
	NOx emissions (kg/h)	0.0537
	Varnishers	
	Measured xylene density (mg/Nm^3DA)	11.4
	Xylene emissions (kg/h)	0.0082
	Stator coil work sites	
	Measured xylene density (mg/Nm^3DA)	1.1
	Xylene emissions (kg/h)	0.0001
Water	pH	6.4
	COD (mg/ℓ)	87
	BOD (mg/ℓ)	36
	SS (mg/ℓ)	59

■ Packaging Reuse Cycle



● Selected as a Hangzhou Green Enterprise

HMM

From 1997 to 1999, the Hangzhou Matsushita Group companies undertook the development of environmental management systems, obtained the ISO 14001 certification, and made continuous improvements. The city of Hangzhou has recognized the efforts of Hangzhou Matsushita Motor Co., Ltd. (HMM) to control air and water quality, raise employee awareness, and recycle waste, and therefore has selected the firm as one of the 100 green enterprises.

Fang Xiao Ling in charge of environmental management at HMM, and the notice board for instructing employees about using resources effectively

Pelletizing and reusing waste PBT plastic

TOPICS in China and Northeast Asia

● China Regional Environmental Conference

The 6th China Regional Environmental Conference took place in Xiamen, China in July 2002. The secretariat for environmental protection at Matsushita Electric (China) Co., Ltd. promoted the event, which drew 86 participants from 35 companies. Designed to bolster environmental initiatives in China, presentation themes included case studies of dealing with critical issues and introducing lead-free solder as well as efforts made to recycle home appliances in Japan.

Environmental Conference in Xiamen, China

● Lead-free Soldering Techno-School in Shanghai

Matsushita has given its Lead-free Soldering Techno-School course as a means of speeding up the adoption of lead-free solder. This event has now taken place three times in Shanghai, attracting the participation of 54 individuals from 27 companies. These participants acquired and shared the knowledge needed to introduce lead-free solder through seminars on technology and instructions on practical techniques and quality assessment methods.

Hands-on experience at Techno-School

● China Material Test Center

In April 2003, the China Material Test Center was established to facilitate the active use of Chinese-made parts and materials as the marketplace becomes global. To assess each part or material, the center carries out performance and raw material tests and also checks for the inclusion of chemical substances with an environmental impact. This function assures that global procurement is environmentally benign.

Materials analysis of plastic components

Hideo Tabata,
Secretariat for Environmental Protection, Quality Control Department, Matsushita Electric (China) Co., Ltd.

"As China develops, the burden on the environment quickly grows. We conduct our business in anticipation of stricter regulations."

Economic Performance

The purpose of Matsushita's raison d'être is to contribute to the progress and development of society and the well-being of people through our business activities, thereby enhancing the quality of life throughout the world.
In 1932, the founder, Konosuke Matsushita, was resolved to "aim at sustaining and enhancing happiness of human beings through material and spiritual abundance." Since then, all of the Matsushita Electric Group employees have consistently sought to accomplish this mission in promoting business activities.
In order for Matsushita to continue serving the lives of people around the world, all our management and business activities must continue to evolve, based on our invariable Management Philosophy.

Basic Management Objective

Recognizing our responsibilities as industrialists, we will devote ourselves to the progress and development of society and the well-being of people through our business activities, thereby enhancing the quality of life throughout the world.

Company Creed

Progress and development can be realized only through the combined efforts and cooperation of each employee of our company. United in spirit, we pledge to perform our corporate duties with dedication, diligence and integrity.

Seven Principles

Contribution to Society
Fairness and Honesty
Cooperation and Team Spirit
Untiring Effort for Improvement
Courtesy and Humility
Adaptability
Gratitude

Code of Conduct

Corporate Ethics and Compliance

At the heart of Matsushita's corporate ethics and compliance efforts is the practice of its Management Philosophy. In 1998, the Code of Conduct was fully revised, emphasizing that everyone in the Matsushita Electric Group of companies, at all levels, including executive officers and ordinary employees – individually and collectively – should work towards the same goal, practicing the Matsushita style of participative management.

Matsushita Electric Group The Code of Conduct

In 1992, a Code of Conduct was set forth as specific items to be observed and as criteria for practicing our corporate philosophy. It makes clear how the Management Philosophy is to be applied in actual business situation. In 1998, an overall revision was made in response to increasing globalization and changes in social values. Taking into account different laws and regulations by country and region, global standards that are common in essence have been adopted for the approximately 120,000 employees in Japan and 100,000 employees outside of Japan.

■ Creation of the Code of Conduct

Issued : January 1992
Revised : January 1998
Purpose of the Revision
- To further increase the effectiveness of the Management Philosophy
- To introduce new value standards
  (Enhancement of the value of information through IT, conservation of the global environment, global standardization of freedom, fairness, and disclosure, consideration for human rights)

Application
All Matsushita Electric Group employees, including the members of the Board of Directors
Approximately 120,000 employees in Japan
Approximately 100,000 employees outside of Japan (translated into 10 languages)

■ Five Aspects of Our Business Ethics

(1) Legal compliance
Do your actions comply with the laws and regulations?
(2) Management philosophy
Are your actions in accordance with our Management Philosophy and company policies?
(3) Common sense
Are your actions acceptable to society?
(4) Consumers
How are your actions perceived by consumers?
(5) Conscience
Are you sure that your actions are appropriate?

The Code of Conduct

Observing the Code of Conduct

(Our Basic Business Philosophy is the Foundation, Value Creation and Contribution to Society, Close Ties to Society, Global Perspective and Conduct, and Observing the Code of Conduct)

Chapter 1: Promoting Business Operations

1. Research and Development (Research and Development for a Better Future)
2. Purchasing (Fair and Equal Footing with Suppliers)
3. Production (Realizing Competitive Manufacturing)
4. Sales (Trust and Confidence from Customers, Sales Activities Based on Social Ethics)
5. Advertising (Fairness in Expression, Being Creative)
6. Product Safety (Priority on Safety)
7. Control of Information (Proper Control of Information)
8. Complying with the Law and Observing Corporate Ethical Principles
   (Fair Actions, Observing Corporate Ethical Principles)

Chapter 2: Our Relationship with Society

1. Harmony with the Global Environment
   (Development of Technology for the Global Environmental Preservation)
2. Information Disclosure and Corporate Communications
   (Information Disclosure, Dialogue with Society)
3. Social and Cultural Activities (Harmony with the Local Community)

Chapter 3: Employee Relations

(Respect for Humanity and Individuality, Respect for Human Rights and Eradication of Discrimination, Respect for Privacy)

URL **The Code of Conduct**
panasonic.co.jp/global/profile/conduct/

System and Promotion

● Establishment of the Corporate Business Ethics Committee

For corporate ethics and compliance implementation, the establishment of a Group-wide system is now under way. In December 2000, an executive officer responsible for Corporate Ethics was appointed and a section was established to manage affairs. In January 2001, the Corporate Business Ethics Committee, chaired by the President, was established.

● In-company Hotline

Although, in principle, a problem at a workplace should be discussed with or reported to the supervisors, an In-company Hotline has been set up to offer consultation beyond organizational borders. Using a toll-free number or e-mail, employees may directly contact the hotline for consultation.

■ In-company Hotline

Women's Hotline
Fair Trade Hotline
Corporate Business Ethics Hotline

Intranet "Corporate Business Ethics"

● Information Security Management

Matsushita handles a wide range of information, including customer information, personal information, and asset information. Since the establishment of the Basic Regulations for Information Security Management in May 2000, an information security management system has been set up, extended to include affiliated companies, for the proper control of important information.

Corporate Governance and Finance

After reporting corporate deficits in FY'01 for the first time since our foundation, we at Matsushita have made drastic reforms in our management structure, with a firm determination to attain a V-shaped performance recovery. In January 2003, the motto "Today we re-declare our founding" was announced at the Annual Management Policy Meeting. Our management structure is undergoing a significant transformation from a "heavy and slow" company to a "lean and agile" Matsushita.

Management System

In FY'03, with the view of establishing autonomous management at each business domain of Matsushita, a reform took place expediting optimum management operation under the Group-wide management system.

■ Framework of Management Reform

1. Matsushita has implemented an "Executive Officer System" tailored to the domain-based management in order to integrate the comprehensive strength of all Group companies. Moreover, a "Group Managing Directors & Officers Meeting" has been introduced as an organization for consulting on corporate strategy issues.
2. With the aim of establishing corporate governance best suited to the diversified scope of its business fields, Matsushita will further strengthen its corporate auditor system by having management personnel, who are well-versed in day-to-day operations at operational fronts, participate in decision-making on corporate strategies and mutual supervisory functions.
3. The remuneration system for Members of the Board of Directors and Executive Officers has been revised. The new system based on the same criteria, specifically CCM and cash flows, is intended to accomplish the goal of increasing corporate value in the interest of shareholders.

● Reform of the Board of Directors

By delegating authority to Executive Officers, the Board of Directors will concentrate its functions on corporate strategies and supervision, thereby clarifying the supervisory functions of the Board of Directors and the business executive functions of the Executive Officers. As participation of those at the operational fronts in the Board of Directors is necessary, supervisory functions and executive functions will not be completely isolated. Also, the Board of Directors itself will be reduced in number to promote swift decision-making.

● Executive Officer System

The Board of Directors will elect and appoint Executive Officers who are to assume responsibility for the execution of business throughout the entire Matsushita Electric Group. Members of the Board of Directors and Executive Officers are equal, in terms of rank and status, and their business results are evaluated based on the same criteria and are accordingly reflected in their compensation.

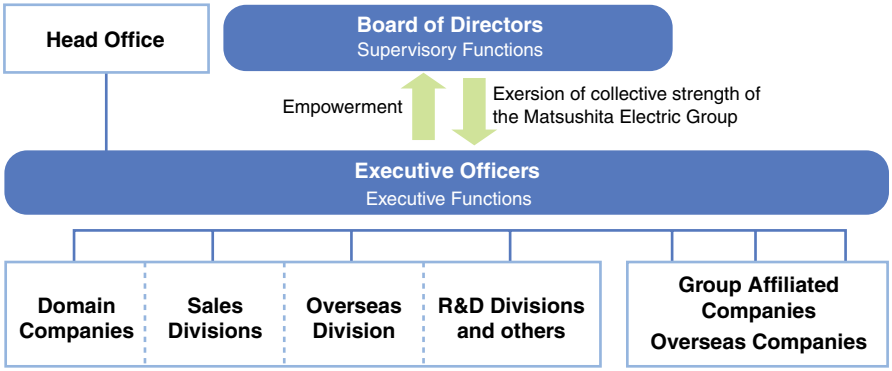
● Advisory Board

Since FY'98, an Advisory Board consisting of three selectees from outside the company and Matsushita's top management has been established for achieving management that is open to society.

■ Overview of the Advisory Board

Members: Three advisors from outside the company, Members of the Board of Matsushita
Meetings: Three times a year
Themes in the Past:
"Issues for Matsushita as Viewed from Outside the Company"
"New Business Strategies in a Network Society"
"Efforts toward the Sustainable Society"

■ Matsushita Electric Group Management System



Mid-Term Management Plan "Value Creation 21"

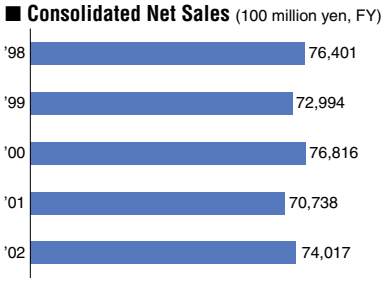
In FY'01, with "deconstruction" and "creation" as keywords, Matsushita launched its "Value Creation 21" plan. This plan entails transformation of the company's business and profit structures from a 20th century-type business model characterized by mass production and mass sales of standard products into a "Super Manufacturing Company" for the 21st century. The plan also aims at constructing new business models that bring about synergy effects among devices, sets, and service businesses.

In FY'02, the management focus shifted to "creation." The management system reform took place to restructure businesses and organizations, and to enhance its effectiveness. By realigning Group companies into 14 business domains, overlapping of businesses was eliminated and the concentration of development resources became possible. In addition, at each domain company, autonomous management has been promoted with emphasis on consolidated cash flows on a global basis. Evaluation of each domain company was narrowed down to two standards, capital cost management (CCM) and cash flows (CF), to create a system that enables the Head Office to carry out fair and sound evaluation and follow-up. Through a system of complete empowerment and capital governance, we are aiming at accomplishment of the "Value Creation 21" plan in FY'03.

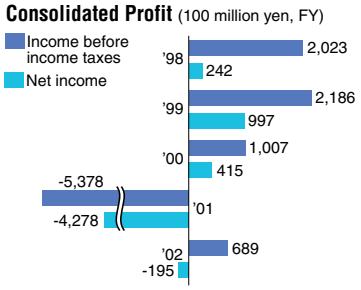
URL Corporate Outline and Financial Information
matsushita.co.jp/ir/en/

Financial Information

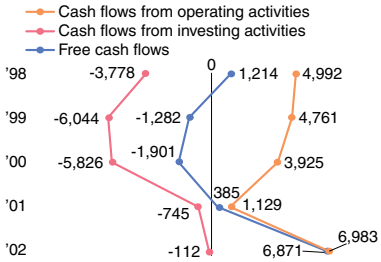
■ Consolidated Net Sales (100 million yen, FY)



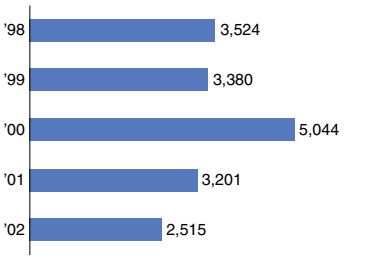
■ Consolidated Profit (100 million yen, FY)



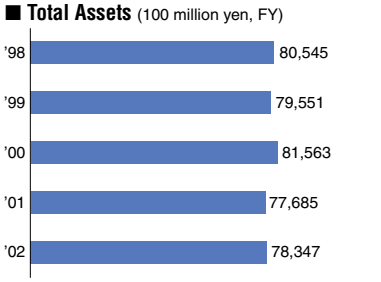
■ Cash Flows (100 million yen, FY)



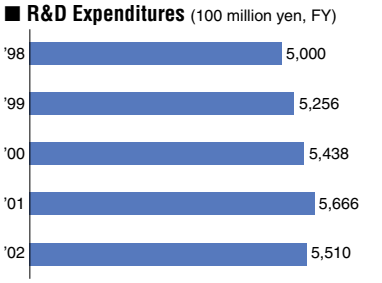
■ Capital Investment (100 million yen, FY)



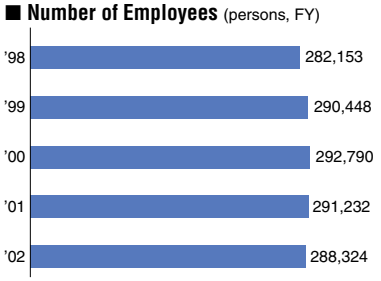
■ Total Assets (100 million yen, FY)



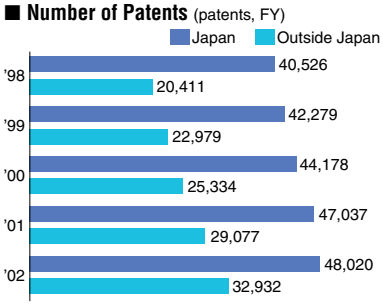
■ R&D Expenditures (100 million yen, FY)



■ Number of Employees (persons, FY)

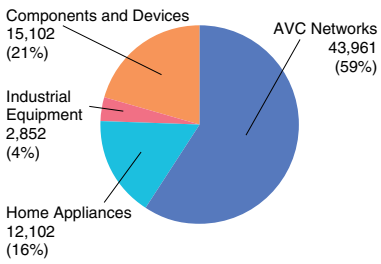


■ Number of Patents (patents, FY)



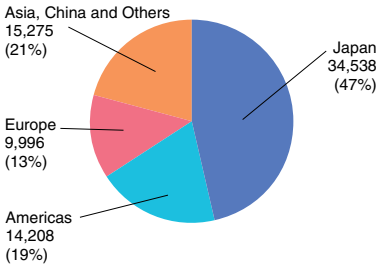
■ Net Sales by Product Category

(100 million yen, FY'02)



■ Net Sales by Region

(100 million yen, FY'02)



Note:
- Matsushita's consolidated financial statements are prepared in conformity with accounting principles generally accepted in the United States (U.S.GAAP).
- Reductions in line with the revision of the taxation system resulted in effects on net income (consolidated) of ¥42.1 billion for FY'98 and ¥22.3 billion for FY'02.
- Beginning in FY'02, some companies of the Japan Victor Group, mainly overseas subsidiaries, are included in the consolidated settlements of accounts. Figures indicated for FY'01 have been revised accordingly.

Global Risk Management

Along with business globalization, the importance of risk management is increasing throughout the world. In November 2002, the Overseas Risk Management System was established to respond 24 hours full time globally. With "Human Safety" and "Company's Credibility" built on the fundamental principles of our Management Philosophy of "Customer-Comes-First," we are committed to responding promptly as expected by the society and customers. In concrete terms, "Risk Management" is incorporated into business plans and undertaken by top executives in the daily business activities.

TOPICS

Socially Responsible Investment (SRI)

In recent years, the concept of Socially Responsible Investment (i.e. investment taking into consideration social aspects such as environmental issues and human rights, in addition to corporate financial aspects) is rapidly spreading mainly in Europe and the U.S. For two consecutive years in FY'01 and FY'02, Matsushita was selected for inclusion in FTSE4Good, the socially responsible investment index created by the British FTSE Group. Also in Japan, we were ranked the top name (as of October 2002) in the "SRI Social Contribution Fund – Wing for Tomorrow" of the Asahi Life Asset Management Co., Ltd.

Research and Development

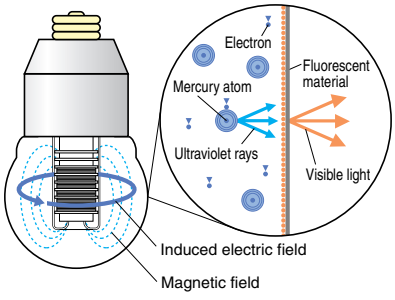
Research and development is the lifeline of manufacturers. Comprising approximately 36,000 members, our R&D Divisions strive to contribute to a better future for people around the world through the research and development of advanced technology, including nanotechnology, and product design covering diverse areas from hardware to software.

Research and Development Contributing to Environmental Conservation

Induction Fluorescent Lamp

In the field of bulb-type fluorescent lights, we have developed and marketed a long-life lamp based on a new lighting principle. Fluorescent lamps emit light when fluorescent material is stimulated by ultraviolet rays. With our new lamp, AC current runs through an inside coil and induces an electric field to generate ultraviolet rays, thus emitting light. Without an electrode that can be easily degraded, lamp life is extended to approximately 30,000 hours (rated value), 5 times that of conventional bulb-type fluorescent lights and 30 times that of white lamps. When lit for 10 hours a day, it can be used for approximately 8 years, saving replacement.

■ Luminescence Principle of Induction Fluorescent Lamp



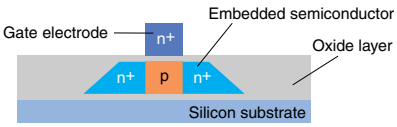
URL national.jp/product/conveni/lamp/mpb/pfa15el/pfa15el.html (Japanese only)

Ultralow-power LSI

LSI stands for large-scale integrated circuit, an important component of electronic equipment. Matsushita has undertaken the development of an ultralow-power LSI as a NEDO*1 project. With the semiconductor wrapped by an insulating layer, this LSI operates at several mW, less than one-tenth of power required in current devices. As it works even with a faint energy, such as body heat, for example, its application is expected in a wide range of equipment, including information terminals.

*1 New Energy and Industrial Technology Development Organization (NEDO)

■ Construction of Ultralow-power LSI

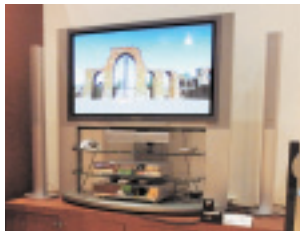


Heat from the palm operates the ultralow-power LSI, enabling it to display information.

Optimization of Energy Consumption During Operation

As a NEDO*1 project, we have developed a system for optimizing energy consumption of electric equipment during operation. With a human detection sensor and control system that enables fluctuating operations, TVs, air conditioners, and electric bidets with showers control their power or temperature settings automatically. Energy savings of approximately 28% in TVs, 21% in air conditioners, and 26% in electric bidets with showers are expected.

Control system that attaches to warm-water bidet



TV with a human detection sensor and control device

Atmospheric Remote Sensing Instrument ILAS-Ⅱ

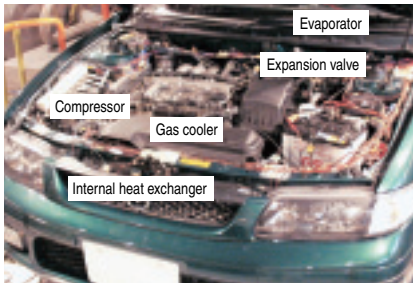
Earth Observing Satellite ADEOS-Ⅱ launched by the National Space Development Agency of Japan (NASDA) in December 2002 is equipped with the Atmospheric Remote Sensing Instrument ILAS-Ⅱ, developed by Matsushita on commission from the Ministry of the Environment. ILAS-Ⅱ is an infrared spectrometer that accurately monitors the vertical profile of ozone and related trace gas concentrations at an altitude of 10 to 60 km. This technology is expected to contribute to the monitoring of the ozone layer and to understanding the mechanism of its depletion, enabling forecasting with improved accuracy.

■ Earth Observing Satellite ADEOS-Ⅱ

URL www-ilas2.nies.go.jp/en/

Automotive Air Conditioning System Using CO_2 as a Refrigerant

In view of preventing global warming, we have been seeking ways of switching refrigerants for automotive air-conditioning from CFC substitutes (HFCs) to CO_2. Recently, we have succeeded in developing a high-performance internal heat exchange cycle and heat exchanger, including an evaporator and gas cooler, which employ microchannel heat transfer tubes using CO_2 as a refrigerant. With this new air conditioning system, annual energy consumption has been reduced by approximately 5% compared with a system using CFC substitutes as a refrigerant.



External view of a vehicle equipped with an air conditioning system using CO_2 refrigerant

Environment Solution Business

One of the newest growth areas at Matsushita is in the field of the Environment Solution Business, whose objective is to contribute to environmental conservation by integrating our technological resources and engineering capabilities.

Outline of Environment Solution Business

Our Environment Solution Business consists mainly of Energy Solutions, Eco Solutions, and Environmental Service Solutions. We offer a variety of energy solutions for offices, factories and homes, including the home-use fuel cell cogeneration system. Environmental regulations concerning water, air, and soil purification and waste recycling have also prompted us to expand into new businesses. For example, we are working on kitchen waste recycling to meet different needs from households to plants, supporting the zero-emission targets of the entire community.

Nickel Metal-Hydride (Ni-MH) Rechargeable Batteries for Eco-Cars

Panasonic EV Energy Co., Ltd. conducts research and development of nickel metal-hydride (Ni-MH) rechargeable batteries for use as a power source of HEVs and EVs. Our Ni-MH rechargeable batteries have been adopted in the world's first HEV "Toyota PRIUS" and are being supplied to automobile manufacturers around the world. Moreover, attracting attention as the next-generation clean energy, our fuel cells have been adopted as key components in a fuel-cell hybrid vehicle. In December 2002, Toyota's FCHV, equipped with this fuel cell, began the first-ever limited marketing of this type of vehicle in Japan and the U.S.

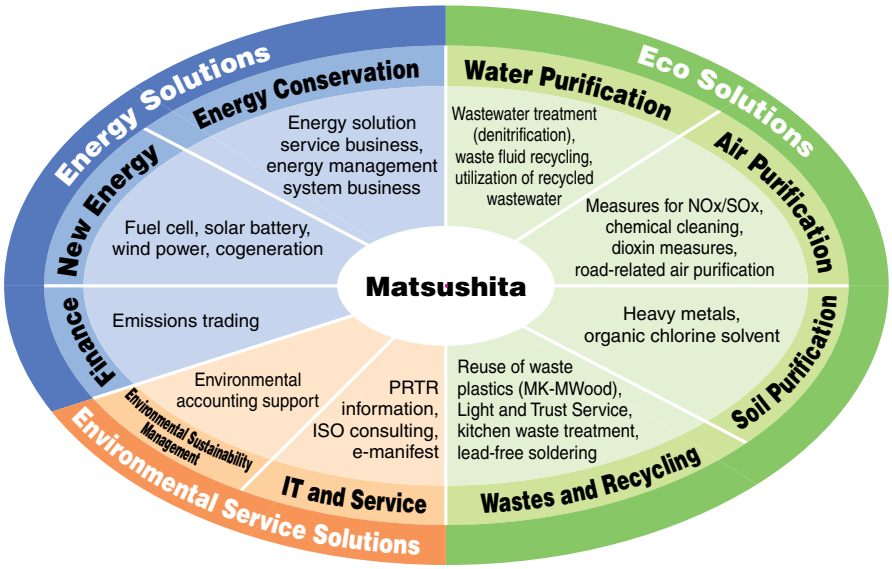
Fuel-cell hybrid vehicle "Toyota FCHV" and Ni-MH rechargeable battery

Electric Hybrid Bicycles Eco-Cycle System

National Bicycle Industrial Co., Ltd. took part in the "Rent-a-Cycle & Mono-Ride" demonstration carried out by Kitakyushu City (Fukuoka Prefecture, Japan) from August 2002 to January 2003. This was implemented as part of the Transportation Demand Management Demonstration Project of the Ministry of Land, Infrastructure and Transport. Approximately 200 citizens participated in this social experiment aimed at alleviation of traffic congestion and reduced emissions of exhaust gas and CO_2 by introducing a switch from automobiles to a combination of electric hybrid bicycle and monorail.
Making use of original technology, Matsushita develops a lightweight easy-to-ride electric hybrid bicycle that enables long-distance traveling, thereby proposing an Eco-Cycle System to create a more comfortable town.

Electric hybrid bicycle
Excellent ViVi BE-EHE63

■ Areas of Matsushita's Environment Solution Business



Kitakyushu City "Rent-a-Cycle & Mono-Ride" monitor recruitment poster

Highlights 2002 Fuel Cell Cogeneration Systems P.13

Highlights 2002 Light and Trust Service P.15

Environmental Sustainability

In 1991, Matsushita formulated the Environmental Management Basic Policy, and subsequently established its Environmental Statement. The Statement illustrates our belief in the law of nature that genuine progress and prosperity cannot be achieved without the co-prosperity of all beings on earth. The Statement also reflects our view that social responsibilities must be met with the awareness that humankind has the obligation to use nature at its fullest in a caring and fair manner. Based on this Statement, we must carry out environmental sustainability management in all divisions, working towards the fulfillment of our "Environmental Vision" and "Green Plan 2010," both of which were drawn up in 2001.

Basic Business Philosophy

Basic Management Objective

Company Creed

Seven Principles

Code of Conduct

Environmental Statement

Fully aware that humankind has a special responsibility to respect and preserve the delicate balance of nature, we at Matsushita acknowledge our obligation to maintain and nurture the ecology of this planet. Accordingly, we pledge ourselves to the prudent, sustainable use of the earth's resources and the protection of the natural environment while we strive to fulfill our corporate mission of contributing to enhanced prosperity for all.

Environmental Vision

Green Plan 2010

Basic Policy for the Environment

Based on Matsushita's Management Philosophy, we formulated the Environmental Management Basic Policy on June 5, 1991. Subsequently, we established the "Environmental Statement" and "Code of Conduct" as part of our environmental charter. These form the basis upon which Matsushita carries out environmental activities worldwide. In 2001, we devised the "Environmental Vision" and "Green Plan 2010" in order to accelerate environmental sustainability management and meet our responsibilities as a 21st century-type corporation.

Environmental Vision

In October 2001, we announced the Environmental Vision, which was formulated with a view toward contributing to the realization of a sustainable society. We expanded our environmental activities to cover seven areas throughout a product's life cycle and set up specific targets in the action plan. The Vision was drawn up using the scenario planning method*. It gives a concrete and qualitative portrayal of a sustainable society and lifestyle in 2025 and from this image of the future, identifies the proper role that Matsushita should fulfill. We will revise our Environmental Vision and action plan as needed, while devoting full effort to pursuing further activities.

*A method to understand the future business environment through the creation of multiple scenarios

■ **Scenarios for Society and Lifestyle in 2025**

URL **Environmental Sustainability Report 2001**
matsushita.co.jp/environment/2001e/

Environmental Vision

The Matsushita Electric Group contributes to "Coexistence with the Global Environment" through Environmental Technology and Ecological Thinking (ET²!).

New challenges for "Green" Products

•Make all Matsushita products "Green"*

*Environmentally friendly products and services made with environment-conscious materials through efficient use of energy and resources

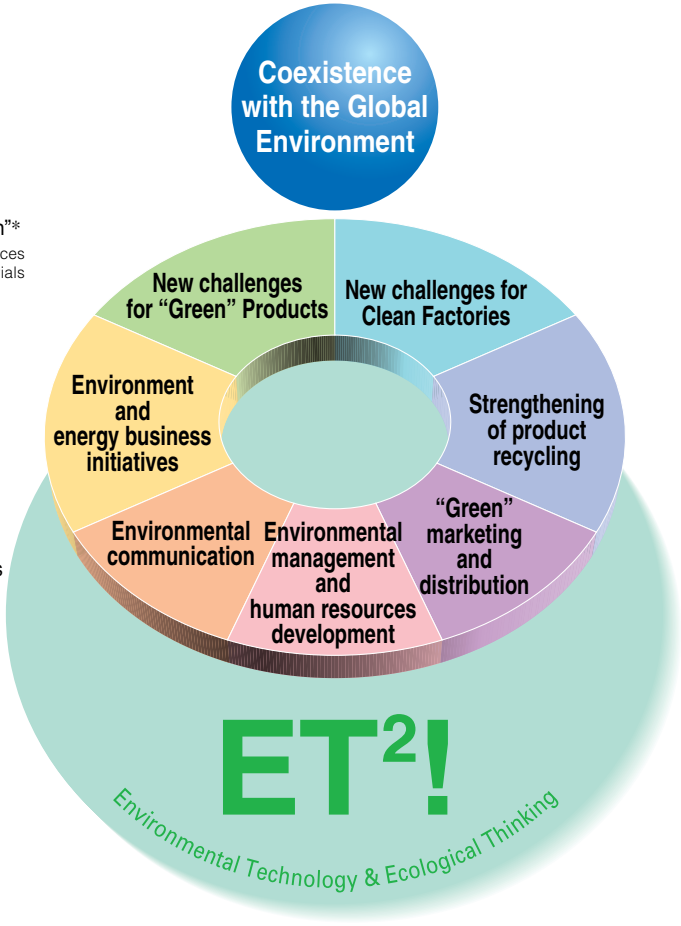
Environment and energy business initiatives

•Make endeavors to develop sustainable energy such as fuel cells

Environmental communication

•Use various means to communicate Matsushita's environmental activities worldwide

•Take up future challenges by collaborating with internal members and external parties



New challenges for Clean Factories

•Strive to achieve Zero Emissions*

*Minimize CO_2 emissions and waste generation

•Strive to develop environment-conscious production methods and systems

Strengthening of product recycling

•Expand product categories for recycling

"Green" marketing and distribution

•Make commitment to conserve energy and resources

Environmental management and human resources development

•Establish organizational structure to facilitate speedy and autonomous decision-making procedure

•Establish indicators and evaluation systems for environmental management

•Cultivate environmental awareness in employees

Target and Performance

Green Plan 2010

(Base year: FY'00, global targets formulated in October 2001)

Item		FY'05 Target	FY'10 Target
New challenges for Green Products	Prevention of global warming	Increase energy use index*1 by 30%	Increase by 50%
	Chemical substances	Discontinue use in products shipped in April 2005 and after: Lead, cadmium, hexavalent chromium, and mercury Discontinue immediately: Specified brominated flame retardants (PBB, PBDE) Discontinue by March 2006: Polyvinyl chloride resin *2	
	3Rs (Reduce,Reuse,Recycle)	Increase resource use index*1 by 50%	Increase by 70%
	Product development	Increase development of Green Products to more than 70%	Increase to 90% or more
New challenges for Clean Factories	Prevention of global warming	Reduce CO_2 emissions per unit of production by 5% Maintain CO_2 emissions at the same level as FY'90 (Japan)	Reduce by 10% Reduce by 7% (Japan)
	Chemical substances	Reduce the amounts of use, release and transfer by 40%	Reduce by 60%
	Waste and by-products with value	Reduce emissions per unit of sales by 10%	Reduce by 20%
	Water	Reduce consumption per unit of sales by 5% Promote effective use of water resources	Reduce by 10%
	Production methods and systems	Establish new production methods and systems to enhance the efficient use of energy and resources	
Strengthening of product recycling		Establish a system to expand product categories for recycling Improve recycling rate	Establish recycling systems for all householdelectric appliances
Environment and energy business initiatives		Launch full-fledged marketing campaign for home-use fuel cells cogeneration system Strengthen energy management business	Make the system fully diffused Expand the business
Green marketing and distribution	Conservation of resources	Conserve resources by making use of the Internet in marketing activities	
	Prevention of global warming	Promote modal shift and increase rail freight to 20,000 containers (Japan)	Increase rail freight to 30,000 containers
Environmental communication	Information disclosure	Develop the Environmental Report into a Sustainability Report Publish the Site Report Promote communication with a wide range of stakeholders	
	Green investment/ contribution to local communities	Continue forest preservation activities Increase greenery in factory sites and on rooftops Promote green investment Establish Green Fund	
	Corporate citizenship	Expand Love the Earth (LE) Citizens' Campaign to outside of the company Increase LE families to more than 50% of all employee households	Build an inter-company network for LE activities Increase to more than 80%
	Partnership	Strengthen partnership and form networks with environmental NPOs Actively cooperate toward and contribute to environmental activities of international organizations, governments, and municipalities	
Environmental sustainability management and human resources development	Organizational structure	Strengthen the environmental promotion system of Group companies throughout the world Strengthen decision-making functions in each global region	
	Development of human resources	Prepare environmental training curriculums for each corporate level and division	
	Management evaluation system	Establish a comprehensive environmental accounting system Reflect the reductions in environmental impact of products and operations in the performance evaluation	Incorporate the results of environmental accounting in the performance evaluation

*1 For the definition of indexes, see p. 64. *2 Revised in April 2003.

Self-evaluation rating: ● : Target accomplished

FY'02 Performance

FY'03 Target

FY'02 Target	FY'02 Performance	Self-evaluation	FY'03 Target
Increase energy use index*1 by more than 12%	Achieved the target with 432 models (p. 64)	●	Increase energy use index*1 by 18% or more
Complete the introduction of lead-free solder in all products	Achieved 100% in Panasonic and National products (p. 64)	●	Promote the Hazardous Substance Non-use Project
Investigate the amount of prohibited substance use and consider the use of substitutes	Strengthened the systems for promoting substitutes and submitting non-use warranty of substances listed for prohibition (p. 62)	▲	
Increase resource use index*1 by more than 20%	Achieved the target with 402 models (p. 64)	●	Increase resource use index*1 by 30% or more
Grasp the material balance of major products	Grasped the material balance of 10 major products (p. 57)	▲	Grasp the material balance of 15 major products
Increase the development of Green Products to more than 28%	Increased to 41% (583 models) - Target achieved (p. 64)	●	Increase the development of Green Products to more than 42% of the total
Reduce CO_2 emissions per unit of production by 2%	Increased by 2.3% (5.8% increase in Japan, 2.9% reduction outside Japan)	▲	Reduce CO_2 emissions per unit of production by 3%
Control CO_2 emissions to 3% increase from the FY'90 level (Japan)	Maintained the FY'90 level - Target achieved (p. 59)	●	Control CO_2 emissions to 2% increase from the FY'90 level (Japan)
Reduce by 22% outside Japan and 39% in Japan (from the FY'98 level)	Amounts of use: Reduced by 65% in Japan and by 46% outside Japan (p. 60) Release and transfer: Reduced by 43% in Japan and increased by 16% outside Japan	▲	Reduce the amounts of use, and release and transfer: by 45% from the FY'98 level (Japan); by 33% from the FY'00 level (Asia and Oceania); by 11% from the FY'02 level (other regions)
Reduce by 4%	Increased by 3.5% (14% reduction in Japan, 22% increase outside Japan)	▲	Reduce emissions (including by-products with value) per unit of sales by 6%
Achieve zero waste emissions (Japan)	Achieved a recycling rate of 98.2% - Target achieved (p. 61)	●	Continue zero waste emissions (Japan)
Reduce by 2%	Reduced by 3.4% (2.3% increase in Japan, 2% reduction outside Japan)	●	Reduce consumption per unit of sales by 3%
Investigate the current status of effective use of water resources	Completed status survey (80% of water consumed in the device divisions) (p. 61)	●	Formulate a water consumption reduction plan at devices divisions
Investigate the environmental impact of the introduction of cell production system	Confirmed 50 to 70% energy-saving effect	●	Establish an energy-saving manufacturing management system
Tackle issues relating to expansion of product categories for recycling Enhance activities for reduction and reuse	Studied measures to meet EU Recycling Directive (about 90 product categories) (p. 69)	●	Establish basic policies to deal with EU Recycling Directive
Promote the environmental business creation conference and energy management business project	Implemented as planned. Promoted actively through exhibitions, etc.	●	Step up the development of home-use fuel cells cogeneration systems for practical use
Hold in-house Environmental Business Forum	Promoted actively through exhibitions, etc. (p. 46)	▲	Expand energy management systems for home and business use
Enhance the promotion of Green Products by making use of the Internet	Promoted Green Products on our websites (p. 70)	●	Promote Green Products
Develop a system to determine the environmental impact of product transportation	Identified environmental impact using the environmental performance data collection/calculation system (p. 63)	●	Promote the use of rail transport, increasing freight to 15,000 containers
Promote activities to enhance the credibility of Environmental Sustainability Report and plan for its early publication	Enriched the disclosed contents such as by adding Environmental Data from Manufacturing Sites and published the Report in June	●	Develop the Report into a Sustainability Report and increase disclosure of information Enrich the environmental pages of domain companies' websites
Hold stakeholder meetings	Held stakeholder meetings (twice) (p. 70)	●	Hold stakeholder meetings
Introduce in-house CO_2 emissions trading	Established an in-house CO_2 emissions trading system (p. 60)	●	Conduct trials of in-house CO_2 emissions trading
Expand green purchasing (e.g. introduction of low-emission vehicles)	Promoted the introduction of low-emission vehicles as company vehicles (p. 63)	●	Step up tree-planting activities
Expand the model activities of Love the Earth Citizens' Campaign	Promoted shopping bag reduction campaign through Eco-bag Model Families	●	Conduct effective publicity through events such as Symposium for Love the Earth Citizens' Campaign 2003
Increase LE families to 30,000 households	26,000 households (an increase of 5,000 households compared to 2001) (p. 81)	▲	Increase LE families to 30,000 households
Propose household energy-saving measures to the government at the Conference on "Wa-no-Kuni-Kurashi"	Recommended "Sensible Replacement" as a measure to prevent global warming at a household level	●	Lead the electronics industry to promote the energy conservation campaign
Carry out Green Plan 2010	Accomplished targets for Green Products, Clean Factory, etc. (pp. 51-52)	●	Promote environmental sustainability management through the Corporate, Domain, and Regional Environment Conferences and the Environmental Working Committee
Strengthen environmental management systems	Reorganized the environmental organization structure to match the new business structure	●	Operate the environmental information system globally
Prepare and carry out Matsushita's original environmental training curriculums	Developed environmental education materials for employees Launched e-learning system, an on-line environmental education (p. 54)	●	Provide the on-line environmental education of e-learning system to all employees
Evaluate the progress of the Green Plan 2010 as part of the performance of business divisions on a global basis	Evaluated progress of the Green Plan 2010 as part of performance of business divisions on a global basis (p. 51)	●	Increase understanding of the effects of environmental accounting Reflect the result in performance evaluation on a business domain level

▲ : More than 80% of targets accomplished　× : Less than 80% of targets accomplished

Environmental Sustainability Management and Promotion System

The strongest point of Matsushita's environmental sustainability management is the fact that the President himself chairs the Environment Conference. In line with the new business structure established in FY'03, the existing Environment Conference was renamed the Corporate Environment Conference. At the operation level, the "Domain Environment Conference" was created for each domain company, and the "Regional Environment Conference" for each region worldwide. These changes were aimed at delineating the roles of the corporate-level strategic decision-making functions and regional and domain-level executive functions with respect to environmental sustainability management.

Promotion of Environmental Sustainability Management

The most important aspect in promoting environmental sustainability management is to faithfully practice the Plan-Do-Check-Action cycle.

Our Environmental Activity Policy is formulated yearly based on the Corporate Management Policy announced every January, and on the decisions taken at the Corporate Environment Conference. By way of the Environment Activity Policy Meeting, this policy is clarified with the Environmental Officers of each domain company and each functional division, as well as with all employees. In FY'03, the announcement was relayed via in-house satellite broadcasting to 70 sites, an event in which 1,500 employees participated.

According to this policy, domain companies map out their own activity plans in line with the nature of their businesses and implement concrete actions. Each domain company evaluates its achievements according to the Group-wide Performance Evaluation Criteria of Environmental Sustainability Management, which are based on the Green Plan 2010.

In keeping with the results of performance evaluations, and global environmental trends, and stakeholders' feedback, all aspects of environmental sustainability management are assessed for purposes of further improvement.

■ **PDCA Cycle of Environmental Sustainability Management**

■ **Performance Evaluation Criteria of Environmental Sustainability Management (FY'03)**

Green Product Rating

Indicator *1	Criteria
Development of Super GP	1 model
or	
GP development rate	42%

Clean Factory Rating

Category	Indicator	Criteria
Energy	Energy-saving rate*2	Devices segment 7.0%
		Sets segment 3.5%
Chemical substances	Use of reduction-ranked substances	45% reduction*3
	Release and transfer of proper management-ranked substances	45% reduction*3
Waste	Reduction rate of emissions	2%
Water	Consumption per unit of sales	3% reduction*4

*1 See p. 64. *2 See p. 59. *3 Compared to FY'98 level (Japan).
*4 Compared to FY'02 level.

Promotion System

The Corporate Environment Conference, chaired by the President, is the most overarching organ that deliberates and determines plans and policies concerning environmental sustainability management. Based on the decisions made at this conference, the Corporate Environmental Affairs Division formulates environmental strategies, supports their implementation, and carries out verification of results. At domain companies and functional divisions, Environmental Officers appointed by company presidents and directors of functional divisions are responsible for promoting the strategies.

Also, for Group-wide themes, committees and projects are set up to assist in their promotion.

■ Corporate Environment Conference

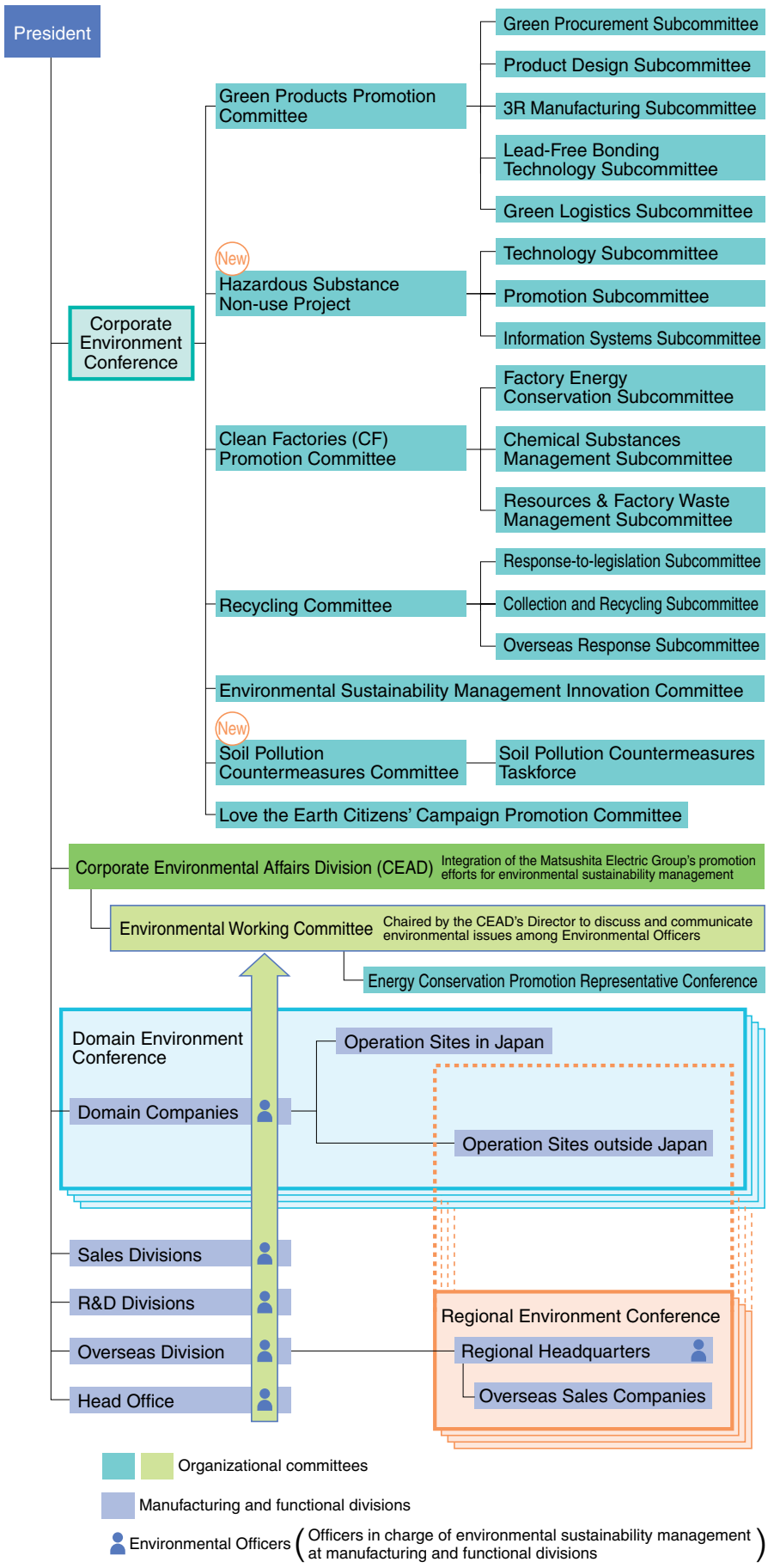
Function:	Top decision-making organ of environmental affairs Deliberation and determination of environmental policies
Chairman:	President of Matsushita Electric Industrial Co., Ltd.
Members:	Presidents of domain companies and directors of related functional divisions (Total: 38 members)
Secretariat:	Corporate Environmental Affairs Division
Meetings:	Twice annually; in the first and second halves of the year 12 meetings held since 1997

● Global Promotion System

To respond to the increasing number of environmental laws and regulations in the world, and to carry out the same high level of environmental sustainability management worldwide, the roles of the Regional Environment Conference held in each region were clearly defined. Starting in April 2003, the Conferences integrated regional environmental efforts toward raising the overall level of environmental activities and staying ahead as an environmentally leading company.

Global Environment Conference held in Japan in October 2002

■ Environmental Sustainability Management Promotion System



Acquisition of ISO 14001 Certification

To support Group-wide environmental sustainability management, an environmental management system was established at each site and acquisition of ISO 14001 certification was promoted. In November 1995, the Kadoma Site of Panasonic AVC Networks Company became the first to obtain ISO 14001 certification. In FY'96, Matsushita announced its policy to acquire ISO 14001 certification in all of its manufacturing sites worldwide, and by the end of March 1999, this goal was accomplished. Presently, we are promoting certification of non-manufacturing sites and affiliated companies that have newly commenced environmental activities. For new manufacturing sites, the target set for the acquisition is within 3 years. As for recertification audits conducted every 3 years, 91% of our manufacturing sites have already completed the process, indicating that environmental management systems have solidly taken root at these sites.

■ **Acquisition of ISO 14001 Certification**

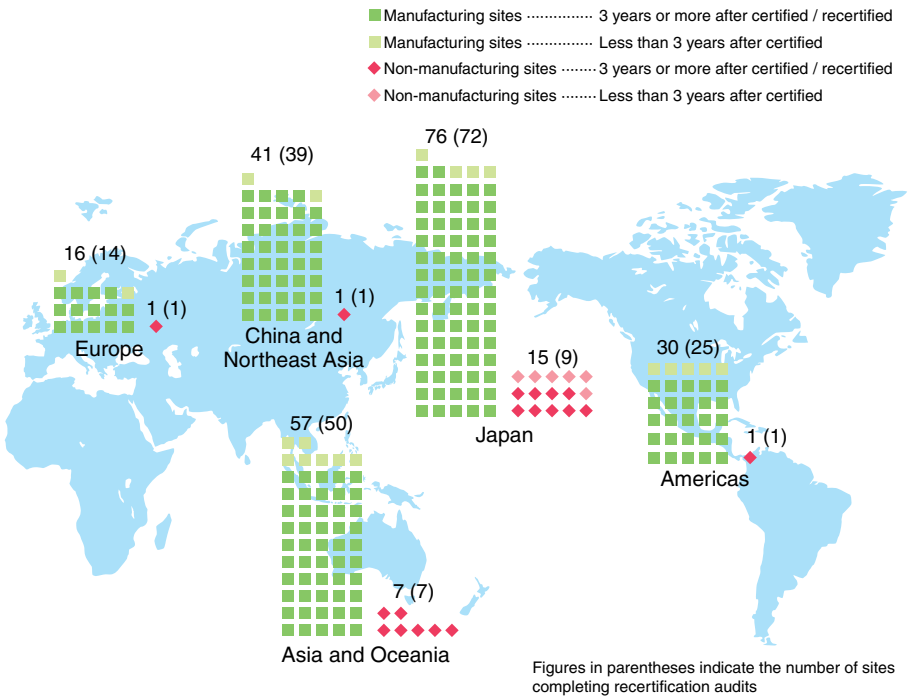
FY	Number of certified sites
End of FY'00	280
End of FY'01	257
End of FY'02	245 Acquisition rate: 99% of the manufacturing sites established more than 3 years ago

DATA ISO 14001 Certification Status ➡ pp. 83-84

Environmental Audits

To verify the effectiveness of environmental management systems and actual results of environmental performance, internal audits according to ISO 14001 and external audits by independent auditing firms are conducted once a year. Based on audit results, corrections are made wherever necessary for continual improvement.
To conduct appropriate and strict internal audits, Environmental Auditor Training Seminars are regularly held for training approximately 500 qualified auditors every year.

■ **Number of ISO 14001-certified Sites by Region**



Figures in parentheses indicate the number of sites completing recertification audits

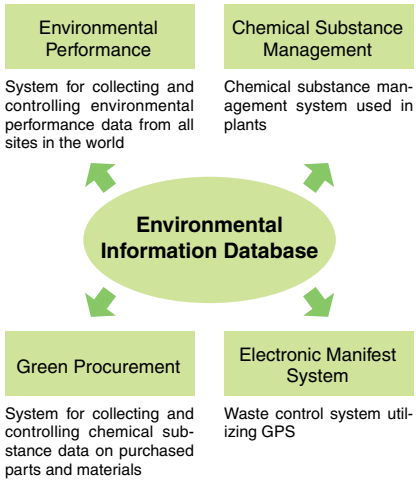
Compliance with Laws and Regulations

Information on newly enforced laws and regulations is collected through regional headquarters. At each site, applicable laws and regulations are reviewed taking into account the nature of business and regional characteristics based on the ISO 14001. For daily operations, voluntary standards are established. They are usually more stringent than those required by laws and ordinances, and in case of violation, remedial measures are taken immediately. In Japan during FY'02, there were 6 cases that exceeded the values stipulated in laws, regulations or agreements, which were all related to water quality. All cases were reported to the government and remedial measures were implemented.

Development of Environmental Information Systems

For proper operation of environmental management systems, quick and accurate collection, calculation, and analysis of environment data are essential. To this end, environmental information systems are being developed and trial operations are being carried out. In the near future, the systems will facilitate collection and analysis of global environmental performance data.

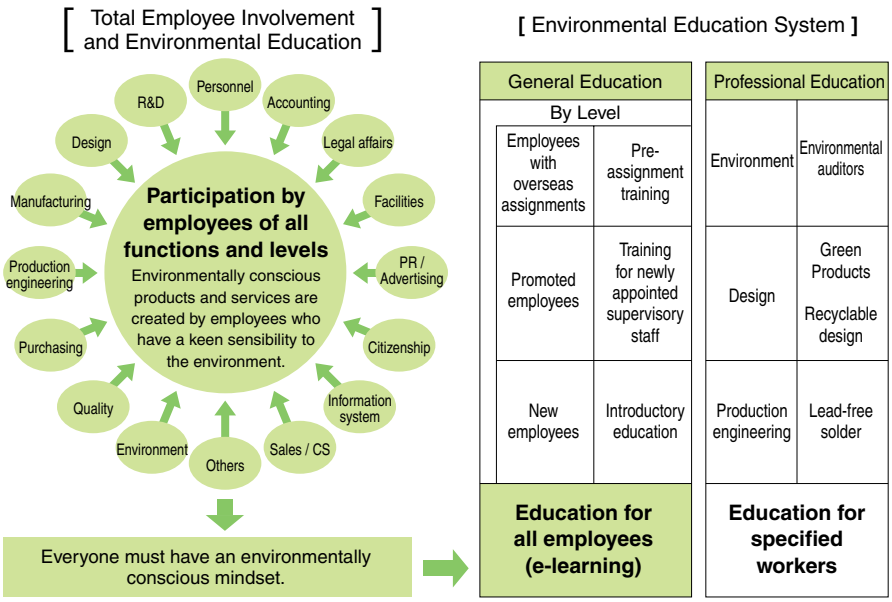
■ **Outline of Environmental Information Systems**



Environmental Education and Awareness-raising

The foundation of environmental sustainability management is the "people" who support the business. Only when employees in all functions and at all levels develop an environmentally conscious mindset, can eco-friendly products and services be produced. In FY'02, Matsushita established an e-learning system, which is an on-line environmental education infrastructure that enables all employees to learn anytime, anywhere. The in-house forum was a new endeavor that brought together Matsushita employees from all over the world. The forum left a strong impression on its many participants.

■ **Environmental Education**



Environmental Education System

The environmental education system is divided into general education designed for all employees, and professional education designed for specific duties or operations. General education includes the gaining of the basic environmental knowledge required of a corporate employee, and also the understanding of Matsushita's principles, policies, and activities. All employees with overseas assignments are required to attend environmental training before departure. In FY'02, six training sessions were held, attended by 159 employees.

● Emergency Training

At every site, operational procedures are thoroughly enforced and emergency training is carried out covering the operations that have a great environmental impact.

Training in retrieving spilled oil at Panasonic Communications Co., Ltd.

● Environmental Education Using e-learning System

In March 2003, the "e-learning system" using the Internet was launched to provide a thorough and efficient environmental education to every employee in Japan. The system was tested at two operation sites, with the participation of about 500 employees. It is scheduled to go into full operation in FY'03.

TOPICS

Hosting of In-house "Sustainable Business Forum 2002"

In October 2002, a forum titled "Create Environmental Businesses in Every Business Domain" was held for employees, with about 1,800 attending. Using the keyword "sustainable development," the forum provided a wide range of information designed to raise environmental awareness, including examples of progressive environmental businesses undertaken by companies within and outside Matsushita, seminars, and exhibits of about 130.

■ **Overview**

Date: October 23 (Wed.)-25 (Fri.), 2002

Place: Matsushita Gymnasium (Osaka, Japan)

Contents: (1) Exhibition (4 zones)

Future World 2025 Zone
Inspiration Zone
Business Tomorrow Zone
Green Suppliers Zone

(2) Seminar

- Panel discussion by top management
- 4 lectures given by environmentally progressive companies outside Matsushita
- 2 lectures on environmentally progressive activities at Matsushita

Lecture on "Sustainable Businesses and New Consumers" by British guest speaker, Dr. Norman Myers

Representatives from engineering and sales divisions discussing environmental businesses

Environmental Accounting

Identifying costs and benefits in monetary terms is the first step of business management. In this sense, environmental accounting is a tool that serves as the base for environmental sustainability management. In addition to the environmental conservation costs and the in-house economic benefits, Matsushita has calculated in monetary terms the environmental conservation benefits, and the electricity savings achieved as a result of using energy-saving products.

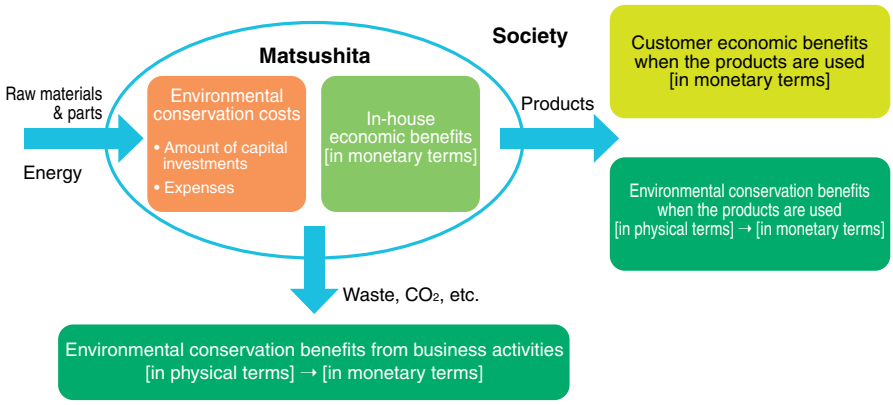
Principle of Environmental Accounting

Environmental accounting consists of "environmental conservation costs" and "environmental benefits." In the "environmental conservation costs," capital investments and expenses are calculated separately for the fiscal year.

Until FY'00, only the "in-house economic benefits (in monetary terms)" and the "environmental conservation benefits (in physical terms)" were calculated as "environmental benefits." From FY'01, the "environmental conservation benefits (in monetary terms)" has also been calculated, in order to better understand the benefits of environmental sustainability management, which include benefits for the global environment as well as in-house economic benefits seen in easily understandable monetary values. In FY'01, the benefits from reduction in CO_2 emissions were calculated in monetary terms. Additionally, in FY'02, the benefits from reduction in the release of chemical substances and reduction in water consumption were also calculated.

Of the "environmental conservation costs," the environment-related R&D costs are included in customer economic benefits because they contribute to a reduction in electricity costs when the products are actually used.

■ **Matsushita's Environmental Accounting System**



FY'02 Environmental Accounting

In FY'02, the environmental conservation costs totaled 48.9 billion yen, which included 11.5 billion yen for capital investments and 37.4 billion yen for expenses. (In FY'01, the total was 54.6 billion yen, with 18.2 billion yen for capital investments and 36.4 billion yen for expenses.) With the Group-wide decrease in overall capital investments, Matsushita's environment-related capital investments also decreased, which accounted for 4.6% of the total capital investments. Environment-related R&D costs accounted for 3.1% of the total R&D costs.

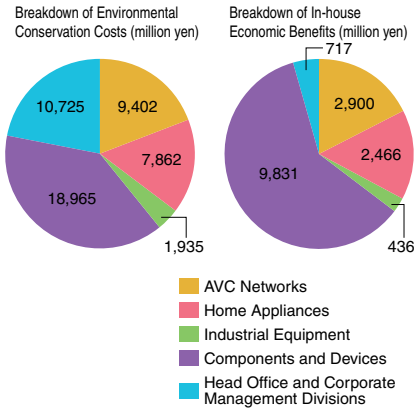
In terms of the environmental benefits, the in-house economic benefits were 16.4 billion yen; the environmental conservation benefits (in monetary terms) totaled 4.7 billion yen; and the customer economic benefits (Japan) amounted to 36.9 billion yen. Including contribution to the society, the environmental benefits outweighed the environmental conservation costs of 48.9 billion yen.

■ **Scope of Environmental Accounting**

Accounting period: April 2002 - March 2003
Companies covered: Matsushita Electric Industrial Co., Ltd., ten main subsidiaries, and other subsidiaries inside and outside Japan (p. 1)

Environmental Accounting covers the same scope as the environmental performance data.

■ **FY'02 Environmental Accounting by Business Segment**



Future Direction

Matsushita pursues information disclosure, thereby aiming at transparent business management. Environmental accounting is an essential tool in the decision-making process, providing economic information related to environmental sustainability management. This is why we think it is important to take, in addition to operations carried out within Matsushita, the entire life cycle of a product into consideration. In each stage of a product's life cycle, the environmental conservation costs and environmental benefits must be accurately identified for energy efficiency, management of chemical substances, and resource conservation. Matsushita will seek to develop indexes that can assess the efficiency of environmental activities.

Environmental Conservation Costs

Capital investments and expenses for environmental activities (million yen)

Category		Capital Investments	Expenses	Total	Major Areas Addressed	Reference Page
Costs within business areas	Pollution prevention	2,040	5,152	7,192	Pollution prevention (air, water, and soil contamination, noise, vibration, offensive odor, land subsidence, etc.)	53, 67-68
	Global environment conservation	3,626	1,523	5,149	Global warming prevention, energy conservation, ozone layer protection, etc.	59-60
	Resource recycling	381	5,591	5,972	Reduction, recycling, and proper treatment of wastes; reduction of water consumption	61
	Subtotal	6,047	12,266	18,313		
Upstream / downstream costs		628	679	1,307	Collection, recycling, and proper treatment of end-of-life products, and commissioning of the recycling to external organizations	69
Administration costs		727	8,778	9,505	Development and implementation of the environmental management system, information disclosure, environmental advertisement, employee education, etc.	53-54, 70-71
R&D costs	Technology development	3,950	12,718	16,668	Development of environment-oriented elemental technology and installation of facilities for its production	45, 64-66
	Packaging / distribution development	15	301	316	Development and introduction of environmentally conscious packaging, R&D for reducing environmental impact in distribution	63,66
	Subtotal	3,965	13,019	16,984		
Social activity costs		0	38	38	Donation to and support for environmental activities conducted by environmental conservation organizations and local residents	79,81
Environment remediation costs		107	2,635	2,742	Studies on and measures against past contamination (groundwater, soil, etc.)	67-68
Total		11,474	37,415	48,889		

Note: Expenses include labor costs but not the depreciation of capital investments. When the entire amounts of capital investments and labor costs cannot be regarded as environmental conservation costs, differences or appropriate portions (divided proportionally) are calculated. R&D costs are limited to investments and expenses for environment-oriented technology development, and do not include product development costs utilizing such technology.

Environmental Conservation Benefits

Improvement in environmental performance (in physical terms) – direct environmental impact from business activities and indirect environmental impact from products in use – from the previous year

Category			Reduced Amount	Reference Page
Environmental conservation benefits from business activities	CO_2 emissions		22,398 tons	59-60
	Emissions of greenhouse gases (excluding CO_2) *1		(138,348 tons)	60
	NOx emissions (Japan)		674 tons	61
	SOx emissions (Japan)		134 tons	61
	Emissions of controlled chemical substances (Japan)		29.5 tons	60
	Industrial waste for final disposal		11,773 tons	61
	Water use		1.45 million m^3	61
Product's environmental conservation benefits during use	CO_2 emissions*2 (Japan)		606,000 tons	64-66
	Packaging materials used	Corrugated cardboard	2,380 tons	66
		Expanded polystyrene	(237 tons)	

Environmental Conservation Benefits (in monetary term)*3

Environmental conservation benefits (in monetary terms) to indicate improvement in environmental performance (in physical terms) (million yen)

	212
	(1,307)
	45
	7
	2 *4
	–
	52 *5
	5,727
	–
Total	4,738

Note:
*1: CO_2 equivalent
*2: Estimated amounts of emissions from four major home appliances (TVs, refrigerators, air conditioners, and washing machines) sold in Japan (Lifetime CO_2 emissions when using FY'01 models – Lifetime CO_2 emissions when using FY'02 models) × Number of units sold in FY'02 in Japan
*3: The coefficient used to convert physical terms into monetary terms is set based on the costs necessary for curbing 1 ton of environmental load in Japan. CO_2=9,450 yen/ton is derived from the costs necessary for curbing CO_2 emissions in order to achieve the target specified in the Kyoto Protocol (amount of carbon tax estimated by the Ministry of the Environment). The following coefficients are derived from the costs used to curb environmental load in the past: NOx = 66,315 yen/ton, SOx = 50,159 yen/ton, VOC = 50,090 yen/ton, underground water = 36 yen/ton (using research data from Integrated Environmental and Economic Accounting, published by the former Economic Planning Agency).
*4: Volatile organic compounds (VOC), major chemical substances discharged
*5: Groundwater which does not incur any cost for the supply
*6: Figures in parentheses denote negative values.

In-house Economic Benefits

"Economic benefits as a by-product of environmental conservation measures" : Cost savings and gains verified by firm evidence, obtained as a result of promoting environmental conservation measures (million yen)

Category		Single Year	Aggregate
Cost savings	Energy conservation at operation sites	2,085	6,813
	Reduction of waste treatment expenses	598	1,680
	Reduction of water and sewage costs	139	572
	Reduction of packaging materials and distribution expenses	1,000	2,864
Gains	Gain on sale of by-products with value, resulting from waste recycled from operation sites	4,130 (single year)	
	Gain on sale of by-products with value, resulting from recycling of end-of-life products	291 (single year)	
Total		8,243	16,350

Note:
- Presumed benefits attributable to avoidance of potential risks and enhanced corporate image are not included in the figures.
- The aggregate (expressed in monetary terms) is derived from reduction effects obtained in FY'02 from capital investments made in the past three years and in FY'02.

Customer Economic Benefits

Economic benefits to customers, calculated in terms of reduction in our products' electricity costs during use, resulting from improved energy efficiency of products

Savings in electricity costs during product use (Japan)	
Savings in electricity	1,603.2 million kWh
Savings in electricity costs	36.874 billion yen

Note:
- Estimated amounts of emissions from four major home appliances (TVs, refrigerators, air conditioners, and washing machines) sold in Japan (Lifetime electricity consumption by FY'01 models – Lifetime electricity consumption by FY'02 models) × Number of units sold in FY'02 in Japan
- Monetary conversion coefficient of electricity price: 23 yen/kWh
  Source: EDMC Handbook of Energy & Economic Statistics in Japan 2002

Product Life Cycle and Environmental Impact

Matsushita uses a multitude of resources for parts and materials, and its manufacturing process itself also utilizes various resources from earth, such as energy and water. In environmental sustainability management, it is essential to accurately identify the environmental impact resulting from the entirety of our business activities. Although limited in scope, our studies have covered the product life cycle from an environmental perspective and calculated the environmental impacts. We will continue to assess the effects that our manufacturing activities have on society in order to implement environmental measures with greater effectiveness.

■ Calculation Model

Region covered: Japan

Manufacturing (Input items)

- Electricity: Amount of electricity purchased from electric utilities
- Oil: Amounts of fuel oil and kerosene used
- Gas: Amounts of city gas and LPG used
- Water: Amounts of municipal water, industrial water, and groundwater used
- Resources: Amounts of raw materials used for the ten major product categories*1, weight of packaging materials, and amounts of chemical substances used

Manufacturing (Output items)

- CO_2: Emissions of carbon dioxide associated with the use of electricity, gas, oil, etc.
- NOx: Emissions of nitrogen oxides resulting from the use of gas and oil
- SOx: Emissions of sulfur oxides resulting from the use of oil
- Chemical substances: Release and transfer of chemical substances into the air and water
- Effluent: Amount of effluent discharged into the sewage system
- Waste: Amounts of waste generated and finally disposed

Marketing and Distribution

Transportation from manufacturing sites to retailers within Japan

Transportation within Japan of products imported from manufacturing sites outside Japan

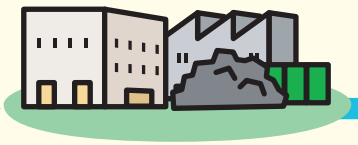
Use

Calculated based on the electricity consumed by each of the ten major product categories*1 shipped in FY'02

Collection and Recycling

End-of-life products in the four product categories designated by the Law for Recycling of Specified Kinds of Home Appliances (TVs, refrigerators, air conditioners, and washing machines) collected in FY'02

*1 Ten major product categories (TVs, plasma displays, VCRs, DVD recorders, washing machines, microwave ovens, dishwashers, refrigerators, air conditioners, and cellular phones)



Resources

Metals*1	108,000 tons
Plastics*1	56,000 tons
Glass*1	29,000 tons
Others*1	18,000 tons
Packaging materials	45,000 tons
Chemical substances	64,000 tons

Material Procurement (p. 62)

Approximately 5,500 companies

Collected resources

Metals	33,000 tons
Glass	11,000 tons
CFCs	202 tons
Others	10,000 tons

Resources collected and processed into transferable states and subsequently delivered to contractors, for free or for money, that use them as product parts or materials

Earth's Resources

Emitted into the air

CO_2	1.36 million ton -CO_2
NOx	1,416 tons
SOx	142 tons
Chemical substances	307 tons

Discharged into water

Effluent	6 million m³
Chemical substances	14 tons

Waste

Amount generated	172,000 tons
Amount for final disposal	3,000 tons

OUT

Manufacturing (pp. 59-61)

147 manufacturing sites in Japan

IN

Energy

Electricity	2.12 billion kWh
Oil	61,000 kℓ
Gas	200 million m³

Water

Amount of water used 42 million m³

Emitted into the air

CO_2 98,000 ton -CO_2

Calculated the amount of CO_2 emissions from the amount of fuel used

OUT

Marketing and Distribution (p. 63)

14 sites in Japan (for electric home appliances)

IN

Energy

Fuel for vehicles 36,000 kℓ

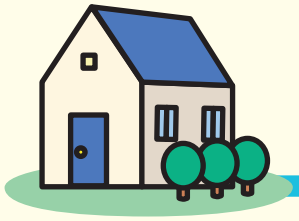
Fuel used for truck transportation

Emitted into the air

CO_2 7.86 million ton -CO_2

Calculated the lifetime CO_2 emissions throughout product use

OUT



Use (pp. 64-66)

Consumers

IN

Energy

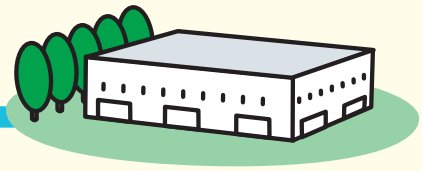
Electricity 20.75 billion kWh

Estimated the lifetime electricity consumption, based on hours of use and product life

End-of-life products

Amount collected 84,000 tons

Weight of the collected end-of-life products in the four product categories designated by the Law for Recycling of Specified Kinds of Home Appliances



Collection and Recycling (p. 69)

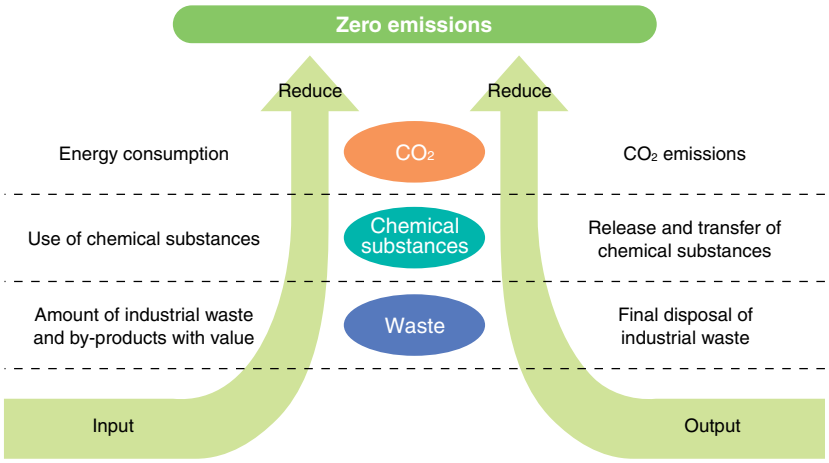
27 recycling points in Japan

Recycling through various recycling channels

Input to and Output from Production Activities

The basis of the Clean Factories (pollution-free factories) initiative is the zero-emission concept, which aims at minimizing all input to and output from manufacturing sites in order to reduce environmental impact and increase management efficiency. Matsushita is making serious efforts to reduce the environmental impact of its activities in order to establish "true zero-emission" factories that are in harmony with local communities and the global environment.

■ **Aspiring to Become Clean Factories**



Global Warming Prevention

● Promotion of the Three-year Energy Conservation Plans

Energy conservation activities are an important means for strengthening management as well as for preventing global warming.

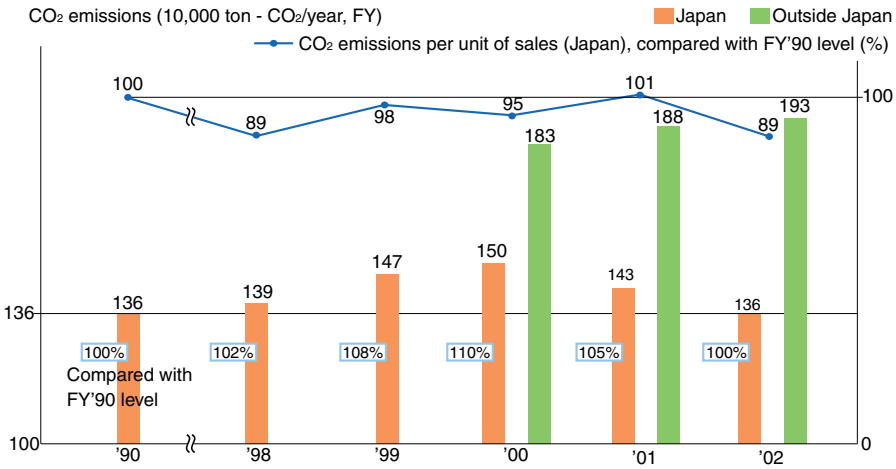
Matsushita's energy conservation activities are implemented according to the mid-term plan for reducing CO_2 emissions formulated in 1998 in the wake of UNFCCC/COP3. The plan aimed at reducing CO_2 emissions from all manufacturing sites in Japan by 7% from the FY'90 level, to be accomplished by 2010. To achieve this goal, site-specific targets were set up and each site has carried out measures according to its Three-year Energy Conservation Plan. Beginning in FY'02, an energy-saving rate*1 has been set up as an indicator of CO_2 emissions reduction. The reduction targets are determined based on the actual CO_2 emissions from the previous year. The target for the devices segment is 7%, and 3.5% for the sets segment.

*1 Energy-saving rate (%)
= Amount of energy saved in the current fiscal year (amount of CO_2 emissions reduced)
÷ Amount of energy used in the previous fiscal year (amount of CO_2 emissions)

● FY'02 Performance (Japan)

CO_2 emissions in FY'02 were 1.36 million tons (CO_2 equivalents). This was at the same level as in FY'90 and outperformed the FY'02 target of restraining emissions to 103% of the FY'90 level. This was accomplished despite a great increase in production from FY'01. It shows the effectiveness of the Group-wide implementation of three-year energy conservation plans and the performance evaluation system. The separation of the LCD business from Matsushita for business consolidation with another company was also a factor contributing to this impressive performance in FY'02.

■ **CO_2 Emissions per Unit of Sales**



Note: Basis for calculating the Matsushita Electric Group's CO_2 emissions

- Calculation was based on the Environmental Reporting Guidelines issued by Japan's Ministry of the Environment. The CO_2 emission factor used was taken from the results of the Review of Methods for Calculating the Emissions of Greenhouse Gases conducted by the Ministry of the Environment. The electricity factor in the Review was announced only up until FY'00, which was then revised in August 2002 retroactive to 1990. The data was therefore recalculated accordingly in this report using the new factor. Beginning in FY'01, the factor announced by The Federation of Electric Power Companies Japan was adopted (both factors are based on the average of all power sources at the receiving end).
- The amount of CO_2 reduction resulting from the use of a cogeneration system is based on a comparison with the CO_2 emission factor of thermal power generation of the purchased electricity.
- The CO_2 emission factors of electricity for sites outside Japan were calculated based on the composition of fuels used for power generation in those countries.

DATA CO_2 Emission by Region ➡ p. 85
Energy Consumption, Heavy Oil and Kerosene Consumption, City gas Consumption, Purchased Power Consumption, Electricity Produced by Cogeneration, CO_2 Emissions per Unit of Joule (based on consumption), Renewable Energy Consumption ➡ p. 86

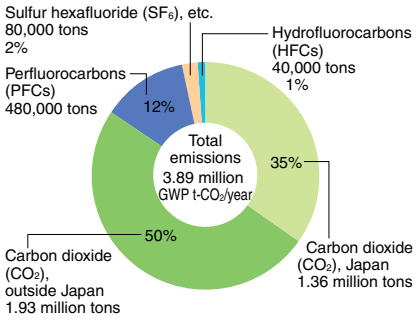
● FY'02 Performance (Global)

Matsushita set global targets to respond to expansion in overseas operations. CO_2 emissions per unit of sales increased by 2% from the FY'00 level, a result which fell short of the reduction target of 2%.

● Reduction in the Emissions of Greenhouse Gases

Greenhouse gases other than CO_2 are used by Matsushita, such as HFC as refrigerant for air conditioners and PFC and SF_6 in the production of semiconductors. Particularly in the semiconductor field, which accounts for one-fourth of our greenhouse gas emissions, Matsushita has formulated voluntary action plans and works towards the goal agreed upon at the World Semiconductor Council (WSC). In FY'02, a reduction of approximately 38,000 GWP tons was accomplished as a result of reduction in the use of these gases, use of substitute gases, and installation of pretreatment equipment.

■ **Composition of Greenhouse Gas Emissions**



GWP: Global Warming Potential

● In-house CO_2 Emissions Trading

Upon studying the implementation of in-house CO_2 emissions trading, Matsushita launched a test implementation of its original method in FY'03 (using only virtual trading rather than actual monetary transactions in FY'03). This method uses Matsushita's energy-saving indicator, the "energy-saving rate*1," as its base, and is not easily affected by the mode of business or the volume of production.

Comprehensive Management of Chemical Substances

To develop environmentally conscious products and reduce the risk of environmental pollution, Matsushita set up the "Matsushita Electric Group Chemical Substances Management Rank Guidelines." Based on hazard assessment, the controlled chemical substances were categorized into three ranks, "Prohibition," "Reduction," and "Proper Management." The reduction plan for chemical substances, known as the "33/50 Reduction Program*2", is implemented on a global scale.

*2 A program to reduce the use of reduction-ranked substances and the release and transfer of proper management-ranked substances by 33% in three years and by 50% in six years. The base years used for the activity are FY'98 in Japan, FY'00 in Asia and Oceania, and FY'02 in other regions.

■ **Matsushita Electric Group Chemical Substances Management Rank Guidelines, Version 2.1** (for Factories)

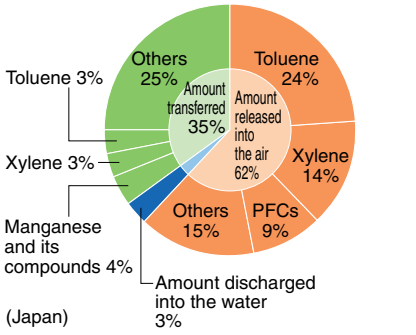
Rank	Definition	Substance Group
Prohibition	Prohibit use	33
Reduction	Reduce the amount used	112
Proper Management	Reduce the amount released / transferred	361
Total: 506 substance groups (1,413 substances)		

DATA Use and Release / Transfer of Chemical Substances (by Region) ➡ p. 85
Release and Transfer of Chemical Substances, Material Balance of Chemical Substances ➡ p. 87

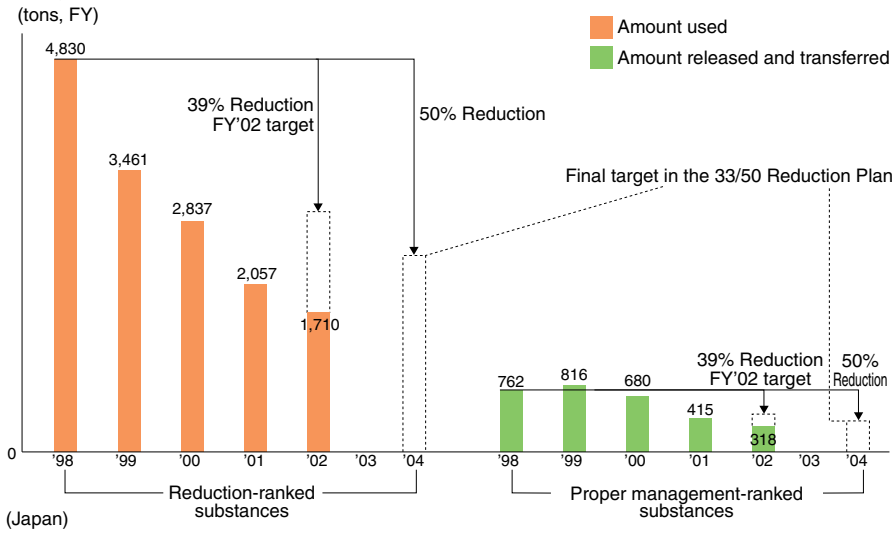
● FY'02 Performance (Global)

The results of the 33/50 Reduction Plan at our manufacturing sites within Japan are as follows. Compared to the FY'98 level, the use of reduction-ranked substances was reduced by 65% and the release and transfer of proper management-ranked substances decreased by 58%, both substantially surpassing the 39% targets originally set for each category. In FY'02, in particular, the introduction of lead-free solder had a great effect on the reduction of lead, which was a reduction-ranked substance. The use of isobutane (not a controlled substance) to replace CFCs as a refrigerant for refrigerators contributed greatly to reduction in the use of about 18 tons of HFC-134a, a proper management-ranked substance. In terms of activities undertaken outside of Japan, the Matsushita Display Devices Company of America used equipment to collect toluene, a reduction-ranked substance, and used detoxification technology that incinerates the substance completely, successfully reducing the release and transfer of the substance.

■ **Breakdown of Release and Transfer**



■ **Use, and Release and Transfer of Chemical Substances**



Waste Reduction

FY'02 Performance (Japan)

To further reduce the amount of industrial waste for final disposal, Matsushita has set up a "zero waste emissions" target in Japan as of the year 2000. It called for "making every effort to reduce the amounts of industrial waste and general waste from business activities to zero by the end of March 2003." Thanks to measures taken to reuse and recycle wastes, the target was achieved, with the recycling rate reaching 98.2% in FY'02. In terms of individual sites, 76% of the 147 total sites achieved zero waste emissions.

■ Definition of Zero Waste Emissions

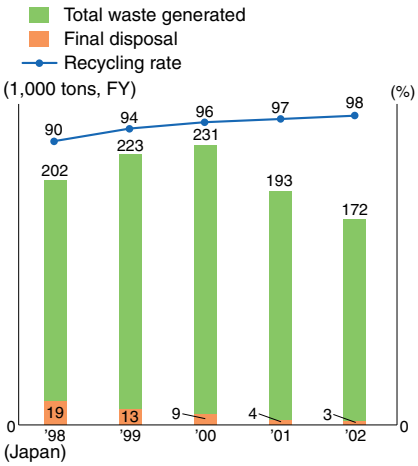
Recycling rate: 98% or more

$$\text{Recycling rate} = \frac{\text{Mass of recycled materials}}{\text{Mass of recycled materials} + \text{Mass of waste for final disposal}}$$

FY'02 Performance (Global)

With the increasing establishment of manufacturing sites outside Japan, Matsushita has set up a global target of "controlling waste generation" as the basis of waste reduction. Working towards the target of a 4% reduction using FY'00 as the base year, Matsushita succeeded in achieving a 14% reduction in Japan, but failed to meet the target outside of Japan, with an increase of 22%. In future efforts, Matsushita is planning to set a new target of reducing over 2% of the waste from the previous fiscal year's mark, irrespective of changes in production.

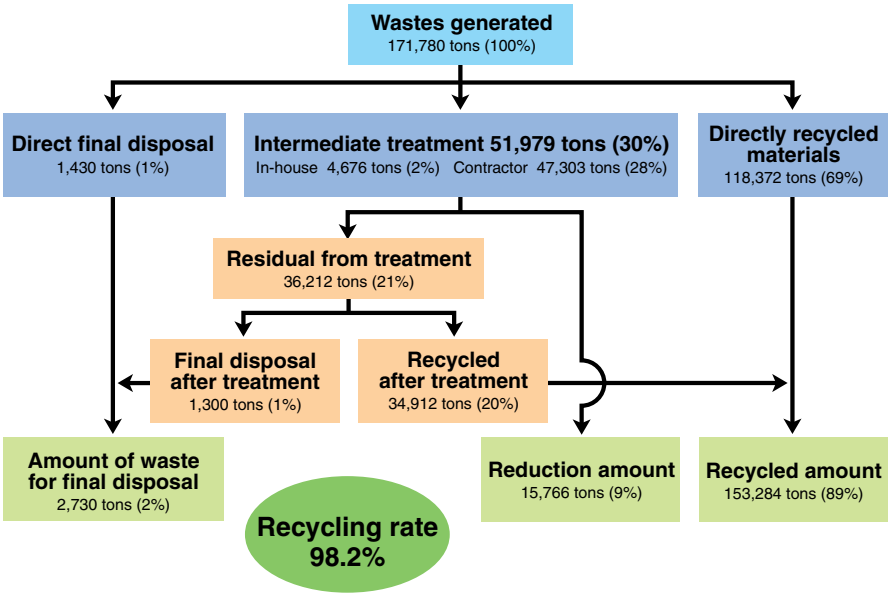
■ Amounts of Waste Generated and for Final Disposal, and the Recycling Rate



DATA Generated Waste and By-products with Value (by Region) ➡ p. 85
Industrial Waste / By-products with Value and Final Disposal ➡ p. 86

Highlights 2002 Achieve Zero Waste Emissions p. 17

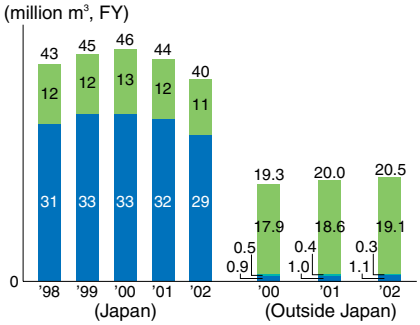
■ Management Flow for Industrial Waste and By-products with Value (Japan)



Effective Use of Water Resources

All Matsushita sites are making efforts toward the effective use of water and a reduction in its consumption. Water consumption per unit of sales in FY'02, when compared to FY'00 levels, experienced an increase of 2.3% in Japan, a reduction of 2.0% outside Japan, and a reduction of 3.4% on a global scale, against the intended target of 2%.

■ Water Consumption



DATA Water Consumption by Region ➡ p. 85

Water Recycling Efforts

The devices segment, including semiconductors and electronic components, accounts for about 80% of the water used by Matsushita. The Semiconductor Company's Okayama Plant has succeeded in building a closed effluent system that uses improved wafer cleaning and ion treatment processes, eliminating the discharge of effluent and achieving 100% recycling of water resources. Together with other measures, it has raised its overall water-recycling rate to 66%.

Impacts on the Air and Water

DATA Environmental Performance Data (by Region) ➡ p. 85

Material Procurement

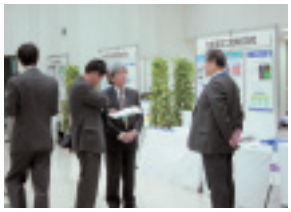
Matsushita conducts its business with the support of about 5,500 material suppliers. By ensuring that every piece of material we purchase is eco-friendly, we are able to provide customers with environmentally conscious products. Since the establishment of the Green Procurement Standards for materials in FY'99, we have examined the chemical substances contained in parts and materials. In FY'02, we further strengthened these standards and promoted their enforcement.

Green Procurement

In FY'02, Matsushita made efforts toward reshaping its environmental partnership with material suppliers. First, Matsushita requested suppliers to submit the Agreement on Matsushita Electric Group's Environmental Initiatives. The Green Procurement Standards were revised, requiring the suppliers to acquire ISO 14001 certification and to disclose information on hazardous chemical substances. Our Chemical Substances Management Rank Guidelines were also revised, reviewing the substances in each rank (Guidelines for Products). The prohibition rank was divided into two levels: level 1 identifying substances that require the suppliers to submit a "Non-use Warranty" and "Chemical Substance Content Survey Sheet," and level 2 for the remaining substances.

1st Green Suppliers Exhibition

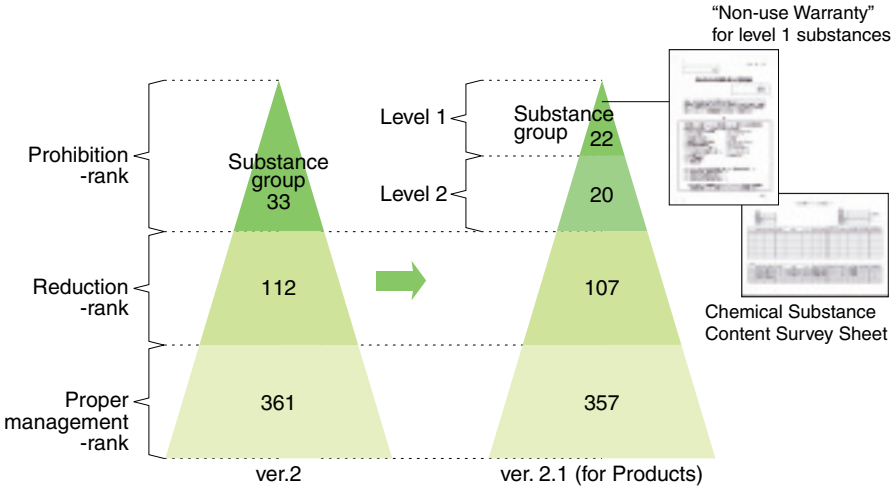
It is necessary to have the cooperation of material suppliers in order to comply with the EU RoHS (Restricting the Use of Hazardous Substances) Directive and to abolish the use of the six substances announced in the Green Plan 2010. Matsushita's Corporate Purchasing Division and the Corporate Environmental Affairs Division jointly sponsored the "Green Suppliers Exhibition" in October 2002. Suppliers were asked to display and introduce new materials that could replace the six substances. Seventeen companies, including manufacturers of electrical wires, glass, and chemicals, exhibited their products.



Green Suppliers Exhibition

URL **Green Procurement Standards, ver. 2**
Chemical Substances Management Rank Guidelines, ver. 2.1
matsushita.co.jp/environment/en/suppliers/

■ **Chemical Substances Management Rank Guidelines, ver. 2 and ver. 2.1 (for Products)**



Green Purchasing

In FY'01, Matsushita formulated its "Rules for the Promotion of Green Purchase" for the active purchase of environmentally conscious products. So far, criteria have been set up for office supplies. These criteria will be further expanded to include more product categories in the future.

■ **Performance of the Green Purchase of Office Supplies (Japan)**

Guideline (Category)	Purchase	Compliance to guideline
Copy paper	163 million pieces	98 million pieces (60%)
Stationery	236 million yen	140 million yen (59%)
Printing paper / Equipment	Data being gathered	
Company vehicles	See p. 63	

Data gathered at the bulk purchasing section

Recycling of Uniforms

Matsushita has studied the recycling of uniforms since 1998. It became the first company in Japan to use Teijin Fibers Limited's new material for female uniforms in July 2002. This material can be recycled completely with Teijin's fiber-to-fiber recycling technology. For male uniforms, "Ecolog" offered by Ecolog Recycling Japan was adopted to enable the recycling of zippers and buttons. To facilitate this, Matsushita has set up an in-house uniform collection and recycling structure.

■ **Collection and Recycling of Uniforms (Japan)**

Sites and offices
Return to
Matsushita Business Services Co., Ltd.

Matsushita Business Services Co., Ltd.
40 service centers
Return to manufacturers after temporary storage

Return directly to manufacturers

Manufacturers
(Manufacturing using recycled materials)

- Compared to manufacturing using crude oil as material, this recycling cuts energy consumption by 30% and CO_2 emissions by 20% (female uniforms).
- Compared to manufacturing using collected PET bottles as materials, this recycling cuts energy consumption by 73% (male uniforms).

Shift to Green Distribution

"Distribution" plays an important role in delivering products to customers efficiently without affecting their quality. Until recently, the emphasis of our environmental initiatives had centered on factories and products. In the throes of expanding our efforts into the field of distribution, we have started the "Green Distribution" initiative. Our new mid-term goal facilitates a shift from trucks to various alternative transportation modes, including railroads and low-emission vehicles, marking FY'02 as the first year of Green Distribution.

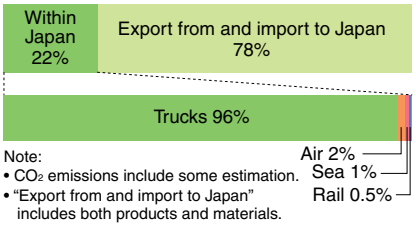
Large 31-foot rail freight container introduced in January 2003, created exclusively for Matsushita. Blue sky and white clouds drawn on the container are meant to represent Green Distribution.

CO_2 Emissions from Transportation

We collect data on CO_2 emissions from product transportation within Japan as well as import to and export from Japan. Total CO_2 emissions in FY'02 reached 440,000 tons. CO_2 emissions resulting from the product transportation within Japan were 98,000 tons, with trucks accounting for 96%.

■ **Breakdown of CO_2 Emissions from Transportation** (rough estimates, FY'02)

CO_2 emissions: 440,000 ton-CO_2

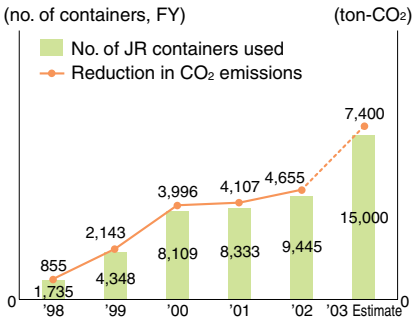


Note:
- CO_2 emissions include some estimation.
- "Export from and import to Japan" includes both products and materials.

Modal Shift

Modal shift (a shift of transportation modes from trucks to railroads, ships and others that exert less of an environmental impact) is a major tool in the reduction of CO_2 emissions. A shift to rail transportation can cut CO_2 emissions to approximately one-eighth. In FY'02, facilitating the gradual shift in the national trunk line transportation networks, Matsushita set up eleven new railroad routes and one domestic shipping route. As a result, the number of Japan Railway containers (calculated on a 5-ton container basis) used has reached 15,000 and CO_2 emissions are estimated to decrease by approximately 7,400 tons.

■ **Reduction in CO_2 Emissions Achieved by Modal Shift**



Note:
- The number of JR containers is calculated on a 5-ton container basis.
- Reduction in CO_2 emissions includes some estimation.

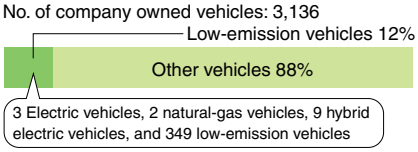
Introduction of Eco-friendly Vehicles

Matsushita owns about 3,000 vehicles, including vehicles for sales and business activities and trucks for local delivery. In order to switch these vehicles to eco-friendly ones, Matsushita established the "Environmental Policy for Company Vehicles" in December 2002, determining to replace all company vehicles with low-emission vehicles by FY'10.

■ **Introduction of Low-emission Vehicles**

(FY'02, Japan)

No. of company owned vehicles: 3,136



3 Electric vehicles, 2 natural-gas vehicles, 9 hybrid electric vehicles, and 349 low-emission vehicles

TOPICS

Development of Environmental Assessment Index for Transportation

Matsushita has developed an index of "transportation efficiency" for the environmental assessment of the transportation it uses. The value of transportation is defined by the mass being transported, and the environmental impact is defined by the amount of CO_2 emitted from the use of energy by a particular form of transportation. In setting targets and assessing measures, a "transportation factor," which compares this transportation efficiency with that of the base year, is used. This index was developed in conjunction with Hitachi, Ltd. and was announced in April 2003.

■ **Environmental Assessment Index for Transportation**

$$\text{Transportation efficiency} = \frac{\text{Transported mass}}{\text{CO}_2\text{ emissions from transportation}}$$

$$\text{Transportation factor} = \frac{\text{Transportation efficiency for the current year}}{\text{Transportation efficiency for the base year}}$$

Environmentally Conscious Product Design

A product has a life cycle. In the different phases of manufacturing, use, and disposal, the environmental impact resulting from the use of a product is often much greater than the impact from manufacturing the product itself. For this reason, Matsushita is using life cycle assessment as a base to discover when, where, and what kind of environmental impact is being generated.

Development of Green Products

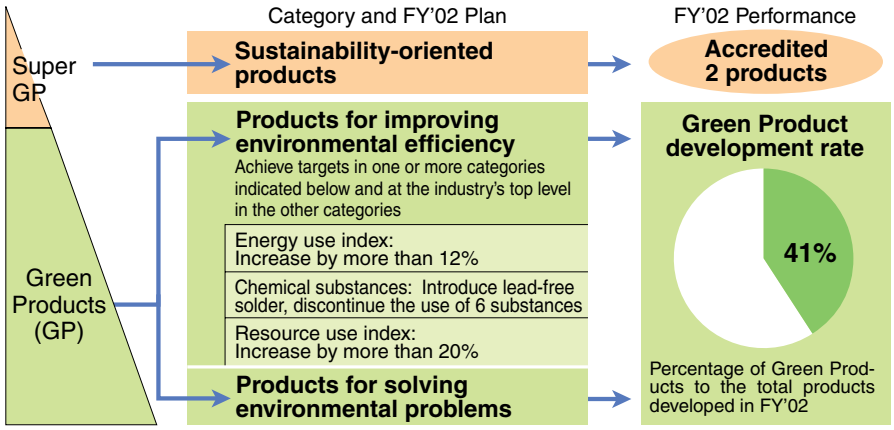
Matsushita calls products that feature environmentally conscious design "Green Products" (GP), which are divided into two categories. They are the "products for improving environmental efficiency," which minimize the impact on the environment during the product's life cycle*1, and the "products for solving environmental problems," which are developed with the objective of addressing environmental problems. In pursuit of a superordinate concept for Green Products, Matsushita is developing Super GP (Super Green Products). These products are acknowledged in-house as "sustainability-oriented products," which not only can dramatically improve environmental efficiency but also can create a dominant trend in facilitating the realization of a sustainable society.

*1 Life cycle means all phases of a product's life, including the gathering of raw materials, manufacturing, transportation, use, recycling, and disposal. The life cycle concept seeks a reduction of environmental impact not just in one phase, but in all phases.

● FY'02 Performance

Matsushita aims at expanding the development of Green Products to almost all products it develops (90% in FY'10). Among the products developed in FY'02, 583 models were accredited as Green Products. The rate of Green Product development was 41%, greatly exceeding the target of 28%. This represents about 40% of the estimated annual sales value of new products developed in FY'02.

■ **FY'02 Criteria for Accrediting Green Products and Performance**



■ **Definition of "Environmental Efficiency"**

$$\text{Energy use index} = \frac{\text{Product life} \times \text{Product function}}{CO_2 \text{ emissions over the entire life cycle}} \rightarrow \text{Indicates GHG*3 efficiency}$$

$$\text{Resource use index} = \frac{\text{Product life} \times \text{Product function}}{\text{Non-circulating resources over the entire life cycle*2}} \rightarrow \text{Indicates the resource efficiency}$$

*2 Resources newly extracted from the earth + Resources disposed of = 2 × Mass of resources input over the entire life cycle – Mass of 3R resources – Mass of 3R applicable resources

■ **Definition of "Factor X"**

$$\text{GHG*3 factor} = \frac{\text{GHG efficiency of an assessed product}}{\text{GHG efficiency of a reference product*4}}$$

$$\text{Resource factor} = \frac{\text{Resource efficiency of an assessed product}}{\text{Resource efficiency of a reference product*4}}$$

*3 GHG: greenhouse gas
*4 Generally 1990 core products

● Environmental Assessment Index "Factor X"

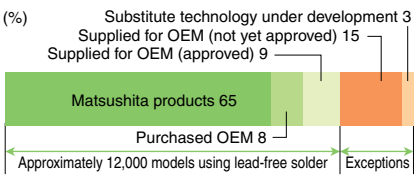
The use of the Energy Use Index and the Resource Use Index to indicate environmental efficiency is an original Matsushita concept announced in October 2001. Based on this concept, Matsushita joined forces with Hitachi, Ltd. to develop the index "Factor X." Announced in April 2003, this index shows the improvement in environmental efficiency by comparing new products with products developed in the past. Factor X indicates the direction that Matsushita seeks toward environmental conservation and business development through its products and services (p. 5). The index will be used to indicate environmental performance with simple figures, thus delivering easy-to-understand messages.

URL **"Factor X," A measure of a product's ability to achieve the "New Prosperity" matsushita.co.jp/environment/factor_x/ (Japanese only)**

● Initiatives towards the Abolition of Lead Solder

Matsushita took initiatives aimed at introducing lead-free solder to all products worldwide by the end of FY'02. Consequently, the introduction of lead-free solder to all Panasonic and National products–approximately 12,000 models (representative models) produced at manufacturing sites and by business partners worldwide–was completed in March 2003. However, there are exceptions to some of the purchased units and OEM products manufactured for other companies. In order to promote the introduction of lead-free solder in these products, Matsushita will make further efforts to step up technological development.

■ **Number of Models Using Lead-free Solder**



Note:
- OEM refers to a product manufactured under the brand name of another party.
- Victor Company of Japan, Ltd. aims at completing the introduction of lead-free solder in FY'03.

Highlights 2002 **Accomplish the Lead-free Soldering Project p. 7**

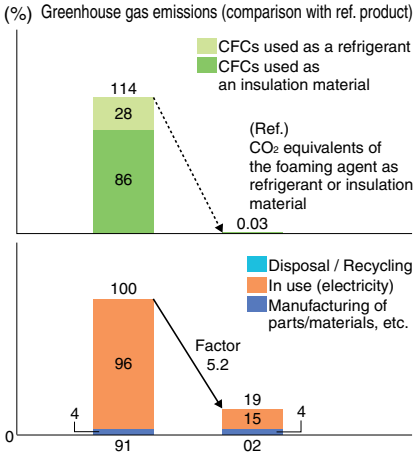
ECO SuperGP 2002

Natural Fluid (HC) Refrigerator

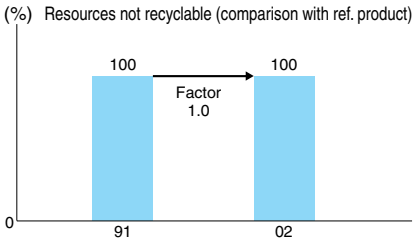
NR-E461U

These are refrigerators that use no CFCs as refrigerant or foam insulation material.
Employing a newly developed high-performance vacuum insulation material, Matsushita has already attained Japan's FY'04 energy-saving target by 220%. The product set a "CFC-free" trend.

GHG Factor 5.2



Resource Factor 1.0



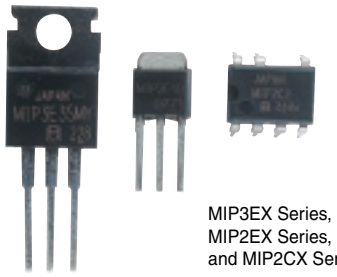
Ref. product: Refrigerator manufactured in 1991
Product function: × 1.0, Product life: × 1.0

ECO SuperGP 2002

Power Devices for Switching Power Supply

Intelligent Power Device (IPD)

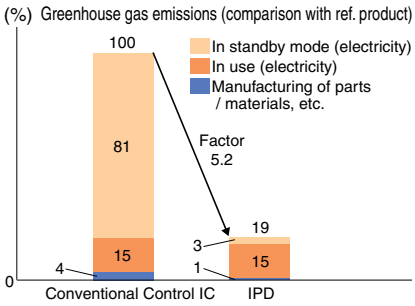
that reduces standby power consumption



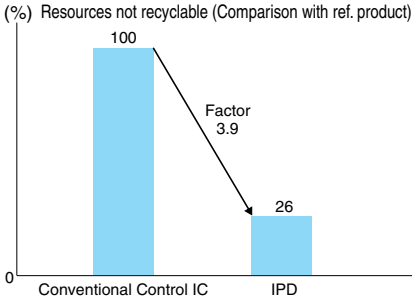
MIP3EX Series,
MIP2EX Series,
and MIP2CX Series

Conventional electric power supplies are energy-efficient at their rated operation levels. When a machine is in a standby mode using only weak current, however, electricity supplied in excess is wasted. With our intelligent power devices, a new control function is built into the power device to detect the standby mode, thus drastically cutting down on excessive electricity consumption. As the IPD can be applied to many electric appliances, it can contribute to energy conservation in our entire society.

GHG Factor 5.2



Resource Factor 3.9



Ref. product: Conventional Control IC
Product function: × 1.0, Product life: × 1.0

Air Conditioner

CS-XE283A

This air-conditioner has many functions, including air purification using an oxygen supply function and an ultrasonic ion air-cleaning function (pollen removal rate 99%). To upgrade energy efficiency, the high-performance "e-scroll compressor" and "hybrid heat exchanger" were developed, with which Matsushita has already attained Japan's FY'04 energy-saving target by 121%.

GHG Factor 3.1

Resource Factor 1.4

Ref. product: Air conditioner manufactured in 1990
Product function:
Heating capacity: × 1.6, Product life: × 1.0

DVD Video Recorder

DMR-E50-S

The new video recorder is developed based on the concept of "changing picture recording from tape to disk." It has the capability to play back the program currently being recorded from the beginning while continuing to record. Matsushita has put much effort into integrating circuits to save energy, while making parts smaller. Chrome-free steel plate is used for chassis and top panels.

GHG Factor 2.4

Resource Factor 2.0

Ref. product:
DVD video recorder manufactured in 2000
Product function: × 1.0, Product life: × 1.0

Heat Pump Water Heater Using Natural Refrigerant

HE-37R1AS

One-third of the energy consumed by a household is used for heating water. This highly efficient and energy-saving water heater has a heat pump that uses natural refrigerant (CO_2). Its primary energy efficiency has reached 114% and CO_2 emissions are only about half of the amount emitted from a gas water heater.

GHG Factor	2.4
Resource Factor	1.2

Ref. product: Heat pump water heater manufactured in 2000
Product function:
Water storage capacity: × 1.2, Product life: × 1.0

Induction Fluorescent Lamp

EFA13EL

Changing the luminescence principle from filament heat to a fluorescent lamp, this lamp has achieved high energy-efficiency and long product life. Its newer models have become increasingly small and applicable to many appliances. Compared with incandescent bulbs, the lamp life is extended 6 times, reducing the need for replacement.

GHG Factor	4.1
Resource Factor	2.2

Ref. product: Incandescent bulb
Product function: × 1.0, Product life: × 6.0

Newspaper Thermal CTP "Plate Liner"

GX-9900

Newspaper publishing uses plates for printing. The conventional printing process requires a preliminary step of film imaging, resulting in large amounts of film and waste liquids from developing and fixing to be discarded. In the thermal CTP (computer-to-plate) "Plate Liner" system, printing plates are made directly from aluminum plates, eliminating this filming step and thus cutting down on waste. With this shorter printing process, news can be more quickly delivered.

GHG Factor	1.9
Resource Factor	1.9

Ref. product: Silver salt blotter system
Product function: × 1.0, Product life: × 1.0

DC Brushless Motor with Built-in Inverter

MBMA083ABB

This highly efficient DC brushless motor with built-in inverter is used widely by industries. Since it is structured like conventional induction motors, simply replacing motors can achieve high energy-efficiency, making the development of appliances easy. The range of speed control has increased tenfold, and position control is possible. It is used for conveyors and automatic doors.

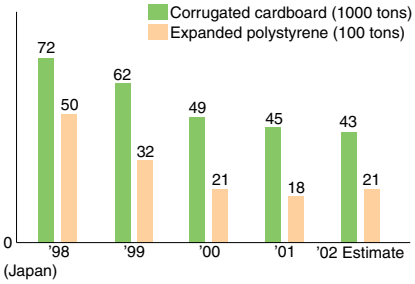
GHG Factor	2.3
Resource Factor	1.3

Ref. product: Multi-purpose induction motor
Product function: × 1.0, Product life: × 1.0

Packaging Initiatives

Aiming at "Packaging 3Rs," Matsushita is promoting resource-saving packaging, reuse of packaging materials, and use of recycled packaging materials. Matsushita is also working with its distribution divisions to increase transportation efficiency by reducing the volume of packaging and is developing new packaging technology.

■ Use of Major Packaging Materials (FY)



(Japan)

TOPICS

New Packaging Material Made of Corn

Matsushita is the first in the world to adopt "biodegradable plastics" for blister packs of dry batteries. Its negative properties, once making it inferior to conventional plastics, have been overcome through various technological improvements in design, processing, printing and adhesion. The material used for this biodegradable plastic is polylactic acid made from cornstarch, thus economizing the use of the petroleum resources usually used for making plastics. When burnt, this plastic will not emit dioxins nor will it affect the atmospheric concentration of CO_2. Furthermore, it can be degraded into water and CO_2 in the soil by the activities of bacteria.

Blister pack for dry batteries uses "biodegradable plastics" for both mat board and jacket.

Environmental Risk Management

Corporate business activities entail a variety of potential environmental risks. We realize that environmental contamination caused by hazardous chemical substances is the most serious of all. This is why we assess the risk of all such chemicals and, based on the assessment, take the necessary steps to eliminate or reduce their use. For those substances that are difficult to replace with substitute materials or to render harmless at the present time, we are exercising thorough preventive control against accidental environmental pollution, in accordance with the Manual for Prevention and Management of Environmental Pollution, which represents our cumulative knowledge in this area.

Conservation of Soil and Groundwater

Elimination of the Use of Volatile Organic Compounds

Because of their outstanding properties as detergents, VOCs (volatile organic compounds) have been our choice to clean components. In 1989, however, we decided we must not allow the compounds' infiltration into groundwater, and in 1991 developed the Manual for Preventing Contamination of Soil and Groundwater. Using the Manual for guidance, we conducted contamination surveys and implemented restorative measures. By the end of March 1996, use of VOCs was totally eliminated.

DATA Use of VOCs as Detergent ➡ p. 88

Restoration at Manufacturing Sites that Failed to Meet the Standards

In June 1998, based on voluntary notification from Matsushita, local governments announced incidents of soil and groundwater VOC contamination that had occurred at 20 of Matsushita's manufacturing sites in Japan. We have since been engaged in cleanup work. Today, the VOC level at the sites where remediation is underway has come down to almost within the limit set by the governmental standards. We will accelerate remediation, while continuing groundwater monitoring even after decontamination is completed.

■ **Status of Cleanup at Sites that Failed to Meet the Standards for VOCs**[*1]

Site	Location	Status of cleanup	Restoration method[*2]	Reporting to local governments (times/year)
Arai Site, Semiconductor Company	Arai city, Niigata	Restored to the level within the limit of Standards[*4]	A,E	4
Takatsuki Site, Matsushita Electronic Instruments Corp.	Takatsuki city, Osaka	Cleanup underway	C	1
Kameoka Site, Toyo Dempa Co., Ltd.	Kameoka city, Kyoto	Cleanup underway	A	12
Kagoshima Matsushita Electronics Co., Ltd.	Hioki-gun, Kagoshima	Cleanup underway	A,B	2
Moriguchi Site, Matsushita Electronic Components Co., Ltd.	Moriguchi city, Osaka	Cleanup underway	A,E	4
Hokkaido Matsushita Electric Co., Ltd.	Chitose city, Hokkaido	Cleanup underway	A	3
Wakasa Matsushita Electric Co., Ltd.	Obama city, Fukui	Restored to the level within the limit of Standards[*3]	E	2
Tsuyama Matsushita Electric Co., Ltd.	Tsuyama city, Okayama	Cleanup underway	A,B	4
Moriguchi Site, Matsushita Battery Industrial Co., Ltd.	Moriguchi city, Osaka	Cleanup underway	A,B	1
Kikusui Site, Panasonic Communications Co., Ltd.	Tamana-gun, Kumamoto	Restored to the level within the limit of Standards	A	1
Taimei Site, Panasonic Communications Co., Ltd.	Tamana-gun, Kumamoto	Restored to the level within the limit of Standards	A	2
Oita Site, Panasonic Communications Co., Ltd.	Usa city, Oita	Cleanup underway	A,B	12
Miyazaki Matsushita Electric Co., Ltd.	Miyazaki-gun, Miyazaki	Cleanup underway	A	6
Nara Site, Matsushita Home Appliances Company	Yamatokoriyama city, Nara	Cleanup underway	A,B	2
Kusatsu Site, Matsushita Home Appliances Company	Kusatsu city, Shiga	Cleanup underway	A,B	2
Kusatsu Site, Matsushita Refrigeration Company	Kusatsu city, Shiga	Cleanup underway	A,B	2
Matsuyama Site, Matsushita Kotobuki Electronics Industries, Ltd.	Onsen-gun, Ehime	Restored to the level within the limit of Standards[*3]	A,B	2
Ozu Site, Matsushita Kotobuki Electronics Industries, Ltd.	Ozu city, Ehime	Cleanup underway	A,B	2
Wakimachi Site, Matsushita Kotobuki Electronics Industries, Ltd.	Mima-gun, Tokushima	Cleanup underway	A,B,C,D	6
Kagawa Matsushita Kotobuki Electronics Industries, Ltd.	Mitoyo-gun, Kagawa	Cleanup underway	A	4

*1 Trichloroethylene
Tetrachloroethylene
Dichloromethane
1,1,1-Trichloroethane
1,1-Dichloroethylene
Cis-1,2-Dichloroethylene

*2 Major restoration methods
A: Groundwater pumping
B: Vacuum gas extraction
C: Iron powder mixing
D: Groundwater pumping using a horizontal well
E: Soil excavation

*3 Ongoing monitoring

*4 After verification by the local government, switch to monitoring.

Preventive Measures

Preventing pollution is a vital aspect of risk management. To ensure that pollution is prevented before it occurs, we have prepared a manual that stresses the importance of preventive measures and spells out emergency procedures, highlighted by descriptions of accidents that have occurred or been avoided in the past.

■ **Examples of Pollution Prevention Measures**

Plumbing inside a pit

Underground plumbing is suspended inside a pit, the surface of which is treated with chemical resistant material. In case of pipe damage, this structure prevents the leaked liquids from infiltrating the soil.

Installation of a spill prevention dike around chemical storage tanks

In the event of a chemical spill while the tank is being replenished, the dike serves as a wall to contain the spilled liquids, preventing them from infiltrating the soil.

Ensuring Inspection and Implementation of Countermeasures during FY'02

During FY'02, we conducted Group-wide inspection and implementation of measures for the second time since 1998. In accordance with the guidelines established by the Ministry of the Environment of Japan, we checked for substances newly added to the list of substances subject to control under the environmental quality standards, examined the ground beneath the buildings, which has not been examined thoroughly in the past, and conducted retroactive checks for on-site burial of industrial waste. We have drilled monitoring wells on the site boundaries (562 wells at 143 sites) and continue to perform regular monitoring.

Activities at Sites outside Japan

Since 1998, manufacturing sites located outside Japan have been directing their efforts toward inspection and implementation of measures. Some regions, however, lack a fully developed legal system and infrastructure, and this presents an obstacle to progress. We will provide active assistance to the endeavors outside Japan, drawing on the experience in the inspection and checking of measures performed in Japan during FY'02.

Recovery and Proper Disposal of PCB – containing Capacitors Buried in the Ground

History and Future Course of Action

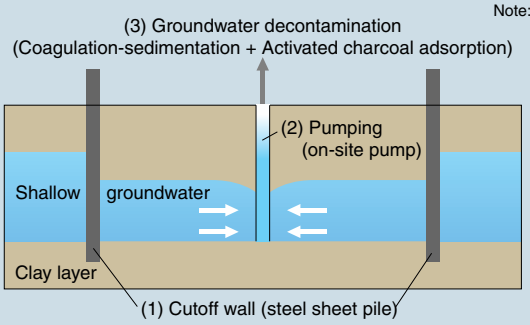
In the past, Matsushita manufactured capacitors that employed PCBs (polychlorinated biphenyls) as insulation oil, for use in electronic circuits and fluorescent light ballasts. The toxicity of PCBs, however, became a matter of social concern, which prompted us to discontinue the production of PCB-containing capacitors in 1972, in response to the administrative guidance issued from the then Ministry of International Trade and Industry of Japan.

In 1998, while investigating the incidence of groundwater contamination with VOCs that occurred at some of our plants, we discovered PCB contamination on the premises of Toyonaka and Matsue Plants. With the highest priority to prevent the off-site migration of contamination at both plants, we conducted groundwater containment with steel sheet piling as well as groundwater purification by pumping, and have since been engaged in ongoing monitoring of groundwater in the area.

In April 2002, Toyama Matsushita Electric Co., Ltd. made a public disclosure of the burial of PCB-containing capacitors and initiated corrective measures for the problem. We took this opportunity to urge all sites to conduct surveys. Subsequently, we learned capacitors containing PCBs had been buried at the Toyonaka and Matsue Plants and at the former Tsukamoto Plant site. Moreover, field hearings suggested on-site burial of end-of-life electric appliances containing PCBs, such as light ballasts, at the Takatsuki and Nagaoka Plants. In January 2003, we reported these findings to local governments and made a voluntary public disclosure, vowing to continue implementing the optimum measures. Humbly acknowledging our obligations and moving to fulfill them in good faith, we established the Soil Pollution Countermeasures Committee on February 1, 2003, chaired by Managing Director Otsuru in charge of environmental affairs, as well as the Soil Pollution Countermeasures Taskforce that reports to the Committee (see p. 52). In the future, the Committee will lead Matsushita's all-out efforts to institute corrective measures, including prevention of off-site migration of contamination, recovery and proper storage of the buried devices, reporting to authorities, and detoxification and cleanup of contaminated soil, in accordance with relevant laws.

URL Public Disclosure
matsushita.co.jp/corp/news/official.data/data.dir/jn030131-2/jn030131-2.html (Japanese only)

■ Water Cutoff to Prevent Off-site Migration of Contamination and Groundwater Decontamination



Note:
1. Steel sheet piles (sheet-shaped piles used in civil engineering works) are driven into the ground along the outer perimeter of the affected site, so that they extend through the surface soil into the clay layer. Enclosure of the outer perimeter prevents off-site migration of the groundwater that may be contaminated with PCBs.
2. Groundwater is extracted with a pump on the premises. Some of the steel sheet piles are left undriven, allowing for openings in the containment, so that off-site groundwater in adjacent areas will be drawn into the premises when groundwater is pumped up.
3. Extracted groundwater is decontaminated through the coagulation-sedimentation and activated charcoal adsorption methods, so that it meets relevant environmental quality standards. Treated water is then released into a sewage system.

■ Results of Surveys of Five Plants which Manufactured/Used PCB-Containing Devices

Plant name	No. of spots suspected of burial	Buried devices	Results of the site survey*1 (highest values recorded under the present condition)	
			Soil (amount of elution)	Groundwater
Toyonaka Plant, Matsushita Industrial Equipment Co., Ltd.	10 spots	Capacitors containing PCBs as insulation oil (Manufactured from October 1957 to March 1972)	0.0011 mg/ℓ	0.18 mg/ℓ
Matsue Plant, Matsue Matsushita Electric Co., Ltd.	5 spots	Capacitors containing PCBs as insulation oil (Manufactured from July 1966 to February 1972)	0.026 mg/ℓ	1.1 mg/ℓ
Former plant site at the Tsukamoto District	Under inspection (as of June 2003)	Capacitors containing PCBs as insulation oil (Manufactured from November 1952 to September 1957)	0.19 mg/ℓ *2	0.046 mg/ℓ *2
Takatsuki Plant, Lighting Company	1 spot	Light ballasts employing the above-mentioned capacitors	Not detected	Not detected
Nagaokoa Plant, Semiconductor Company	3 spots	Light ballasts employing the above-mentioned capacitors	Not detected	Not detected

Note:
*1 Environmental standards for soil and groundwater pollution require that contaminants not be detected (0.0005 mg/ℓ or less).
*2 Data of the former Tsukamoto Plant site were those obtained in a preliminary survey of specific spots.

Toyonaka and Matsue Plants

Thanks to the water cutoff with steel sheet piling and remediation pumping, we have concluded, based on the survey results, that there is no off-site contamination. We will continue the containment efforts through water cutoff and remediation by pumping. We will also excavate buried devices for proper storage, reporting to authorities and correct disposal. We held an explanatory meeting at the Toyonaka Plant in March 2003, in which we outlined our future course of action to community residents.

Takatsuki and Nagaoka Plants

A field hearing suggested that on-site burial of light ballasts had taken place from 1977 to 1984. We believe due consideration was given at the time of burial so that no dispersion, elution or underground seepage would occur. No PCBs were detected in soil or groundwater on the premises of both plants, which pointed to the absence of off-site contamination. However, because our primary concern is safeguarding the surrounding environment, we will continue to monitor groundwater. In the future, we plan to work on recovery of buried devices for proper storage, notification to authorities and proper disposal.

Former Tsukamoto Plant Site

We suspected that defective PCB-containing capacitors were buried before the 1957 relocation of capacitor production to the Toyonaka Plant. Sampling surveys of specific spots found on-site contamination. We are currently making a detailed investigation and a study of the best measures. In the meantime, as an emergency containment measure, we will implement water cutoff with steel sheet piling and remediation pumping that draws groundwater into the premises. In February 2003, we held an explanatory meeting, in which we outlined our future course of action to community residents.

Water cutoff work driving steel sheet piles into the ground

Recycling of End-of-life Products

Collecting and recycling end-of-life products means increasing the amount of resources we hand down to the next generation. It represents a new obligation and a challenge that has emerged in the 21st century. In April 2001, Japan became the first country in the world to initiate the recycling of home appliances. To date, Matsushita's recycling plant has welcomed more than 18,000 visitors.

Recycling of Home Appliances

Recycling System

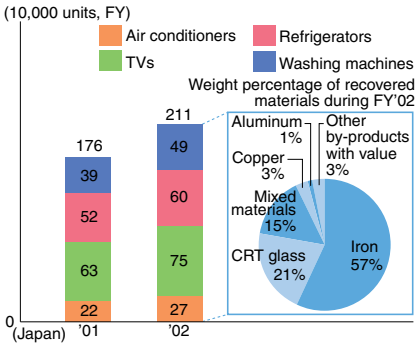
Matsushita has constructed an efficient decentralized processing system that makes use of existing infrastructure. At present, we are working on the collection and recycling of the four home appliances designated by Japan's Law for Recycling of Specified Kinds of Home Appliances. Under a commission from the manufacturers (19 companies) who participate in Matsushita's home appliances recycling network, we also undertake operations on their behalf related to home appliances recycling, facilitating the operation of a nationwide network of 27 recycling centers and 190 designated collection points.

FY'02 Performance

Recycled Matsushita products increased by about 20%, to 2.11 million units compared with 1.76 million in FY'01. We attribute this feat to greater understanding and cooperation on the part of our customers.

DATA Recycling of End-of-life Products ➡ p. 88

■ Number of Units Recycled and Weight Percentage of Recovered Materials

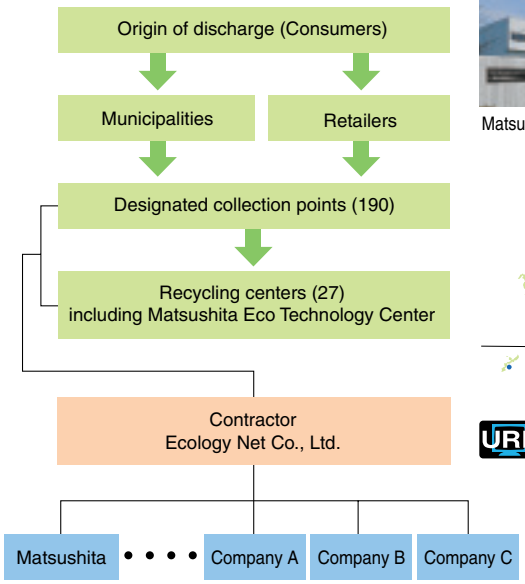


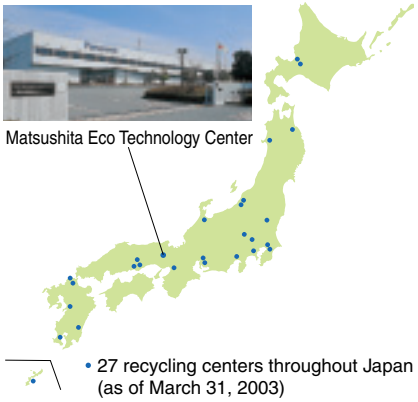
Matsushita Eco Technology Center

Matsushita Eco Technology Center, which serves as Matsushita's home appliances recycling demonstration and testing center, not only undertakes recycling of the four legally designated home appliances but also researches ways to reuse recovered materials, embracing a concept of "from products to products." A facility open to the public, the Center has received some 18,000 visitors since it began operation in April 2001.

Highlights 2002 Matsushita Eco Technology Center p. 11

■ Home Appliances Recycling System





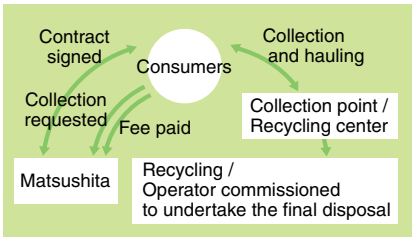
URL Matsushita Eco Technology Center, CO., Ltd. matsushita.co.jp/environment/en/metec/index.html

Recycling of Personal Computers

Matsushita was designated as an operator of industrial waste hauling and disposal (designated for wide-area recycling and reuse) by the Minister of the Environment of Japan and is undertaking recycling through Matsushita-commissioned hauling and disposal companies. In FY'01 and FY'02, collected units totaled about 2,700 and about 3,000, respectively. The recycling rate was approximately 70% for desktop PCs and approximately 20% for notebook PCs.

URL Recycling of Personal Computers panasonic.biz/pc/recycle/recycle.html (Japanese only)

■ Personal Computer Recycling System



Recycling of Rechargeable Batteries

In Japan, Matsushita participates in the End-of-Life Portable Rechargeable Battery Collection System managed by the Japan Portable Rechargeable Battery Recycling Center (JBRC) of the Battery Association of Japan, and is involved in collection and recycling of portable rechargeable batteries, which include Ni-Cd, nickel hydride and lithium ion batteries, as well as some of the rechargeable sealed lead-acid batteries. In FY'02, a total of 1,094 tons were collected (data released by the Center). To address the future challenge of increasing the amount of portable rechargeable battery collection, we endeavor to educate the general public, while staging a variety of campaigns in concert with manufacturers of battery-carrying devices.

URL JBRC www.jbrc.com/ (Japanese only)

Environmental Communication

To Matsushita, environmental communication is a signpost that facilitates the advance toward a sustainable society, together with stakeholders from different sectors. The feedback that we receive on different occasions has a great influence on our environmental activities. Working together with children, the leaders of the future, has also been a precious experience that reminds us of the fundamental meaning of our activities.

Communication Activities

The building of a sustainable society cannot be carried out by a single company. We must work with people in every sector of society. We believe that environmental communication plays an important role in linking Matsushita with stakeholders from different sectors. In FY'02, we took the challenge of conducting communication activities aimed at meeting the needs of stakeholders from various sectors and cultivating mutual understanding.

■ **Matsushita and Various Stakeholders**

DATA Publication History of the Sustainability Report, Participation in Exhibitions, Environmental Communication at Local Sites, Major External Awards, Awards by Category ➡ p. 89

■ **Accomplishment in Environmental Communication** (FY'02)

Media / activities	Results
Environmental Sustainability Report	Approx. 30,000 copies
Website	Approx. 150,000 accesses
TV commercials	2
Newspaper advertisements	7
Exhibitions	8
Lectures	20
News releases	12
Interviews response	12
Replies to questionnaires	20
E-mail inquiries	961

Publication of Sustainability Report

The Sustainability Report is the core medium of Matsushita's environmental communication. The name has been changed from "Environmental Sustainability Report" to "Sustainability Report" this year because it covers not only environmental activities but also a wide range of topics on social responsibilities that are related to our business activities. The Environmental Sustainability Report 2002, published in June 2002, was reported at the general meeting of shareholders. The society positively received the report. It received numerous commendations, including the Ministry of the Environment, the 6th Environmental Reporting Award. It was ranked 22nd in the world by "The Global Reporters" of SustainAbility, Ltd.

Matsushita President Nakamura receives the 6th Environmental Reporting Award from Mr. Suzuki, Minister of the Environment.

Environmental Stakeholders Meeting

The Environmental Stakeholders Meetings have been held since FY'01 to build mutual trust with stakeholders and to pursue communication in a more direct manner.

Highlights 2002 The Second Environmental Stakeholders Meeting p. 21

Highlights 2002 The Third Environmental Stakeholders Meeting p. 23

Environmental Advertisements (TV Commercials, Newspaper Advertisements)

Advertisements are used to communicate our environmental activities to the public through various media such as newspapers and TV. In FY'02, seven newspaper advertisements and two TV commercials were made to convey the eco-conscious features of our products using an easy-to-understand approach.

The "&ECO series" that won the Readers' Grand Prize of the "Yomiuri Advertising Awards"

URL Environmental Advertisement matsushita.co.jp/environment/communication/ (Japanese only)

Participation in Exhibitions

Matsushita introduces its environmental activities by participating in various exhibitions. In FY'02, we focused on presenting our environmentally conscious products in an easy-to-understand manner.

The Matsushita booth is ranked No. 3 by exhibition visitors in the Eco-Products 2002 Exhibition.

Many products on exhibit at ENEX

Information Dissemination using Website

Matsushita operates a website to report its environmental activities. The Japanese website is mainly for National products, with online tools that calculate the differences in energy consumption (electricity cost) between our new products and products manufactured in the past.

Differences in operation costs when replacing home appliances are calculated.

URL Replacement diagnosis national.jp/dbm/ (Japanese only)

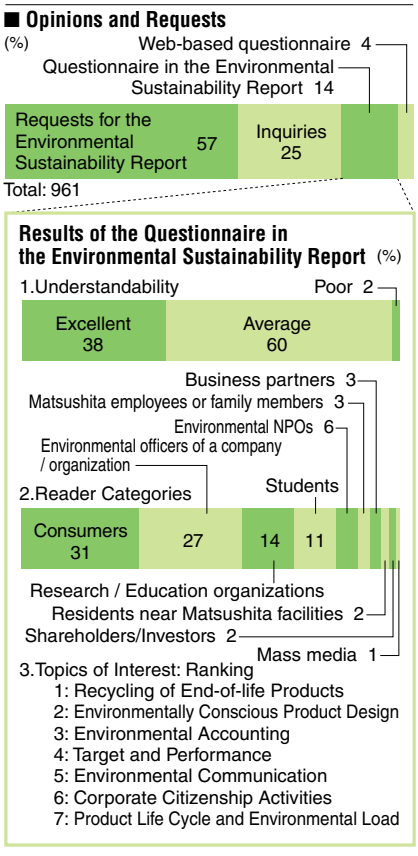
Environmental Labeling

Beginning in 1997, Matsushita used the Environmental Characteristic Sticker to indicate environmentally conscious products. It was replaced by the "Environmental Label" in December 2002. The new label will be used as Type II Environmental Labels (self-declaration claims) on our products, catalogs, advertisements and commercials, etc.

Matsushita's "Environmental Label"

Comments and Suggestions

In FY'02, we received 961 comments and suggestions.



Based on the above findings, we developed the structure of this report. The "Recycling of End-of-life Products," which attracted great attention, is introduced in Highlights 2002 (p. 11) in an easy-to-understand manner for general readers who are not specialists in the environmental field.

TOPICS

Communication with Children (Japan)

Matsushita Eco Technology Center (METEC) Study Tour

In order to ensure that the younger generation understands the importance of recycling, Matsushita organized a children's study tour of Matsushita's recycling plant METEC on October 19, 2002. On that day, 23 pairs of parents and children joined the tour.

Children listen attentively to an explanation.

Corrugated Cardboard Recycling Workshop

Eco-Products 2002 Exhibition "Study Tour for Children"

Eco-Products 2002 was held in Tokyo in December 2002. At the Matsushita booth, a study tour for children was offered. A picture-card storytelling method was used to explain to the children in an easy-to-understand manner the relationship between familiar electric appliances they see at home and environmental problems. About 150 children participated.

Primary school students listen to an explanation of the induction fluorescent lamp.

Battery Provided the Opportunity for Learning, Thinking, and Experiencing "Mobile Battery Classroom"

To contribute to local communities and to the "General Studies Hour" at primary schools, Matsushita Battery Industrial Co., Ltd. offers a "Mobile Battery Classroom." In December 2002, as one of the Programs for Promoting Communication-Technology Supported Education with the Cooperation of Local Businesses organized by the Center for Educational Computing, we connected two primary schools in Niimi City, Okayama Prefecture, with a distant learning system and offered classes simultaneously, thus promoting the use of information technology in classrooms.

A Matsushita employee teaching a class at school

Children learning to make batteries

URL **Mobile Battery Classroom www.mbi.panasonic.co.jp/study/ (Japanese only)**

Eco Craft – "Making of a Mecha-Bug"

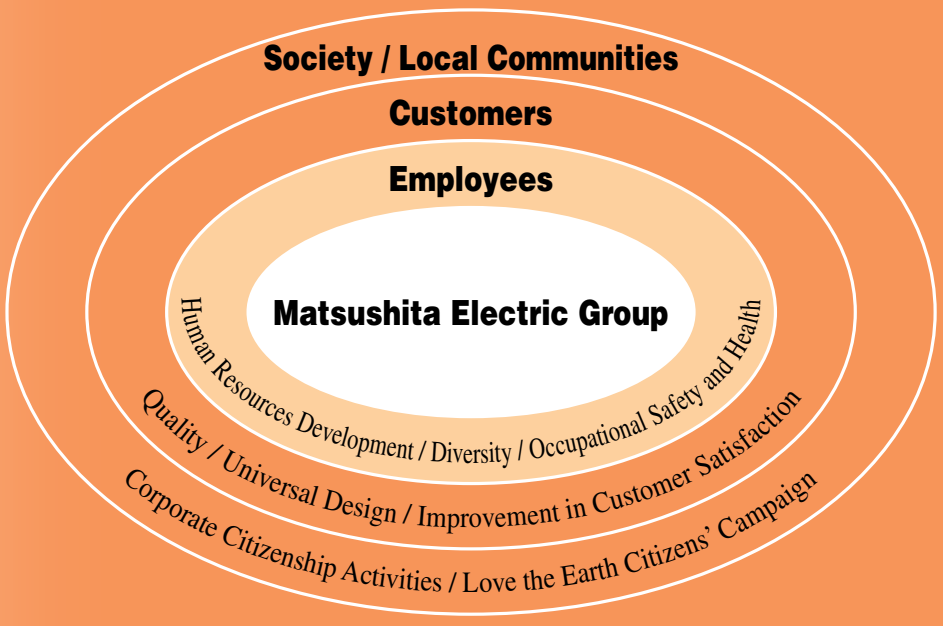
As a summer event for primary and middle school students and their parents, an ecological craft workshop was held at the Matsushita Hall of Science and Technology in August 2002. It offers a program to utilize end-of-life miniature bulbs and batteries to make an insect model, the "Mecha-Bug." The workshop lasted 15 days and attracted 1,035 participants in total.

The "Mecha-Bugs" and participants are introduced on our website.

URL **matsushita.co.jp/exhib/event/mecha_0805.html (Japanese only)**

Social Responsibility

A company is entrusted by society with valuable resources for its business, namely “manpower,” “materials,” and “capital.” A company is a public entity of the society in which it exists. It must utilize these business resources to contribute to the progress of society. Both society and corporate activities are based on “people.” We will now report how Matsushita’s business activities are related to people from the following three perspectives: our employees, our customers, and the people whom we encounter through corporate citizenship activities.



Relationship with Employees

The phrase "Developing people before making products" has always represented Matsushita's commitment to developing human resources. Regardless of the business resources it may have, a company may never achieve its mission without the right people to use these resources. We are making constant efforts to nurture a corporate culture that respects diverse values, which is then reflected in our management practices. We also consider the health and safety of our employees are part of the foundation of our business activities. As members of the manufacturing industry, we must be fully aware of the dangers that surround us and are make steady efforts to ensure safety in our workplace.

Personnel Principles

In addition to "autonomous management" and "participative management with collective wisdom," Matsushita declares in its Basic Business Philosophy that "people" are the foundation of its business, and bases its Personnel Principles on the idea of "developing people before making products."

To put this into practice, Matsushita specifies in its personnel principles that the role of personnel administration is "to develop personnel who understand the Company's Basic Business Philosophy fully and make efforts to achieve tasks in consistent compliance with this philosophy." And the specific qualities required for Matsushita Electric personnel in the coming age are as follows: 1. Practice the Basic Business Philosophy, 2. Independence and Aspiration, 3. Top-of-the-field Expertise, 4. Rich Personality, 5. Cosmopolitan View. The employees and the company are striving equally to accomplish the objective stated in the Basic Management Philosophy. We expect each and every one of Matsushita's employees to be truly professional.

Highlights 2002 **Improve Management Quality p. 19**

DATA Number of Employees by Region ➡ p. 90

Organizational Management

To speedily respond to the needs of diverse customers, frontline employees must be able to make autonomous decisions and take actions. Matsushita is in a transition to a "flat & web-like organization" with fewer organizational layers, using IT to create more flexible and speedy coordination among sections. The hiring and allocation of human resources are determined based on ability and skills. In the three years following April 2000, the average age of division heads has decreased by 1.5 years and that of General Managers by 2.6 years. In addition, the number of female employees who are Managers or above has more than doubled.

Human Resources Development

Training for Future Leaders

To pursue global business, it is important to have a systematic way to develop leaders for the future. In addition to providing educational programs according to employees' ranks and training on-the-job, we offer in-house MBA courses as well as a study tour to best practice companies in the world to our employees selected from different parts of the world.

Training for Future Leaders

- M·EDC
  (Matsushita Executive Development Course)
  Target: Japanese General Managers who are Executive candidates
  Training contents: Management skills, overseas training
- M·EDC-Jr.
  Target: Japanese Managers who are future Executive candidates
  Training contents: Focus on management skills
- SEDP
  (Senior Executive Development Program)
  Target: Executive Officers of overseas companies who are candidates for president positions
  Training contents: Same as M·EDC and may hold jointly with M·EDC
- EDP
  (Executive Development Program)
  Target: General Managers of overseas companies who are candidates for Executive Officer positions
  Training contents: Management skills and training at the Head Office

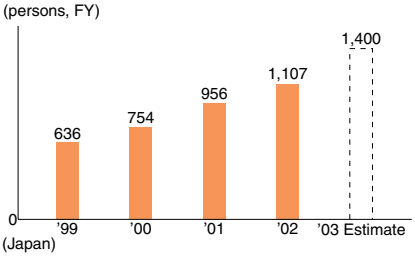
e-learning System

To increase the opportunity for employees to receive education, Matsushita introduced the e-learning system using the Internet. This learning method, which is not restricted by distance or time, not only saves time and money but also meets the needs of employees wishing to improve their skills in a wide variety of fields. The number of employees who sign up is showing a drastic increase.

Corporate Culture Reform for Building Equal Partnership

Matsushita established the Corporate Equal Partnership Division in FY'01 and carried out various activities, mainly in Japan, to build a "Matsushita where diverse employees can work vigorously regardless of their gender." Matsushita has organized Group-wide forums, provided various information to cultivate and raise the awareness of employees, and supported the reform of corporate culture to accelerate the participation of female employees in business management.

Female Employees in Responsible Posts (Supervisor or above)



Work & Life Support Program

Matsushita introduced the Work & Life Support Program to enable its employees to achieve a balance between work and home so that they can fully utilize their abilities. Since this system was introduced in 1999, 3,000 employees have already taken the child care leave.

DATA Work and Life Support Programs, Employment Rate for People with Disabilities, External Awards ➡ p. 90

The Charter of Matsushita Electric Occupational Safety and Health

Based on the "respect for mankind" policy, Matsushita aims at building a healthful, safe, and pleasant workplace. We implement various kinds of activities in accordance with the Charter.

■ The Charter of Matsushita Electric Occupational Safety and Health

Occupational Safety and Health Declaration

To fulfill our corporate philosophy of "respect for mankind," we will make consistent efforts to build a safe and pleasant workplace to ensure the physical and mental health of all employees.

Guidelines for Occupational Safety and Health

1. Comply with legal requirements
2. Invest management resources
3. Establish and maintain an occupational safety and health management system
4. Clarify responsibilities and authority, and establish an organizational structure accordingly
5. Eliminate and reduce dangerous and harmful factors
6. Set goals, and make and implement plans
7. Implement audits and carry out management reviews
8. Provide education and training

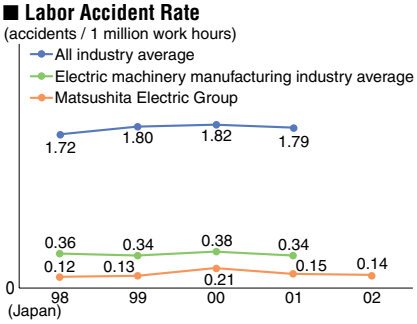
Efforts to Eliminate Labor Accidents

State of Occupational Safety and Health Management

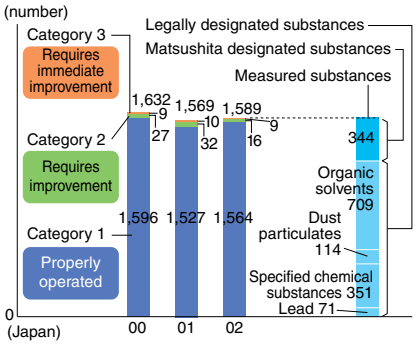
The occupational safety and health management system continues to take root, enabling each Matsushita site to carry out activities on their own initiative. As a result, labor accidents in 2002 dropped 17% compared to 2001.

As a measure to prevent health hazards caused by chemical substances, Matsushita set up its own standards and took measurements of the workplace environment, thereby making steady improvements to the environment.

■ Labor Accident Rate



■ Number of Workplaces by Management Category and Breakdown of Measured Substances

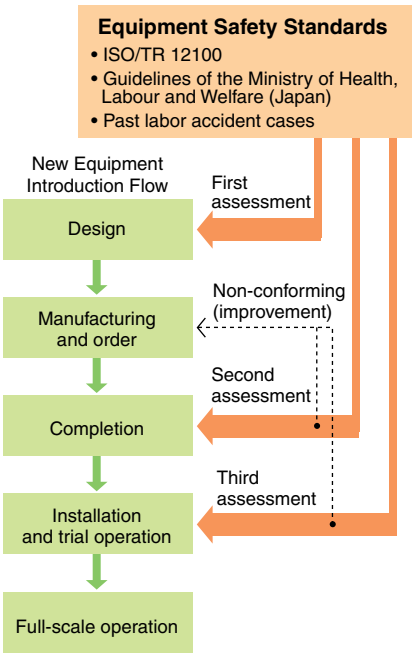


Note:
- Scope expanded since 2002 (excluding Victor Company of Japan, Ltd.)
- Data collected from January to December

Stringent Equipment Safety Inspection

In order to eliminate labor accidents, it is important to enforce the safe design of equipment in addition to taking safety measures. Matsushita reviewed the Equipment Safety Standards in 2001 to step up the fundamental safety measures of equipment (fundamental safety), based on the international standards regarding safety of machinery (ISO/TR 12100), guidelines issued by Japan's Ministry of Health, Labour and Welfare, and case studies of past labor accidents. Furthermore, Matsushita focuses on eliminating the causes of accidents in the early stages of manufacturing by conducting a three-step safety inspection for new equipment introduction.

■ Equipment Safety Inspection Flow



"Healthy Matsushita 21"

Two years have passed since the "Healthy Matsushita 21" initiative started in April 2001 in Japan. It aimed at health enhancement of each employee. The initiative has steadily gained momentum and the number of employees voluntarily participating has almost doubled in this period.

■ "Healthy Matsushita 21": Programs and Participants

Lifestyle-related diseases | Smoking | Mental health

- Health information
- Improved cafeteria menu
- Smoking cessation program
- Seminars

Logo

Participation of employees

FY'02	64,444 persons
FY'01	32,821 persons

DATA External Awards ➡ p. 90

TOPICS

Easily Recognizable Safety Measures

At the Semiconductor Company, because various gases and chemical substances are used in the process of development and production, risk management for contingencies is extremely important. The company has established the occupational safety and health management system at seven manufacturing sites in Japan.

Specific measures include the posting of easily recognizable safety signs to indicate the characteristics of chemical substances and emergency escape routes, and the establishment of an Emergency Response Team (ERT) to take speedy and appropriate actions.


ERT in training


SCBA usage

Relationship with Customers

The "Customer-comes-first" principle is the pillar of Matsushita's Management Philosophy. It is a universal concept handed down by the founder Konosuke Matsushita. We maintain a close relationship with customers through various avenues ranging from the quality of our products and services, to the recycling of end-of-life products. Improving the quality of our products, enhancing universal design to make products easier to use for everyone, and paying attention to our customers' feedback are all-important factors for Matsushita's manufacturing.

The Concept of Quality

Quality refers not only to the functions and performance of products and services but also to the ability to satisfy the needs of customers and society in terms of style, economical efficiency, serviceability, ease of installation, safety, and environmental friendliness. In other words, quality mirrors business activities. In order to offer good quality, we have to establish an effective total management system and ensure its smooth operation. Before shipping products from our factories, we evaluate those products from the customers' viewpoint.

Quality Assurance System

Matsushita supplies quality-guaranteed products only. Regardless of the region or manufacturing site, these products are designed and manufactured in compliance with a quality system that is based on our stringent regulations. In particular, Matsushita assures product safety by enforcing its own high standards and regulations such as the "Rules for Safe Design," "Safety Standards of Matsushita Electric Industrial (MEISS)," and "Matsushita Industrial Standards (MIS)."

■ **Quality System**

Product planning	Plan review Competing product study
Design and development	Design review Product assessment Reliability and safety assessment Safety standards Compliance with legal requirements Ease of installation Serviceability
Product evaluation	Quality assessment from a customer's viewpoint
Production	Inspection of mass-produced products
Market	Confirmation of quality for customers
Services	After-sale services
Recycling	Product assessment
Disposal	Product assessment

■ **"Checkpoints for Product Evaluation" — From the viewpoints of buyers and users**

1. Product design that meets requirements
2. Assurance of safety and security
3. Compliance with legal requirements
4. Reliability and durability assured for all use conditions
5. No noise, odor, or electromagnetic waves that harm or affect others
6. Precautions against misuse
7. Appearance and quality befitting a Matsushita product
8. Superiority to competitors' products
9. Ease of use and maintenance
10. Ease of use with other equipment or as a system
11. Easy-to-understand operation instructions or status displays
12. Easy-to-understand cautions and model number
13. Quality and consumer information reflected in the product
14. Ease of installation and repair services
15. Energy and resource efficiency
16. Consideration to the global environment
17. Common and interchangeable parts and components
18. Easy-to-understand and useful operation manual
19. Ease of unpacking and repacking
20. Packaging that considers transportation, handling, warehousing, and disposal

Formulated in March 1964 and revised in April 1992

■ **Quality Elements Requiring Assurance**

Safety	Fire, electric shock, injury, burn, poisoning, etc.
Performance	Product functions, input, output, applicability into systems, impact on others
Environment	Save (energy-saving), Clean (reduced use of chemical substances), 3Rs
Easy handling	User-friendliness (operations, cleaning), nice feel, time-saving, and malfunction prevention
Appearance	Design, color, style, flaws, unevenness, cracks, texture, etc.
Robustness	Resistance to and security against abnormality
Durability	Time span in which quality is maintained
Installation and construction	Ease of connection or installation
Serviceability	Speed, cost, responsiveness

Response to Quality Issues

Despite our best effort in assuring quality, quality issues that might lead to more extensive damage do occur in rare occasions. In such cases, we put our highest priority on assuring the safety of customers while preventing damage to customers' properties by providing information through the retailers, pamphlets, newspapers, and our website. In order to ensure that the products can be used safely, we take every possible measure such as exchanges of parts and components.

URL Important information for customers
matsushita.co.jp/ (Japanese only)

TOPICS

Example: Safe Design for a Cordless Iron

In Use

- When taking the iron out of the stand, a user may accidentally touch the power supply terminal. In order to prevent the user from receiving an electric shock, a shutter is installed on the iron.

After Use

- The case is designed so that the iron can be stored immediately after use while still hot.
- The case is designed so as not to release the iron if the user accidentally pushes the case detach button when carrying the iron in the case by holding the case handle. When the iron case accidentally receives physical shock by hitting furniture or falling on the floor, it will not release the iron.

Cordless steam iron
NI-CL501

Promoting Universal Design

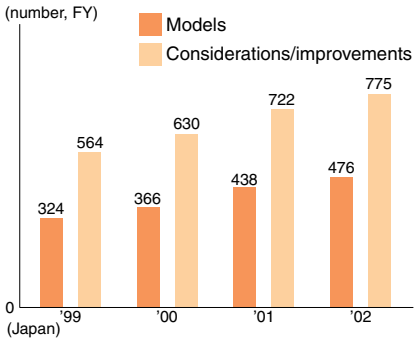
"Universal design" is a concept or initiative that aims at making a society comfortable to all people, irrespective of their differences in physical ability, age, sex, nationality, and language. Against the backdrop of the trends toward multi-functional products, increasing sophistication of technology, and a rapidly aging population, there is increasing demand for the universal design initiative.

Matsushita strives to incorporate universal design into its product manufacturing. Putting ourselves in the position of a customer during the product planning and development stages, we take measures to improve the "operability," "efficiency," and "amenity" of products by seeking overall satisfaction (usability) of products. Universal design products in FY'02 amounted to 476 models, incorporating 775 improvements and other considerations.

■ Three Aspects of Usability

User-friendliness	Make the product easier to use
Barrier-free	Eliminate inconveniences for the elderly and physically challenged people
Accessibility	Turn "unusable" products into "usable" products for physically challenged people

■ Products Incorporating Universal Design



DATA External Awards ➡ p. 90

● Example of Universal Design Products: Audible Remote Control for Air-conditioner

This air-conditioner remote control is the first in the industry to have voice response capability. For the development of this product, Matsushita interviewed elderly and physically challenged individuals and visited the homes of the elderly to conduct research. Because this product has simple functions and is easy to operate, it is user-friendly not only to the elderly and physically challenged but also to children. The sales of this product far exceeded original expectation.

■ Features

1. Every time a button is pressed, a voice will inform the user of the current setting, such as heating/cooling temperatures.
2. Braille is inscribed on the buttons and body of the remote control to enable people with visual impairment to easily operate the equipment.
3. The panel surrounding the buttons is designed to be higher than the buttons so that someone who needs to use the mouth to hold a stick to press the buttons can do so with ease.

Audible remote control CZ-RR5

URL **Audible remote control**
national.jp/appliance/ace/product/pro15.html (Japanese only)

● Example of Universal Design Products: Water-less Rice Washer

The water-less rice washer is Matsushita's original product that can prepare rice for cooking without using water. The benefit of eliminating the rice washing process that uses cold water is far greater than expected, as it lessens burden on the body. Thus, the product received high recognition from wheelchair users during the home monitoring test. This environmentally conscious product was commended with the "Lake Biwa Eco Life Award (FY'01)" because it eliminates wastewater from rice washing and helps lessen water pollution.

■ Features

1. A simple touch of the buttons can "measure" and "wash" rice without using water.
2. Braille is used on the buttons to make it easier for the visually impaired to operate.

Water-less rice washer SN-KT12B

URL **Water-less rice washer**
prodb.matsushita.co.jp/products/national/SN/SN-KT12B.html (Japanese only)

TOPICS

Hosting of Universal Design Exhibition

The "Universal Design Exhibition" was held in March 2003 at the Panasonic Center in Ariake, Tokyo. The results of Matsushita's research and development of universal design were introduced under three themes: "Let's enjoy housework," "Let's have a communication," and "Let's spend a healthy life." Visitors had the opportunity to experience universal design by "looking" and "touching." Matsushita will continue to propose various universal designs and to reflect customer feedback in its products.

Exhibition introducing research efforts and products

Visitor trying out the goggles for experiencing cataracts

Increasing Customer Satisfaction

Guided by the spirit of "true service" put forward by the founder, Konosuke Matsushita, we conduct business activities aimed at gaining customer satisfaction through products and services. We have set up a system to gather comments and suggestions from a wide range of customers and incorporate their opinions into our products.

TRUE SERVICE

Service is an integral part of any business. A business that does not provide service is no business at all.

Service, therefore, is the duty and obligation of any businessperson. But there's nothing more aggravating than service provided only out of a sense of duty. Customers can sense it.

Service means satisfying customers, and when we satisfy our customers, we in turn find satisfaction in a job well done.

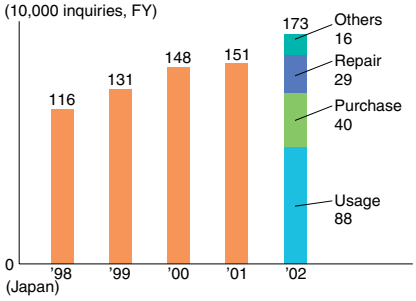
Satisfied customers and satisfied employees. This is what constitutes true service.

Konosuke Matsushita

Customer Care Center

Matsushita operates a year-round Customer Care Center in Japan to answer any questions that customers may have concerning Matsushita products. In FY'02, the Center received 1.73 million inquiries, 51% of which concerned product usage and operations.

Inquiries from Customers



Customer Care Center (Japan)
0120-878-365

Meeting with Consumer Representatives

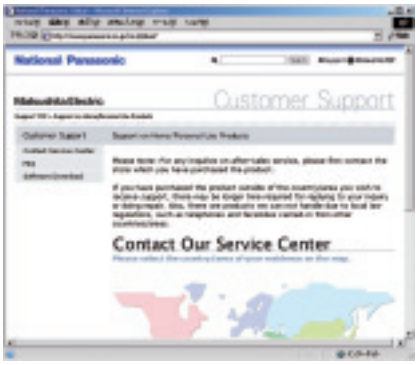
Since 1995, Matsushita has held gatherings with representatives of consumer groups and consumer life centers to exchange information at eight places in Japan. Management officers from our Corporate CS Division supervising the Customer Care Center, and from various districts attended these gatherings to introduce Matsushita's customer-oriented initiatives and topical products. These gatherings aim at enhancing the understanding of Matsushita's activities and feeding back consumer opinions to our pertinent divisions in order to improve business activities.

The Corporate CS Division Director explaining Matsushita's initiatives

Consumer representatives listening to a product explanation with interest

Global Customer Support System

Matsushita has been building a "global customer support system" in order to provide uniform services to customers throughout the world. As part of this initiative, our website was drastically revamped in October 2002 to provide easier-to-understand information. On the new website, contact information for Service Centers in various countries can be located more quickly, and the content of FAQs and downloadable software has been improved. Matsushita will continue providing useful information to service the needs of each region.



Global Customer Support Website
www.panasonic.co.jp/cs/global/

TOPICS

Example of Improvement based on Customers' Feedback: "Personal Fax"

Personal Fax is one of the products that had many post-purchase inquiries regarding their usage and operations.

We received valuable comments such as "I got turned off by too much explanation in the user's manual;" "I could not figure out where to find what information." etc. We utilize these customer comments in new product development and make specific improvements. For example, the user's manual was completely revised by summarizing the original 240 pages into 100 pages. This made the manual more readable and helped economize paper resources. Furthermore, for the WiLL Series (KX-PW100CL), a cover was added to the feed tray, which helped improve the design.

Improvements Made from Customers' Feedback

User's Manual

- Reduce the number of words
- Switch to visual explanation by adding illustrations and pictures
- Omit overlapping explanations
- Refrain from referring to other pages in the middle of an explanation

Facsimile

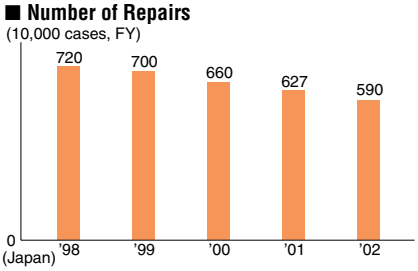
- Set the date and time before shipping
- Move the position of less frequently used buttons
- Provide dust prevention measures for feed tray

Personal Facsimile KX-PW100CL

Repairs and Services

In Japan, Matsushita offers product repair services through retailers and service centers run by Matsushita Technical Service Co., Ltd. throughout the country. The number of repairs in FY'02 totaled 5.9 million, a decrease of 370,000 from the previous fiscal year. The decline was attributable to the increasing number of customers who have opted to replace their products rather than repairing them. Improvement in product quality and energy-efficiency, a significant drop in product prices, and the relatively high repair costs have encouraged customers to purchase new products.

■ **Number of Repairs**



● Initiative to Reduce Repair Cost

We consolidated our repair operations to increase efficiency with the aim of reducing repair cost and time. We also take an upstream approach by incorporating repair time-saving measures into the product design.

The Central Technical Repair Center has the capacity of repairing 600,000 units per year.

● Providing Information to Enable Longer Product Life

Information on how to obtain a longer product life is introduced on the website.

URL **"Better Ways to Use Your Home Appliances" introduces ways to take care of the appliances**
www.panasonic.co.jp/cs/japan/css/
(Japanese only)

■ **Repair Service Centers** (Japan)

Ⓟ Pana Service Ko-bo

Service counters at the retailers that meet the requirements for repair and consultation services as well as after-sale follow-up (number of stores)

Retailer with Pana Service Ko-bo

Ⓜ Matsushita Technical Service Co., Ltd.

Repair service counters
(number of service counters)

Navidial (Japan)
0570-087-087

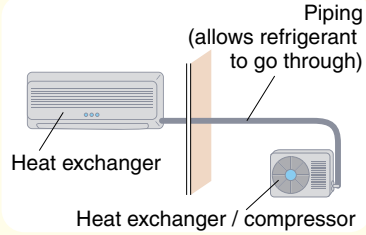
Please call Navidial when it is difficult to consult the retailer where you have purchased your product. This number will connect you to the nearest repair service counter.

TOPICS

Developing CFC Refrigerant Recovery Tehnicians

CFCs are used as refrigerant for home air conditioners. Currently manufactured models have increasingly used HFC (R410A), a non-ozone-depleting CFC substitute, to replace the specified HCFC (R22). There is concern about the impact of specified CFCs depleting the ozone layer, and also about CFC substitutes causing global warming, although they might have little effect on the ozone layer. For these reasons, it is necessary to pay close attention when installing or repairing home air conditioners so that the refrigerant (CFCs) does not leak out. The Matsushita Marketing Training Institute offers an Air Conditioner Servicing Technology Training and Seminar for CFC Recovery Technicians to retailers, distributors, and repair service companies. From 1996 to March 2002, these programs fostered some 11,000 CFC Recovery Technicians.

Connect the hose according to the procedure



CFC recover skill training

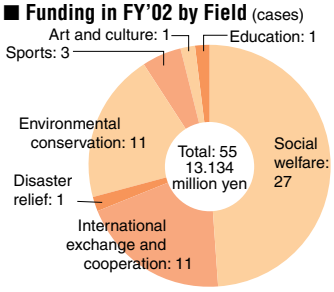
Relationship with Society and Communities

As industrialists, our mission is to bring satisfaction to customers around the world through our business activities. In addition, our role as a corporate citizen involves cooperating as a member of the society in the development of a vibrant society friendly to the earth and its residents. This belief underpins our concept of "social contribution activities as a corporate citizen." Our contribution is especially focused on the "development of human resources." We have also supported programs for promoting multi-cultural understanding and volunteer activities to help build a collaborative and supportive society. We are doing our share as a global citizen to tackle environmental issues in order to promote a peaceful coexistence among all stakeholders.

Volunteer Activity Funding Program

This program was established in 1998 to lend support to our employees so that they can actively participate in the civil society. It supports financially some of the activities carried out by non-profit organizations (NPOs) in which Matsushita employees, their spouses, or retired employees continuously participate in Japan. In FY'02, 55 organizations received funding (eleven of them were related to environmental conservation).

Funding in FY'02 by Field (cases)



Accumulated total: 376 cases (82.616 million yen) since the program's establishment in 1998

Environmental Conservation Organizations Supported by Matsushita

- (N) Ecoken (Fukuoka Prefecture)
- Society of Citizens to Protect the Virgin Beech Tree Forests of Hanamaki (Iwate Prefecture)
- Urban Development Study Group for the Vicinity of Kamoi Station (Kanagawa Prefecture)
- Commune with Koide River Club (Kanagawa Prefecture)
- Recovering White Beaches and Green Pines of Chikuzen Shingu Club (Fukuoka Prefecture)
- (N) Konan Environment (Shiga Prefecture)
- (N) Soft Energy Project (Kanagawa Prefecture)
- Furukawa River Fan Club (Hiroshima Prefecture)
- Myokenzaka District Urban Development Committee (Osaka Prefecture)
- Katano Bamboo Charcoal Making Volunteers (Osaka Prefecture)
- Uyun Reforestation Volunteer Association (Tokushima Prefecture)

Total funding for the above eleven organizations: 2.67 million yen

(N): Specified non-profit corporation

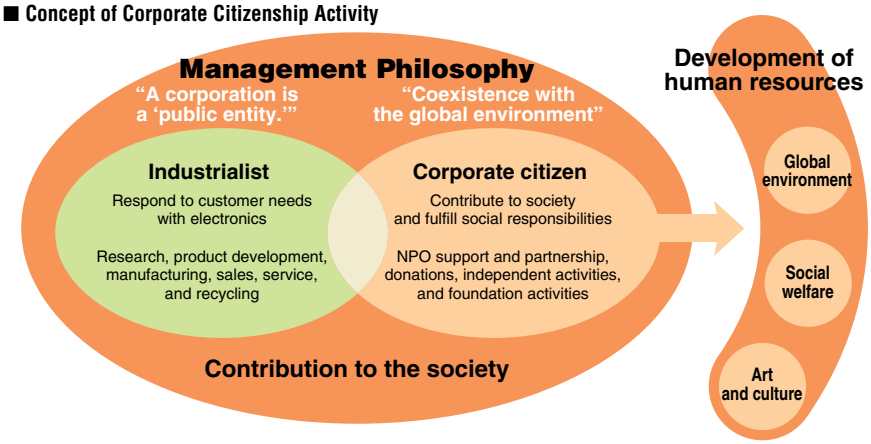
Ecoken

Zero emissions cannot be achieved unless everyone reduces the environmental impact resulting from his/her daily life. Ecoken "promotes its idea through practice."
(Representative: Fumiko Shimizu)

Uyun Reforestation Volunteer Association

The Association was founded by volunteers in support of the idea advocated by Tamami Tachibana (Mongolian name: Uyun), a Japanese orphan left behind in China at the end of WWⅡ, to "return favor to China by planting trees." To date, a total of 100,000 trees have been planted by 443 participants on 19 occasions.
(Representative: Mutsuo Takizawa)

Concept of Corporate Citizenship Activity



Support for Major Environmental Conservation Organizations (Japan)

In the environmental conservation field, Matsushita supports organizations in Japan that carry out socially significant activities, participates in their activities as a corporate member, and cooperates in the implementation of programs.

Japanese Environmental Conservation Organizations Supported by Matsushita

- (F) Japan National Trust
- (F) OISCA-International
- (F) Nature Conservation Society of Japan
- (F) Wild Bird Society of Japan
- (F) World Wildlife Fund Japan
- (I) Keidanren Committee on Nature Conservation
- (I) National Land Afforestation Promotion Organization
- (I) Japan Environmental Education Forum
- (F) Japan Environment Association
- (N) The Children of Earth's Club
- (N) Nature Film Network
- (F) Ecosystem Conservation Society – Japan
- Earth Day 2002 Steering Committee
- Action for Greening Sahel
- (F) Institute of Urban Traffic Research
- (F) Osaka City Promotion Association
- (I) Flower Society
- (I) Corporation to Protect Verdant Pine Trees in Japan
- pico (Kansai Environmental Information Station)

(I) Incorporated association (F) Foundation
(N) Specified non-profit corporation

Funding for FY'02: 22.77 million yen

Citizenship Collaboration College

This is an interactive study program, which guides participants to think and learn about various issues (such as global environment and international understanding) facing them as global citizens. The program is offered two or three times a year and is open to the public.

Visit to the Matsushita Eco Technology Center (METEC)

Showing of Films from Japan Wildlife Festival

Award-winning works from one of the three world-renowned wildlife film festivals, "Japan Wildlife Festival," supported by Matsushita, were shown at the Panasonic Center. Mr. Shoichi Sengoku, who is highly popular among children, was invited to give a lecture. On that day, 600 people including primary school students and their families participated. Children with hearing impairment also enjoyed the event with the help of sign language interpreters and computer-aided real-time translation. This event was held jointly with WWF Japan as an event to support the "Green Power Week" aimed at promoting environmental protection and dissemination of the use of natural energy.

Major Corporate Citizenship Activities

Children's Supporters☆Matching Fund

In cooperation with the Japan Initiative for Youth Development (specified non-profit corporation), Matsushita has operated the fund since 2001 to create a donation culture that helps strengthen the activity base of non-profit/non-governmental organizations that are working to facilitate the healthy growth of children.

■ Organizations that Received Grants in FY'02

(6 projects, 6.663 million yen)

(N) The Institute of Education for The 21st Century (Tokyo)
Programs to create a national data map of new venues for learning
(N) kodomoNPO (Aichi)
Programs to promote the participation of children in city planning
Tokyo YMCA "Liby" (Tokyo)
Establishment of a membership system and member support system
Tatsunoko Learning Center for Deaf Children (Tokyo)
Staff training programs
(N) Kyoto Children Center (Kyoto)
Strengthening of the operation of "Child Telephone Line Kyoto"
Youth Rehabilitation Support Association "Olive" (Osaka)
Programs to train staff on collaborative management

Environment's Supporters☆Matching Fund

In cooperation with the Eco Future Fund (specified non-profit corporation), Matsushita has operated this fund since 2002 to create a donation culture that helps strengthen the activity base of non-profit / non-governmental organizations that are working to promote ecological life.

■ Organizations that Received Grants in FY'02

(6 projects, 4.359 million yen)

Akanoi-Biwako Environmental Citizens' Initiative (Shiga)
Construction of a portal site for networking
(N) Citizens Environmental Foundation (Kyoto)
Projects to upgrade infrastructures, such as operation efficiency
(N) Kiko Network (Kyoto)
Development of website and pamphlets on the organization
Japan Center for a Sustainable Environment and Society (Tokyo)
Update of website for information disclosure
Oumi Junior Field (Shiga)
Development of supporter training programs
(N) Tsukuba Environment Forum (Ibaraki)
Update of website and improvement of accounting system

(N) stands for specified non-profit corporations.

Bird-watching with the Visually Impaired

Since 1999, Matsushita has hosted nature-watching gatherings for people with visual impairment twice a year (spring and fall) at gardens in the Tokyo Metropolitan Area. With the cooperation of the Wild Bird Society of Japan and the Japan Braille Library, many Matsushita employees participated as volunteers to enjoy bird watching with visually impaired people by listening to bird calls and admiring plants in gardens together.

The Japan Prize Award Ceremony

The Japan Prize was established by the founder Konosuke Matsushita's advocacy. The 19th Japan Prize Award Ceremony was graced by the presence of the Emperor and Empress of Japan at the National Theater, Tokyo. The Japan Prize laureates this year included Dr. Benoit B. Mandelbrot and Dr. James A. Yorke in the field of the science and technology of complexity, and Dr. Seiji Ogawa in the field of visualizing techniques in medicine. The Japan Prize is awarded to people who have made original and outstanding achievements in science and technology and contributed to the peace and prosperity of humankind.

Kid Witness News (KWN)

This is a program launched by Matsushita Electric Corporation of America in 1989 to support education for mainly primary and middle school students to nurture their creativity. Today, the program provides video equipment and production know-how to approximately 200 public schools in the USA and Canada in order to support their extra-curricular activities in video production. Matsushita employees also volunteer their time to provide support seminars.

A primary school student from Hawaii interviewing Mr. Zenji Abe, a Japanese navy officer who fought at Pearl Harbor

National Tour of the Shakespearean Play for Children

The Shakespearean Play has been performed in a form that can be enjoyed both by adults and children, touring in Japan during the summer vacation every year since 1995. Matsushita sponsors the event in collaboration with local Matsushita companies. As an activity aimed at enriching the spirit of children, Matsushita actively creates opportunities for the children to come in contact with the stage, by hosting workshops for middle and high school students and inviting them to watch stage construction, etc.

Friendship Concerts

As a corporate citizenship activity for the community, Matsushita has sponsored touring concerts by members of the New Japan Philharmonic symphony orchestra since 2002, visiting facilities for children with intractable diseases, schools for the disabled, and hospitals. These children seldom have the opportunity to be in contact with music. The concerts are named "Friendship Concerts" because they are seen as a link to connect people together.

Support for Japanese Traditional Art Crafts

The founder Konosuke Matsushita was profoundly interested in Japanese traditional art crafts, and became the head of the Kinki chapter of the Nihon Kogeikai in 1960. Since then, he has lent support, hoping to pass on and invigorate Japanese traditional art crafts. Today, Matsushita is offering a wide range of support to promote traditional art crafts, which can be said to be the origin of manufacturing. For example, Matsushita cooperates in filming successor development programs presented by those who harbor important intangible cultural heritage (living national treasure), helps the production and operation of the on-line gallery "Museum of Japanese Traditional Art Crafts," and sponsors the Exhibition of Japanese Traditional Art Crafts by offering the Matsushita Award (Kinki Region), etc.

OBP Arts Project

Matsushita supports young artists by providing them with a venue for artistic expressions such as music, fine art and creative dance at the Osaka Business Park (OBP)—representative high-rise buildings in western Japan. Today, it has developed into a venue of art management training for mainly university students. The Arts Project has turned into programs for discovering the social function of art by integrating business and art, and exchanges among students, working people and citizens.

K. Matsushita Foundation of Expo '90

In order to facilitate the realization of the Expo'90 philosophy of "Coexistence of Mankind and Nature," the Foundation gives Commemorative and Encouragement Prizes every year to individuals and groups residing in Japan in recognition of their distinguished academic studies and practical activities. In March 2003, concurrently with the 11th Commemorative Award Ceremony, a lecture was given by Dr. Muneo Yoshikawa, professor emeritus of the University of Hawaii. The theme of the lecture was "Let Sky have Stars, Ground have Flowers, and Man have Love–Ways to Lead Life in Harmony with Nature."

Panasonic Scholarship Inc.

As an event to commemorate the 80th anniversary of the founding of Matsushita, the Panasonic Scholarship Program was established in 1998 to nurture leaders of Asia in the 21st century. This year marks the fifth year of the scholarship. Students from Asian countries are locally recruited and selected to attend science and engineering graduate schools in Japan. Adding the newly selected 19 candidates for FY'03, a total of 160 students have been awarded the scholarship.

Love the Earth Citizens' Campaign

Matsushita started the Love the Earth Citizens' Campaign (LE activities) in 1998. In the campaign, employees and their families actively participate in environmental activities at home and in their communities. We believe that changing the awareness, action, and lifestyle of individuals can contribute to the transition to a sustainable society. In FY'02, we shifted the emphasis of our activities from awareness enhancement to participation, and have started model activity in each region to form the core of activities.

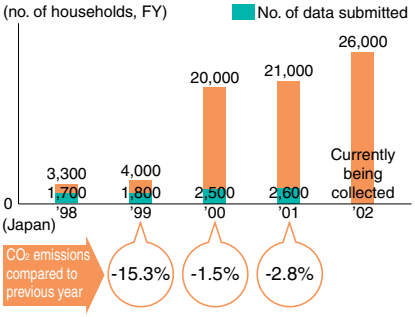
Highlights 2002 Love the Earth Citizens' Campaign p. 25

The Environmental Household Budget Ledger

In Japan, the increase in energy consumption by the household sector has become a serious issue, and people are encouraged to enhance their awareness of energy saving and to put it into practice at their homes. As a company that supplies electric home appliances, Matsushita encourages employees to pursue ecological life by popularizing the use of the Environmental Household Budget Ledger at their homes.

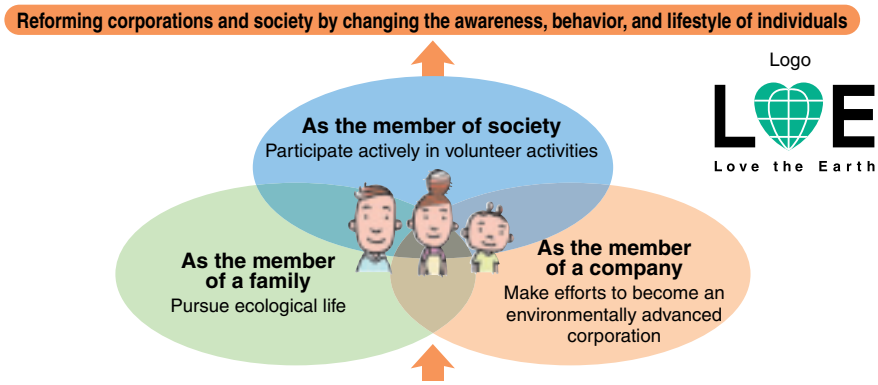
Families having adopted the use of this ledger are called "LE Families." "LE Family Certification" is given to those who submitted the data from their ledgers. We are stepping up our efforts to enhance employees' participation in the campaign. In FY'02, there were 26,000 LE Families.

■ LE Families and Reduction in CO_2 Emissions



URL Environmental Household Budget Ledger
matsushita.co.jp/environment/kakeibo_site/ (Japanese only)

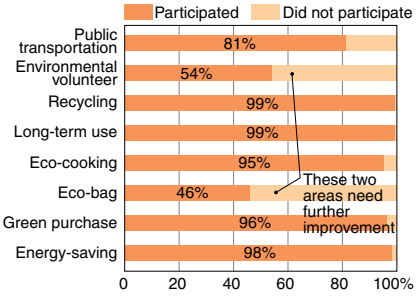
■ The Goal of Love the Earth Citizens' Campaign



Employees' Environmentally Conscious Lifestyle Survey

Defining the specific contents of an "environmentally conscious lifestyle," Matsushita carried out an environmentally conscious lifestyle survey of their 10,255 employees (at 22 sites) from June to October 2002. Matsushita also identified potential leaders of the ecological life campaign and registered them in the LE Personnel Database. The information is meant to be used to create a Group-wide network to facilitate and promote LE activities.

■ Results of the Environmentally Conscious Lifestyle Survey (percentage of those participating)



Model Eco-bag Users

As an act in support of an environmentally conscious lifestyle, we advocate the Eco-bag Campaign, which promotes the use of one's own bags to do grocery shopping. With the goal of popularizing the practice in local communities, in FY'02 we implemented an initiative to reduce the use of shopping bags for three months with 340 families (at 19 sites). We summarized the results and made a recommendation to Japan's Ministry of the Environment at the Conference on "Wa-no-Kuni-Kurashi," an Eco-society through Partnership participated in by Matsushita.

Matsushita Green Volunteer (MGV) Club

The Matsushita Green Volunteer (MGV) Club was established in 1993 with funds contributed by approximately 70,000 of Matsushita's current and retired employees and the Labor Union. In support of the Club, Matsushita also donated almost the same amount as a matching gift. The Club has carried out various activities, including cleanup of the Osaka Tsurumi Ryokuchi green areas, photo contests, and fixed-point observations of cherry blossoms. In FY'02, 10,000 people took part in these activities together with their families. In February 2002, a hand-made biotope*1 was created in a space of 500 m^2 in the Labor Union premises. The construction involved 400 volunteers and took about one month to complete. It has served as a nature spot for employees to enjoy rice farming experiences such as transplanting rice seedlings and harvesting.

*1 Riparian space and green area inhabited by diverse species of animals and plants

Employees and families harvesting rice in October 2002

Facts & Figures

Please visit our website for further information on our Environmental Performance Data by Business Domain Company and Site Information.

URL **matsushita.co.jp/environment/data/**

ISO 14001 Certification Status

Region	Sites of Business Domain Companies and Affiliated Companies	Major Products	Date of Registration
Japan (Manufacturing)	Semiconductor Company		
	Multiple-site Certification Group (4 sites)	Semiconductor	1997.11 ★
	Matsushita Electronic Instruments Corporation	Semiconductor, Magnetron	1997.6 ★
	Toyo Dempa Co., Ltd., Kyoto Site	Diode, Transistor, Micro components	1997.6 ★
	Toyo Dempa Co., Ltd., Kameoka Site	Lead frame, Circuit components	1997.9 ★
	Kagoshima Matsushita Electric Co., Ltd.	LED, LCD module	1997.3 ★
	Kumamoto Dempa Co., Ltd.	Diode, Transistor	1997.9 ★
	Display Devices Company/Lighting Company		
	Multiple-site Certification Group (3 sites)	Fluorescent lamp, CRT, PDP	1996.9 ★
	West Electric Co., Ltd., Nagatano Site	Flashtube, Backlight lamp	1998.3 ★
	Inai Electronics Co., Ltd.	Bulb, Glow starter	1998.1 ★
	Matsushita Battery Industrial Co.,Ltd.		
	Multiple-site Certification Group (3 sites)	Batteries	1998.9 ★
	Moriguchi Site A Block	Alkaline manganese battery	1998.4 ★
	Moriguchi Site B Block	Lithium battery	1998.7 ★
	Matsushita Electronic Components Co., Ltd.		
	Multiple-site Certification Group (15 sites)	Electronic components	1996.12 ★
	High Frequency Products Business Unit	Digital tuner	1997.11 ★
	High Frequency Products Business Unit, Motomiya Site	Hybrid IC	1997.11 ★
	Matsushita Nitto Electric Co., Ltd.	Dielectric filter	1998.1 ★
	Motor Company		
	Daito Site	Industrial motor, Controller	1997.8 ★
	Takefu Site	Home appliance/air conditioner motor	1998.2 ★
	Yonago Site	IT equipment motor	1997.12 ★
	Matsuzaka Electronic Circuit Co., Ltd.	Industrial compact geared motor	1999.2 ★
	Panasonic Factory Solutions Co., Ltd.		
	Kofu Site	Electronic chip mounter	1997.12 ★
	Tosu Site	Electronic chip mounter	1997.8 ★
	Matsushita Industrial Equipment Co., Ltd.		
	Multiple-site Certification Group (4 sites)	FA equipment, Capacitor, Power distributor	1998.3 ★
	Panasonic AVC Networks Company		
	Multiple-site Certification Group (10 sites)	TV, VCR, Audio equipment, DVD	1995.11 ★
	Panasonic Communications Co.,Ltd.		
	Chikugo Site	Cordless phone	1997.11 ★
	Saga Site	Printer	1997.7 ★
	Kikusui Site	CD-R/RW, COMBO drive	1998.3 ★
	Taimei Site	Deflection yoke	1997.10 ★
	Oita Site	Electric motor	1998.3 ★
	Joshima Site	Well pumping equipment	2002.2
	Nagasaki Site	Facsimile	1997.10 ★
	Utsunomiya Site	Laser scanning unit	1998.3 ★
	Niigata Site	Facsimile, PPC	1997.5 ★
	Nagano Site	Toner cartridge	1998.4 ★
	Shonan Site	Press reporting equipment	1998.12 ★
	Miyazaki Matsushita Electric Co.,Ltd.	Ceramic capacitor, Fixed resistor	1997.12 ★
	Panasonic Mobile Communications Co.,Ltd.		
	Multiple-site Certification Group (2 sites)	Communications network system	1997.12 ★
	Hanamaki Site	Cellular phone, PHS	1998.10 ★
	Shizuoka Site	Cellular phone	1997.12 ★
	Panasonic Automotive Systems Company		
	Matsumoto Site	Car navigation system, Car audio equipment	1997.6 ★
	Panasonic System Solutions Company		
	Shirakawa Site	Microphone, CCVE camera	1995.12 ★
	Home Appliances Group		
	<Matsushita Home Appliances Company>		
	Home Utility Appliances Division	Automatic washing machine, Dishwasher	1998.7 ★
	Ecology & Cleaning Products Division	Vacuum cleaner, Garbage disposer	1998.6 ★
	Cooking Systems Division, Yashiro Site	IH rice cooker, Rice cooker	1998.4 ★
	Cooking Systems Division, Kobe Site	IH cooking heater, Electric pot	1998.6 ★
	Nara Site	Microwave oven, Gas/kerosene equipment	1997.11 ★
	Kusatsu Site	Air conditioner, Compressor	1997.10 ★
	Kofu Site	Compressor	1997.5 ★
	<Matsushita Housing Equipment & Systems Corporation>		
	Kitchen and Bath Products Group	Kitchen system, Bath system	1998.7 ★
	<Matsushita Refrigeration Company>		
	Refrigerator Division, Kusatsu Site	Refrigerator	1997.2 ★
	Fujisawa Site	Refrigerator, Refrigerator compressor	1997.4 ★
	Cooling Device Division	Refrigerator heat exchanger	1997.10 ★
	Food Solution Business	Vending machine, Food industry-related equipment	1997.10 ★
	Mana Precision Casting Co., Ltd.	Cast metal components	1998.12 ★

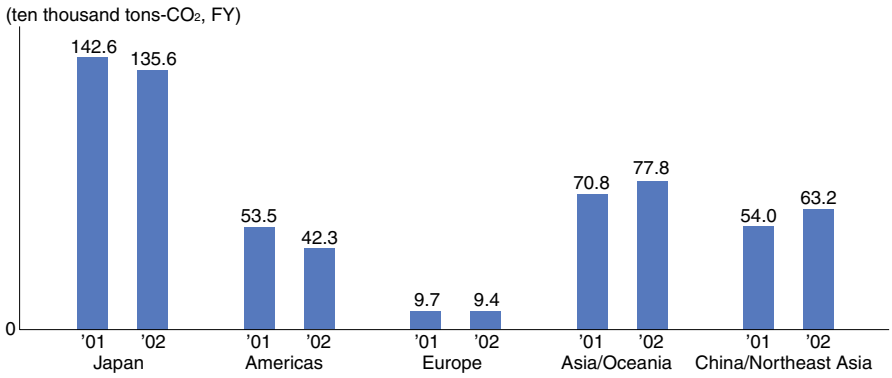
Region	Sites of Business Domain Companies and Affiliated Companies	Major Products	Date of Registration
Japan (Manufacturing)	Matsushita Ecology Systems Co., Ltd.		
	Multiple-site Certification Group (2 sites)	Ventilating fan, Kitchen-hood, Ventilating equipment	1996.12 ★
	Osaka Site	Air purifier, Humidifier, Dehumidifier	1998.2 ★
	Fujisawa Site	Bath dryer, Heat exchanger unit	1998.8 ★
	Matsushita Environmental and Air-Conditioning Engineering Co., Ltd.	Air conditioning system, Clean system	2001.3
	Matsushita Kotobuki Electronics Industries, Ltd.		
	Multiple-site Certification Group (5 sites)	AV equipment, Computer peripherals	1998.3 ★
	Victor Company of Japan, Ltd.		
	Headquarters	Multi-layer circuit board	1998.11 ★
	Hachioji Site	Monitoring equipment	1997.1 ★
	Rinkan Site	CD	1997.4 ★
	Yokosuka Site	Camcorder	1997.9 ★
	Mito Site	DVC tape	1998.3 ★
	Yamato Site	Card printer, DVD	1998.8 ★
	Maebashi Site	Office equipment, Car stereo	1998.8 ★
	Fujieda Site	PC motor	1999.1 ★
	Oyama Site	Deflection yoke	1999.10 ★
	Victor Isesaki Electronic Co., Ltd.	Circuit board assembly	1998.12 ★
	Matsushita Electric Industrial Co., Ltd.		
	Electronic Circuit Capacitor Division/Matsue Matsushita Electric Co., Ltd.	Film capacitor	1998.4 ★
	Matsushita Fujisawa Factory Center	Magnesium alloy chassis	1997.4 ★
	Matsushita Eco Technology Center Co., Ltd.	Recycling for home electric appliances	2002.3
	National Bicycle Industrial Co., Ltd.	Bicycle	1999.5 ★
	Shinto Co., Ltd.	Pumps, Electric motor, Control panel	2001.1
Japan (Non-manufacturing)	Matsushita Electric Industrial Co., Ltd., Headquarters		1998.9 ★
	Matsushita Electric Industrial Co., Ltd., Tokyo Site, Multiple-site Certification Group (2 sites)		1998.8 ★
	Matsushita Electric Industrial Co., Ltd., Kyobashi/OBP Twin21 N Tower		1999.5 ★
	Matsushita Electric Industrial Co., Ltd., Engineering Group, Multiple-site Certification Group (4 sites)		1998.8 ★
	Matsushita Electric Industrial Co., Ltd., Corporate Manufacturing Innovation Division		1998.3 ★
	Matsushita Electric Industrial Co., Ltd., Corporate Industrial Marketing & Sales Division		2000.12
	Matsushita Electric Industrial Co., Ltd., Human Resources Development Company, Hirakata Site		2000.11
	Panasonic Communications Co., Ltd., Fukuoka Headquarters		1997.12 ★
	Panasonic Communications Co., Ltd., Meguro Site		2001.12
	Panasonic Mobile Communications Co., Ltd., Research Laboratory, Multiple-site Certification Group (3 sites)		2002.3
	Matsushita Home Appliances Company, Mikuni Site		2001.1
	Victor Company of Japan, Ltd., Kurihama Engineering Center		1999.2 ★
	Matsushita Marketing Training Institute		1999.12 ★
	Matsushita Industrial Sanitary Science Center		2000.3 ★
	Matsushita Logistics Co., Ltd.		2000.7
Japan (Third-Sector Companies)	Kibi Matsushita Co., Ltd.	VCR	1998.9 ★
	Katano Matsushita Co., Ltd.	Micro cassette tape	1999.1 ★
Americas (Manufacturing)	Matsushita Electric Corporation of America, Motor Company	Electric motor	1999.5 ★
	Matsushita Electric Corporation of America, PASNA	Car audio	1998.11 ★
	Matsushita Electric Corporation of America, Home Appliance Co., Ltd.	Vacuum cleaner	1999.2 ★
	Matsushita Display Devices Company of America	CRT	1997.12 ★
	Matsushita Battery Industrial Corporation of America (LD)	Lithium battery	1999.1 ★
	Matsushita Battery Industrial Corporation of America (MD)	Battery components	1999.1 ★
	Matsushita-Ultra Tech. Battery Corporation	Battery	1999.1 ★
	Matsushita Electronic Components Corporation of America	Electrolytic capacitor	1997.8 ★
	Panasonic Disc Manufacturing Corporation of America	DVD disc	1999.4 ★
	Matsushita Avionics Systems Corporation (Lake Forest)	Avionics equipment	2001.1
	Matsushita Avionics Systems Corporation (Bothell)	Avionics equipment	2002.3
	Matsushita Kotobuki Electronics Industries of America Inc.	TV-video combo unit	1999.2 ★
	JVC Magnetics America Co.	Videotape	2000.3 ★
	JVC Disc America (Tuscaloosa)	CD	2000.8
	Panasonic de Mexico, S.A. de C.V.	TV, Stereo set	1999.2 ★
	Matsushita Battery Industrial de Mexico, S.A. de C.V.	Rechargeable sealed lead-acid battery	2001.12
	Matsushita Battery Industrial de Baja California, S.A. de C.V.	Ni-Cd battery, Ni-HM battery	1998.4 ★
	Matsushita Electronic Components de Baja California, S.A. de C.V.	Electronic tuner	1998.4 ★
	Matsushita Electronic Components de Tamaulipas, S.A. de C.V.	Car speaker	2000.1 ★
	Panasonic AVC Networks de Baja California S.A. de C.V.	TV, STB	1997.12 ★
	Panasonic Communications de Mexico, S.A. de C.V.	Deflection yoke, Cordless phone	1998.2 ★
	Panasonic Automotive Systems de Mexico, S.A. de C.V.	Car audio	1997.12 ★
	Matsushita Home Appliance de Mexico, S.A. de C.V.	Vacuum cleaner, Microwave oven	2002.5
	JVC Industrial de Mexico, S.A. De C.V.	TV	1997.4 ★
	Matsushita Electric of Puerto Rico, Inc.	Speaker box	1999.3 ★
	Panasonic Centroamericana S.A.	Battery	1999.3 ★
	Panasonic Peruana S.A.	Battery	1998.11 ★
	Panasonic de Brasil Ltda.	Battery	1999.3 ★
	Panasonic da Amazonia S.A.	TV, Microwave oven, Audio equipment	1998.10 ★

Region	Sites of Business Domain Companies and Affiliated Companies	Major Products	Date of Registration
Americas (Manufacturing)	Panasonic Componentes Electronicos do Brasil Ltda.	Electronic components	1999.3 ★
Europe (Manufacturing)	Matsushita Electronic Magnetron Corporation (U.K.) Ltd.	Magnetron	1997.5 ★
	Matsushita Electronic Components (U.K.) Ltd.	Speaker, Transformer, Coil	1999.4 ★
	Matsushita Electric (U.K.) Ltd.	TV, FBT, Microwave oven	1997.7 ★
	Panasonic Communications Company (U.K.) Ltd.	PBX, Telephone-related equipment	1996.9 ★
	JVC Manufacturing U.K. Limited	TV, Monitor	1998.4 ★
	Matsushita Display Devices (Germany) GmbH	CRT	1999.4 ★
	Matsushita Electronic Components (Europe) GmbH	Tuner, Power supply unit	1999.1 ★
	Panasonic AVC Networks Germany GmbH	DVD player, Audio equipment	1997.12 ★
	Panasonic Automotive Systems Deutschland G.m.b.H.	Car audio	1997.2 ★
	JVC Video Manufacturing Europe GmbH	VCR	1999.12 ★
	Matsushita Battery Belgium N.V.	Battery	1998.11 ★
	Matsushita Electric Espana S.A.	Vacuum cleaner, Audio equipment	1998.5 ★
	Matsushita Battery Poland S.A.	Battery	1998.11 ★
	Panasonic AVC Networks Czech s.r.o.	TV, FBT	1998.11 ★
	Panasonic Mobile & Automotive Systems Czech s.r.o.	Cellular phone, Car audio	2003.2
	Matsushita Electronic Components (Slovakia) s.r.o.	Tuner, Power transformer	2000.7
Asia/ Oceania (Manufacturing)	Matsushita Semiconductor Singapore Pte. Ltd.	Semiconductor	1997.12 ★
	Matsushita Electronic Components (S) Pte. Ltd.	Electronic components	1998.4 ★
	Matsushita Electric Motor (S) Pte. Ltd.	Micro electric motor	1998.11 ★
	Matsushita Technology (S) Pte. Ltd.	Electronic chip mounter	1997.12 ★
	Panasonic AVC Networks Singapore Pte. Ltd.	Mini component stereo	1997.2 ★
	Matsushita Refrigeration Industries (S) Pte. Ltd.	Refrigerator compressor	1996.11 ★
	Matsushita Kotobuki Electronics Industries Singapore Pte. Ltd.	HDD	1998.9 ★
	JVC Electronics Singapore Pte. Ltd.	Car audio	1998.12 ★
	Matsushita Electric Co., (M) Bhd. SA1	TV, Battery	1998.11 ★
	Matsushita Electric Co., (M) Bhd. SA2	Vacuum cleaner, Electric fan	1996.12 ★
	Matsushita Electric Co., (M) Bhd. BNG	Washing machine, Refrigerator	1997.8 ★
	Matsushita Electric Co., (M) Bhd. PK	Electric iron base	1998.12 ★
	Toyodempa Malaysia Sdn. Bhd.	Semiconductor, Micro components	1998.12 ★
	Matsushita Display Device Corporation (M) Sdn. Bhd.	CRT	2000.6
	Matsushita Electronic Components (M) Sdn. Bhd.	Electronic components	1998.10 ★
	Matsushita Electronic Devices (M) Sdn. Bhd.	Electronic components	1998.10 ★
	Matsushita Electronic Motor (Malaysia) Sdn. Bhd.	AV/OA motor	1998.4 ★
	Panasonic AVC Networks Kuala Lumpur Malaysia Sdn. Bhd.	TV, FBT	1997.1 ★
	Panasonic AVC Networks Johor Malaysia Sdn. Bhd.	Radio cassette recorder, VCR	1997.2 ★
	Panasonic Communications (Malaysia) Sdn. Bhd.	Deflection yoke	1997.10 ★
	Matsushita Industrial Corporation Sdn. Bhd.	Window-type air conditioner	1997.6 ★
	Matsushita Air-Conditioning Corporation Sdn. Bhd.	Separate-type air conditioner	1997.12 ★
	Matsushita Compressor and Motor Sdn. Bhd. 1	Compressor	1997.12 ★
	Matsushita Compressor and Motor Sdn. Bhd. 2	Motor	1997.12 ★
	Matsushita Compressor and Motor Sdn. Bhd. 3	Compressor	1997.12 ★
	Matsushita Foundry Industries Sdn. Bhd.	Precision casting components	1998.7 ★
	Matsushita Refrigeration Industries (M) Sdn. Bhd.	Refrigerator compressor	1998.5 ★
	JVC Video Malaysia Sdn. Bhd.	Camcorder	1999.5 ★
	JVC Electronics Malaysia Sdn. Bhd.	Audio equipment	1999.5 ★
	Matsushita Precision Capacitor (M) Sdn. Bhd.	Film capacitor	1998.12 ★
	National Thai Co., Ltd. Group	TV, Electronic components, Electric fan	1998.7 ★
	Matsushita Battery (THAILAND) Co., Ltd.	Dry battery, Storage battery	1998.7 ★
	Matsushita Home Appliance (THAILAND) Co., Ltd.	Washing machine, Rice cooker	1998.7 ★
	Matsushita Refrigeration Company (THAILAND) Ltd.	Heat exchanger	1998.7 ★
	JVC Manufacturing Co., Ltd.	FBT	1999.4 ★
	JVC Components Co., Ltd.	AV motor	2000.1 ★
	Matsushita Electronic Philippines Corporation	TV, Refrigerator, Air conditioner	1998.5 ★
	Panasonic Communications Imaging Corporation of the Philippines	PPC	2002.7
	Panasonic Mobile Communications Corporation of the Philippines	Cellular phone, FDD, ECM (Microphone)	1997.12 ★
	P. T. National Gobel	TV, Refrigerator, Air conditioner	1998.1 ★
	P.T. Matsushita Semiconductor Indonesia	Semiconductor	2000.7
	P.T. Matsushita Gobel Battery Industry	Battery, Battery application equipment	1997.2 ★
	P.T. Batam Matsushita Battery	Ni-Cd battery, Solar battery	1998.1 ★
	P.T. Panasonic Gobel Electronic Components	Electronic components	1999.3 ★
	P.T. Matsushita Lighting Indonesia	Fluorescent lamp	1999.12 ★
	P.T. Matsushita Kotobuki Electronics Industries Indonesia	VCR, Camcorder, Optical disc drive	1998.6 ★
	P.T. Matsushita Kotobuki Electronics Peripherals Indonesia	HDD magnetic head	1999.11 ★
	P.T. JVC Electronics Indonesia	Car stereo, Audio equipment	1999.5 ★
	Panasonic AVC Networks Vietnam Co., Ltd.	TV, Audio equipment	2001.10
	JVC Vietnam Ltd.	TV, Audio equipment, DVD	2001.4
	Panasonic AVC Networks Australia Pty. Ltd.	TV	1998.12 ★
	Indo National Ltd.	Battery	1998.2 ★
	Matsushita Lakhanpal Battery India Ltd.	Battery	1998.2 ★
Asia/ Oceania (Manufacturing)	Indo Matsushita Carbon Co., Ltd.	Carbon rod for battery	1998.7 ★
	Matsushita Television & Audio India Limited	TV, Audio equipment	2001.2
	Indo Matsushita Appliances Co., Ltd.	Rice cooker, Blender	1998.12 ★
	Matsushita Washing Machine India Pvt. Ltd.	Washing machine	2001.1
China/ Northeast Asia (Manufacturing)	Beijing Matsushita Color CRT Co., Ltd.	CRT	1996.12 ★
	Beijing Matsushita Electronic Components Co., Ltd.	Tuner	1998.5 ★
	Panasonic Putian Mobile Communications Beijing Co., Ltd.	Cellular phone	1998.11 ★
	Beijing Matsushita Lighting Co., Ltd.	Fluorescent lamp	2002.12
	Beijing Matsushita Seiko Co., Ltd.	Air-handling unit, Fan coil	1998.11 ★
	JVC Beijing Electronics Industries Co., Ltd.	VCR	1999.9 ★
	Beijing Matsushita Precision Capacitor Co., Ltd.	Film capacitor	1998.12 ★
	Tianjin Matsushita Electronic Components Co., Ltd.	Fixed resistor, Capacitor	1999.1 ★
	Tangshan Matsushita Industrial Equipment Co., Ltd.	Welding equipment	1998.11 ★
	Shenyang Matsushita Storage Battery Co., Ltd.	Rechargeable sealed lead-acid battery	1998.12 ★
	China Hualu Matsushita AVC Co., Ltd.	VCR, DVD-related equipment	1998.6 ★
	Panasonic Automotive Systems Dalian Co., Ltd.	Car audio	1998.12 ★
	Anyang Matsushita Carbon Co., Ltd.	Carbon rod for battery	1999.2 ★
	Shangdong Matsushita Television and Visual Co., Ltd.	TV	1998.11 ★
	Qingdao Matsushita Electronic Components Co., Ltd.	Touch switch	1997.12 ★
	Qingdao Matsushita Electronic Components (Free Trade Zone) Co., Ltd.	Touch switch	2000.8
	Wuxi Matsushita Refrigeration Co., Ltd.	Refrigerator	1998.10 ★
	Wuxi Matsushita Refrigeration Compressor Co., Ltd.	Refrigerator compressor	1998.10 ★
	Hangzhou Matsushita Motor Co., Ltd.	Compact home appliance motor	1998.9 ★
	Hangzhou Matsushita Home Appliance Co., Ltd.	Washing machine	1997.12 ★
	Hangzhou Matsushita Kitchen Appliances Co., Ltd.	Rice cooker	1999.12 ★
	Hangzhou Matsushita Gas Appliances Co., Ltd.	Gas cooker	1998.11 ★
	Shanghai Matsushita Semiconductor Co., Ltd.	Semiconductor	1998.12 ★
	Shanghai Matsushita Electronic Instrument Co., Ltd.	Magnetron	1998.6 ★
	Shanghai Matsushita Battery Co., Ltd.	Battery	1998.4 ★
	Shanghai Matsushita Microwave Oven Co., Ltd.	Microwave oven	1998.6 ★
	JVC Shanghai Electronics Industries Co., Ltd.	DVD	1998.6 ★
	Matsushita Audio (Suzhou) Co., Ltd.	CCVE camera	1998.10 ★
	Matsushita Audio (Xiamen) Co., Ltd.	Radio cassette recorder, Personal headphone stereo	1997.12 ★
	Matsushita-Wanbao (Guangzhou) Electric Iron Co., Ltd.	Electric iron	1998.12 ★
	Guangzhou Matsushita Air-Conditioner Group	Air conditioner, Compressor	1998.8 ★
	JVC Guangzhou Electronics Co., Ltd.	Electronic components	1999.11 ★
	Guangzhou Matsushita Ecology Systems Co., Ltd.	Ventilating fan, Ceiling fan	1998.9 ★
	Xinhui Matsushita Industrial Equipment Co., Ltd.	Capacitor	1998.12 ★
	Zhuhai Matsushita Battery Co., Ltd.	Alkaline storage battery	1998.9 ★
	Zhuhai Matsushita Electric Motor Co., Ltd.	AV/OA motor	1998.10 ★
	Matsushita Electric (Taiwan) Co., Ltd.	TV, VCR	1997.5 ★
	Panasonic AVC Networks Taiwan Co., Ltd.	Personal computer	1997.4 ★
	Taimatsu Industrial Co., Ltd.	Carbon rod for battery	1998.7 ★
	Kuang Yuan Co., Ltd.	Deflection yoke, FBT	1998.4 ★
	Matsushita Electronic Components (H.K.) Co., Ltd.	Electronic components	1999.4 ★
Outside Japan (Non-manufacturing)	Matsushita Electric Asia Pte. Ltd.		1999.5 ★
	Panasonic Singapore Laboratories Pte. Ltd.		1999.3 ★
	Matsushita Industrial Corporation Sdn. Bhd., Technology Center		1997.12 ★
	Matsushita Air-Conditioning R&D Centre Sdn. Bhd.		1998.10 ★
	Matsushita Compressor & Motor R&D Centre Sdn. Bhd.		1999.12 ★
	Siew-National Co., Ltd.		1999.9 ★
	A.P. National Sales Co., Ltd.		1999.9 ★
	Matsushita Seiko Hong Kong International Manufacturing Co., Ltd.		1999.2 ★
	Matsushita Electric Corporation of America		2000.3 ★
	Panasonic Mobile Communications Development Europe Ltd.		1996.7 ★

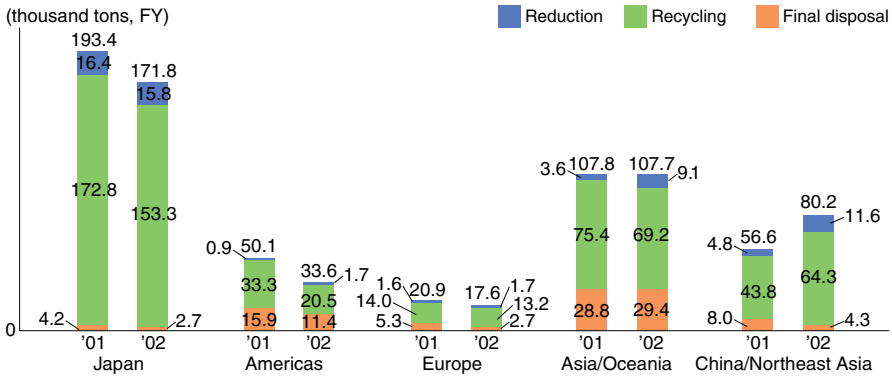
Note: Sites that have been updated by 3rd year audits are marked with ★ (as of March 2003).

Environmental Performance Data (by Region)

■ CO_2 Emissions

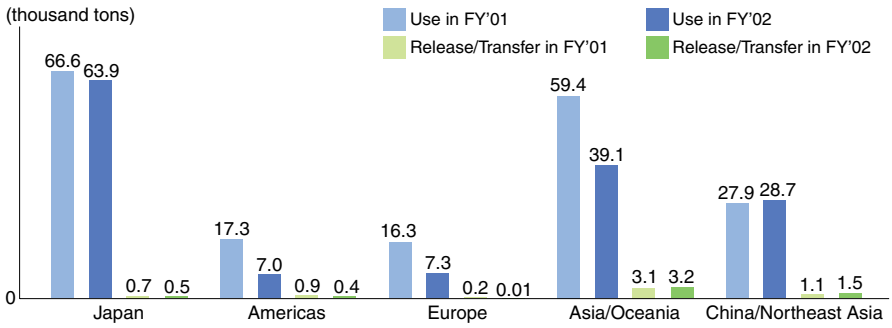


■ Generated Waste and By-products with Value



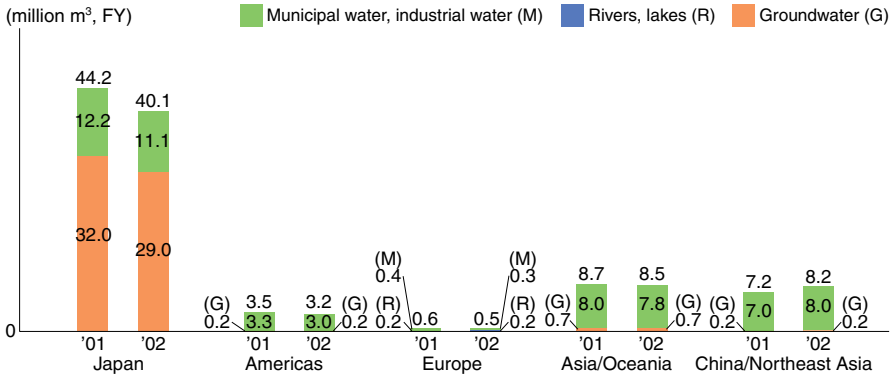
■ Use and Release/Transfer of Chemical Substances

(Designated Substances in the Matsushita Electric Group Chemical Substances Management Rank Guidelines)

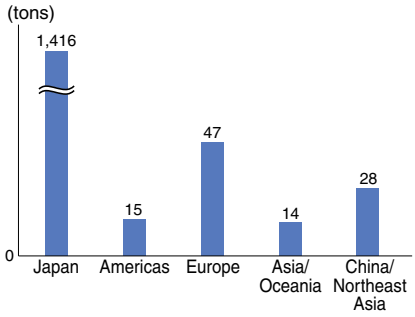


Note: Improvements in the accuracy of the FY'02 examination (intensive examination in accordance with the Matsushita Electric Group Chemical Substances Management Rank Guidelines) have resulted in a considerable reduction in the amount of chemical substances used and released/transferred in some areas.

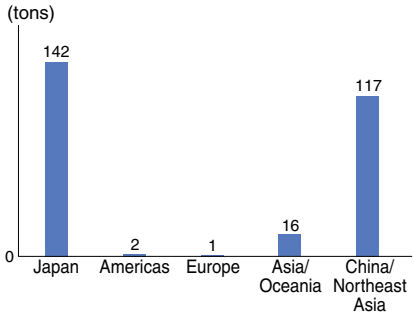
■ Water Consumption



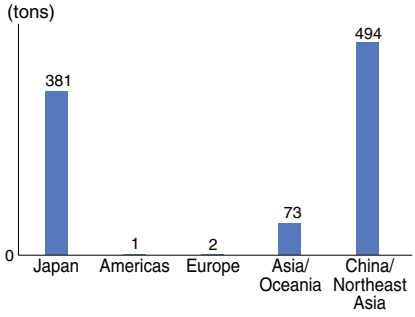
■ NOx Emissions (FY'02)



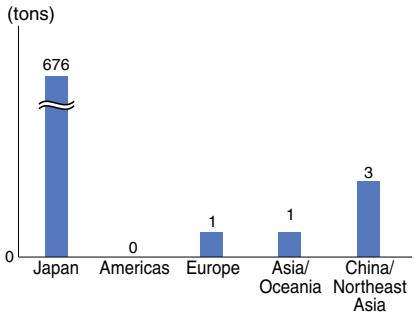
■ SOx Emissions (FY'02)



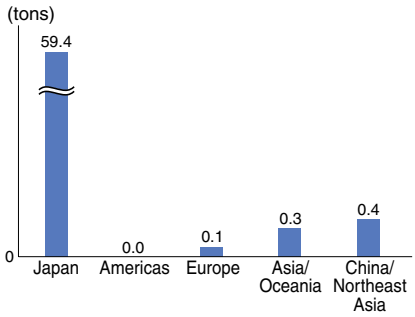
■ COD Load (FY'02)



■ Nitrogen Load (FY'02)



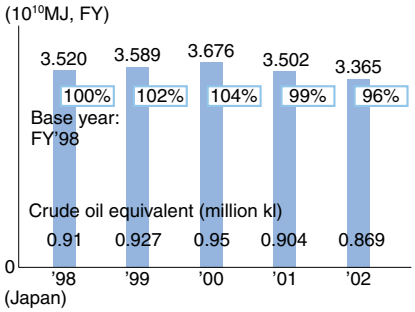
■ Phosphorus Load (FY'02)



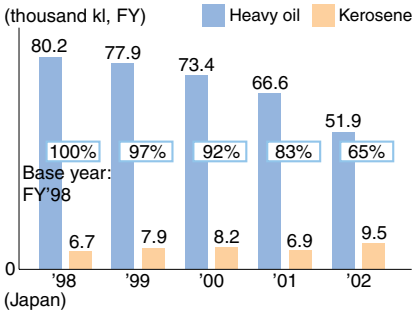
Environmental Performance Data (by Subject)

Prevention of Global Warming

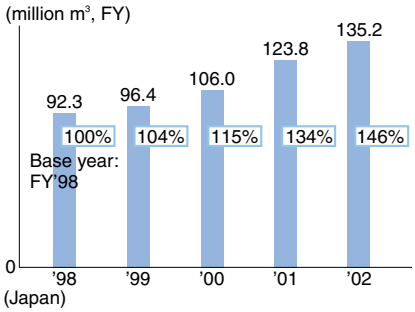
■ Energy Consumption



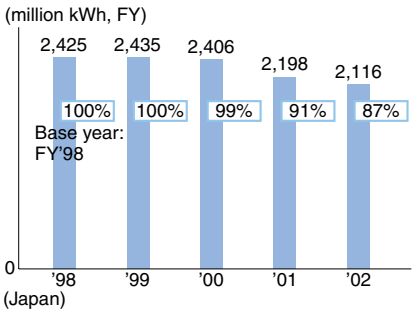
■ Heavy Oil and Kerosene Consumption



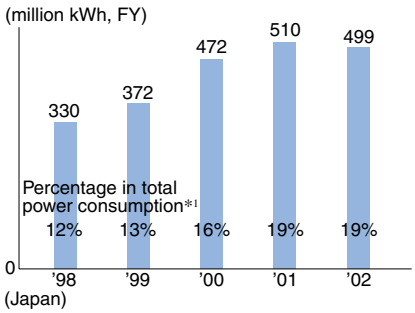
■ City Gas Consumption



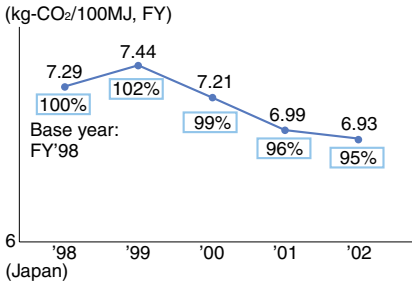
■ Purchased Power Consumption



■ Electricity Produced by Cogeneration



■ CO_2 Emissions per Unit of Joule (based on consumption)*2



■ Renewable Energy Consumption

FY'02 (Japan)	96,000 kWh

Note:
In Japan, we work to curb the consumption of energy such as heavy oil by implementing cogeneration systems powered by city gas, and by utilizing exhaust heat. As a result, energy consumption in terms of CO_2 emissions per unit of joule has decreased.

*1 Percentage of Cogeneration in Total Electricity = Cogenerated Electricity/(Purchased Electricity + Cogenerated Electricity)

*2 CO_2 Emissions per Unit of Joule (based on consumption)
An index showing the amount of CO_2 emissions per 100 MJ of heat based on energy consumption by calculating 1 kWh of electricity as 3.60 MJ (860 kcal). As for Energy Consumption, 1 kWh of electricity is calculated as10.26 MJ (2,450 kcal) input base.

Waste Reduction

■ Industrial Waste/By-products with Value and Final Disposal (Japan)

(Unit: tons)

Item	Generation			Recycling			Final disposal		
	FY'00	FY'01	FY'02	FY'00	FY'01	FY'02	FY'00	FY'01	FY'02
Metal	70,505	57,005	52,964	70,302	56,691	52,478	60	112	109
Plastics	22,284	21,923	23,241	14,315	17,717	19,125	3,064	1,237	1,046
Sludge	21,762	16,510	20,535	16,969	13,103	18,124	3,221	1,894	921
Acid	65,146	44,371	19,506	63,683	41,912	17,559	35	104	19
Paper	18,696	18,597	18,642	15,572	16,364	16,630	532	208	191
Alkali	8,161	11,721	14,840	7,545	7,200	10,684	79	52	18
Glass / Ceramics	8,845	7,821	7,535	7,482	7,389	6,817	898	338	210
Oil	6,936	5,841	5,966	5,504	4,987	5,314	107	78	79
Others	9,024	9,549	8,551	6,724	7,388	6,553	967	199	137
Total	231,359	193,338	171,780	208,096	172,751	153,284	8,963	4,222	2,730

Chemical Substances

■Release and Transfer of Chemical Substances (Japan)

(Unit: tons)

Substance group*1	PRTR*2 substances	Total	Release and transfer					Eliminated*4	Recycled*5	Consumed*6
			Released into air	Released into water	Released into soil	Transferred as waste*3	Subtotal			
Toluene	Class I	914.220	119.656	0.105	0.000	14.709	134.470	356.900	415.985	6.865
Xylene	Class I	138.772	67.608	0.000	0.000	16.243	83.852	30.085	21.785	3.051
Hexafluoroethane, Perfluoroethane		50.903	36.231	0.000	0.000	0.000	36.231	1.382	0.000	13.290
Hydrogen fluoride and its water-soluble salt	Class I	217.216	1.459	11.253	0.000	14.985	27.698	19.581	169.010	0.928
Manganese and its compound	Class I	8,420.847	0.062	0.090	0.000	19.117	19.269	0.005	245.200	8,156.374
Boron and its compound	Class I	48.510	2.892	1.288	0.000	14.310	18.491	0.420	10.754	18.845
Ethylbenzene	Class I	18.590	10.548	0.000	0.000	3.023	13.571	2.744	1.290	0.986
Copper water-soluble salt	Class I	521.380	0.000	0.009	0.000	11.452	11.462	0.000	411.597	98.321
Hydrogen chloride (gas)		11.265	10.373	0.000	0.000	0.115	10.488	0.768	0.000	0.009
Other brominated flame retardants		333.135	0.184	0.000	0.000	10.277	10.461	0.000	26.366	296.307
Dinitrogen monoxide		14.713	10.183	0.000	0.000	0.080	10.263	0.944	0.000	3.506
Lead and its compound	Class I	37,901.392	0.261	0.091	0.000	7.869	8.222	0.079	1,205.142	36,687.949
Tetrafluoromethane, Perfluoromethane		11.103	8.115	0.000	0.000	0.009	8.124	0.092	0.000	2.888
Antimony tetroxide	Class I	234.344	3.810	0.001	0.000	3.362	7.173	0.048	29.170	197.952
Tetrahydromethylphthalic anhydride	Class I	91.397	0.000	0.000	0.000	6.837	6.837	0.000	0.000	84.560
Bisphenol A type epoxy resin*7	Class I	128.725	1.581	0.000	0.000	4.091	5.672	0.000	0.151	122.903
Barium sulfate		76.575	0.000	0.000	0.000	5.114	5.114	0.001	2.254	69.206
Formaldehyde	Class I	12.684	1.010	0.257	0.000	3.414	4.681	1.224	0.002	6.777
Dichloropentafluoropropane	Class I	4.644	4.642	0.000	0.000	0.003	4.644	0.000	0.000	0.000
Ethylene glycol	Class I	973.406	1.094	0.059	0.000	3.363	4.515	0.000	485.774	483.116
Methylenebis (4,1-phenylene) diisocyanate	Class II	1,798.283	0.091	0.000	0.000	4.068	4.158	0.000	0.000	1,794.124
Styrene	Class I	91.415	4.083	0.000	0.000	0.018	4.100	0.000	0.147	87.168
Sulfur hexafluoride		4.487	3.408	0.000	0.000	0.017	3.424	0.016	0.000	1.047
Tetrahydrofuran		4.801	3.205	0.000	0.000	0.054	3.259	0.000	0.185	1.357
Zinc oxide		492.896	0.001	0.017	0.000	3.134	3.151	0.004	51.298	438.443
1,1,1,2-tetrafluoroethane		97.382	1.710	0.000	0.000	1.205	2.915	0.238	1.034	93.195
2-aminoethanol	Class I	20.396	0.605	0.014	0.000	2.006	2.625	17.448	0.298	0.025
Barium carbonate		19.848	0.000	0.000	0.000	2.561	2.561	0.000	0.434	16.853
Nickel compound	Class I	985.471	0.060	0.013	0.000	2.419	2.492	0.013	515.369	467.597
Trifluoromethane		3.422	2.477	0.000	0.000	0.005	2.482	0.001	0.000	0.939
Bis (2-ethylhexyl) phthalate	Class I	38.785	0.259	0.000	0.000	2.117	2.376	0.001	0.100	36.308
Chlorine		2.284	0.423	0.000	0.000	1.181	1.604	0.265	0.000	0.415
Arsenic and its compound	Class I	9.646	0.000	0.000	0.000	1.573	1.574	0.083	0.049	7.940
N,N-dimethylformamide	Class I	47.190	0.350	0.638	0.000	0.432	1.421	0.005	43.849	1.915
1,3,5-trimethylbenzene	Class I	3.050	0.848	0.000	0.000	0.513	1.361	0.833	0.000	0.856
Ethylene glycol monoethyl ether	Class I	1.497	1.268	0.000	0.000	0.008	1.276	0.000	0.172	0.049
1,1-dichloro-1-fluoroethane	Class I	42.243	1.031	0.000	0.000	0.103	1.133	0.000	0.307	40.803
Silver and its water-soluble compound	Class I	56.907	0.000	0.001	0.000	1.029	1.029	0.772	14.295	40.810
Others (111 substance groups)		10,066.082	7.272	0.319	0.000	9.787	17.379	48.511	3,637.628	6,362.563
Total		63,909.906	306.801	14.155	0.000	170.603	491.557	482.463	7,289.644	55,646.240

Note: The table shows substance groups that are released and transferred more than 1 ton.
Totals may not match the sum of individual items due to rounding.

*1 "Substance group" includes those listed in the Matsushita Electric Group Chemical Substances Management Rank Guidelines (Version 2) covering all substances listed in the Japanese PRTR Law.

*2 Substances designated by the Japanese PRTR (Pollutant Release and Transfer Register) law

*3 "Transferred as waste" includes the mass of substances transferred as waste, as well as wastewater discharge into the sewage system.

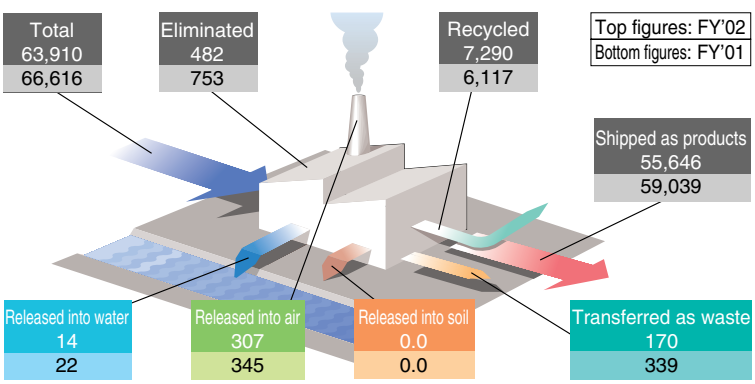
*4 "Eliminated" refers to the mass of substances that turned into other substances through neutralization, decomposition, or chemical reaction treatments.

*5 "Recycled" includes paid recycling, as well as free and inverse onerous contract.

*6 "Consumed" refers to the mass of substances which are contained in or accompanying products shipped out of factories.

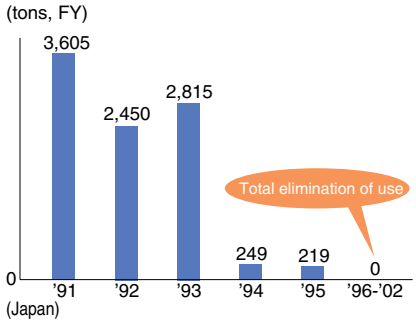
*7 Polymer of 4,4'-isopropylidenediphenol and 1-chloro-2,3-epoxypropane

■ **Material Balance of Chemical Substances** (Japan/Unit: tons)

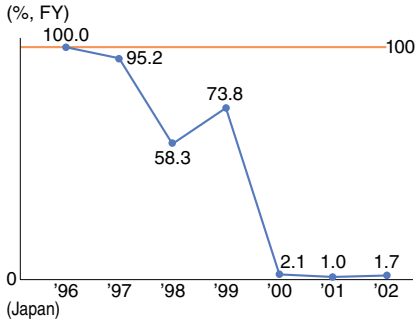


Environmental Risk Management

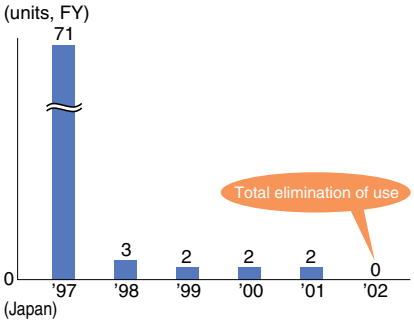
■ Use of VOCs as Detergent



■ Emissions of Hazardous Air Pollutants

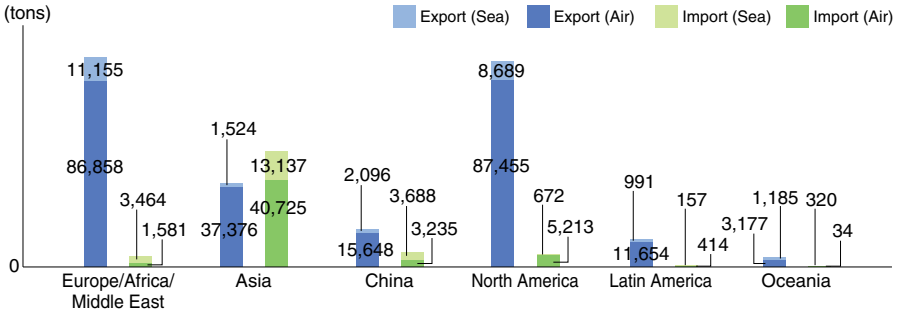


■ Use of In-house Incerinator



Shift to Green Distribution

■ CO_2 Emissions from Import/Export (rough estimates)



Environmentally Conscious Products

■ Products which Comply with the Law on Promoting Green Purchasing

Products	Number of Models*1	Products	Number of Models*1
Refrigerator	16	Printer	9
Washing machine	1	Facsimile	
Air conditioner	83	Personal computer	13
TV	25	Paper (office use)	1
Lighting apparatus	4	Garbage disposer	7
Photocopier	33	Solar power generator	1

*1 The number of models which comply with the Law on Promoting Green Purchasing (Japan) as of October 2002

Recycling of End-of-life Products

The status of overall recycling conducted by Matsushita Electric Industrial Co., Ltd. during April 1, 2002 to March 31, 2003 under the Japan's Law for Recycling of Specified Kinds of Home Appliances*

*Appliances subject to the law are air conditioners, TVs, refrigerators, and washing machines.

■ Overview of Recycling for Specified Kinds of Home Appliances

(Numbers after the decimal point are truncated.)

	Air conditioner	Television	Refrigerator	Washing machine
Collected units at designated points (thousand units)*1	271	754	600	499
Treated units for recycling (thousand units)*1*2	270	751	598	497
Treated amount for recycling (tons)*2	12,318	21,158	36,421	15,018
Recycled amount (tons)	9,446	14,517	21,742	8,871
Recycling rate (%)	76	68	59	59

*1 "Collected units at designated points" and "Treated units for recycling" do not include wrongly delivered units whose responsible manufacturers are unknown.
*2 "Treated units for recycling" and "Treated amount for recycling" refer to the total number of units and total weight of specific household appliances that have been treated for recycling in 2002.

■ Total Amount of Materials Treated for Paid or Free Recycling to Be Reused

(Unit: tons) (Numbers after the decimal point are truncated.)

	Air conditioner	Television	Refrigerator	Washing machine
Iron	4,957	1,772	16,650	7,685
Copper	458	658	251	54
Aluminum	449	71	111	18
Nonferrous metal and iron mixture	3,429	77	3,874	827
Cathode ray tube glass	—	11,384	—	—
Other by-products with value*3	152	551	854	285
Total	9,445	14,513	21,740	8,868

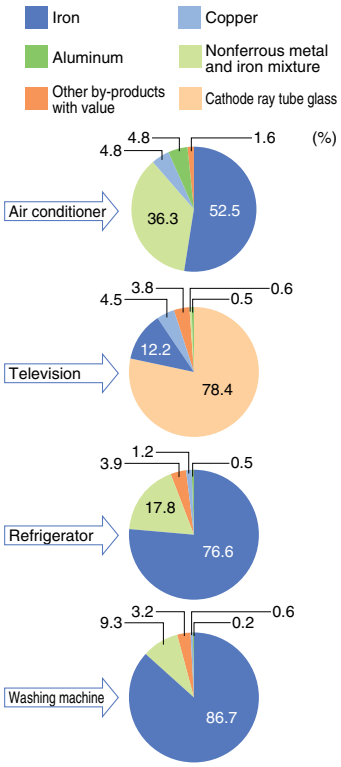
*3 "Other by-products with value" refers to printed circuit boards and other plastics.

■ Total Amount of Collected Refrigerants

(Unit: kg) (Numbers after the decimal point are truncated.)

	Air conditioner	Television	Refrigerator	Washing machine
Total	144,542	—	57,771	—

■ Collected Materials by Product



Environmental Communication

■ Publication History of the Sustainability Report

FY	Number of Copies		Pages	Date
	Japanese	English		
'97	17,000	8,000	24	Feb. 1998
'98	10,000	10,000	28	Mar. 1999
'99	18,000	5,000	40	Sep. 1999
'00	22,000	5,000	56	Sep. 2000
'01	20,000	5,000	66	Sep. 2001
'02	25,000	5,000	78	Jun. 2002

■ Participation in Exhibitions

Exhibition	Location	Date
Energy and Lifestyle Show	Hiroshima	Jul. 2002
JCCI, Young Entrepreneurs Group's National Conference	Osaka	Nov. 2002
Inter BEE	Chiba	Nov. 2002
Pollutec 2002	Paris	Dec. 2002
Eco-Products 2002	Tokyo	Dec. 2002
CES 2003	Las Vegas	Jan. 2003
ENEX2003	Tokyo,Osaka	Feb. 2003
Water EXPO	Osaka	Mar. 2003

■ Environmental Communication at Local Sites

(Unit: times)

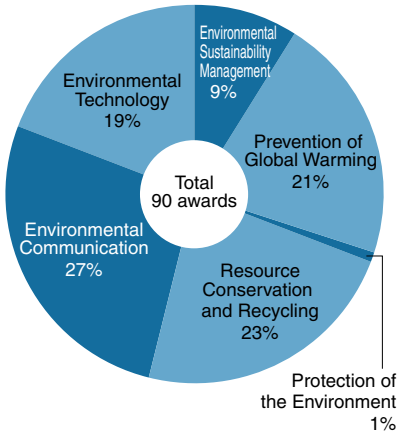
	Japan	Americas	Europe	Asia / Oceania	China / Northeast Asia
Factory tour	456	18	43	107	225
Collaboration with local community	246	18	8	44	10
Briefing for local residents	109	3	1	2	7

■ Major External Awards (FY'02)

Country	Presenter/Name of Award	Name of Prize	Winning Organization/Project
Environmental Sustainability Management			
Japan	Japan Industrial Journal, "Global Environment Award"	Grand Prize	Matsushita Electric Group
India	Environmental Agency of Andhra Pradesh	Award for Excellence in Environmental Management	Indo National Ltd.
Japan	Green Purchasing Network, "Green Purchasing Award"	METI Minister's Prize	Matsushita Electric Group
China	Liaoning Environmental Protection Agency	ISO 14001 Compliance Model Company Award	Shenyang Matsushita Storage Battery Co., Ltd.
China	Wuxi Environmental Protection Agency	Green Company Award for first half of the year 2002	Wuxi Matsushita Refrigeration Compressor Co., Ltd.
Taiwan	Environmental Protection Administration	Office Environmental Protection Award	Matsushita Electric (Taiwan) Co., Ltd.
Prevention of Global Warming			
U.S.	EPA, "Energy Star Partner of the Year Award"	Partner of the Year	Matsushita Electric Corporation of America
Japan	Energy Conservation Center, "Grand Prize for Energy Conservation"	METI Minister's Prize	U-series Natural Fluid (HC) Refrigerator
		ANRE Director-General's Prize	Hybrid Air Purifier
		Energy Conservation Center Chairman's Prize	XE series Air Conditioners, HID Lamp "Panabeam H"
Japan	METI, "Factory Energy Management Excellence Award"	METI Minister's Prize (Electricity Division)	Panasonic AVC Networks Company, Sendai Site
		ANRE Director-General's Prize (Electricity Division)	Panasonic AVC Networks Company, Tsuyama Site
Resource Conservation and Recycling			
U.S.	EPA, "eCycling Program"	Partner of the Year	Matsushita Electric Corporation of America
U.S.	EPA, "WasteWise Program"	Electronics Challenge Partner of the Year	
Environmental Communication			
Japan	Ministry of the Environment, "Environmental Reporting Award"	Minister of the Environment Prize	Matsushita Electric Group Environmental Sustainability Report 2002
Japan	The Yomiuri Shimbun, "Yomiuri Advertising Awards"	Readers' Grand Prize	Newspaper Advertisement "&ECO Series"
Japan	Dentsu Advertising Awards Screening Committee, "Dentsu Advertising Awards"	Dentsu Advertising Grand Award	TV Commercial "Electric Appliance Recycling"
Japan	Regional Exchange Center and Nihon Keizai Shimbun, "Contest of Environmental Advertisement"	Minister of the Environment Prize Environmental Advertisement Award, Poster Section	Advertisement "Natural Fluid (HC) Refrigerator"
U.S.	The New York Festivals	Television and Advertising Gold WorldMedal	TV Commercial "Leave it to Wool"
U.K.	Cannes International Advertising Festival	Finalist	
Environmental Technology			
Japan	Ohmsha	Electric Science Technology Promotion Award (OHM Technology Award)	Development of High-Efficiency Driving Technology for Inverter Air-conditioners using Digital Power Control
Japan	Japan Packing Institute (JPI)	Kinoshita Award	Practical Application of Air-Buffering Packaging System
Asia	Asia Packaging Federation (APF)	Asia Star Award	Development of New Packaging Line and Design for Batteries

Note: The most prominent awards out of the 90 we won in 2002 are listed.

■ Awards by Category (FY'02)



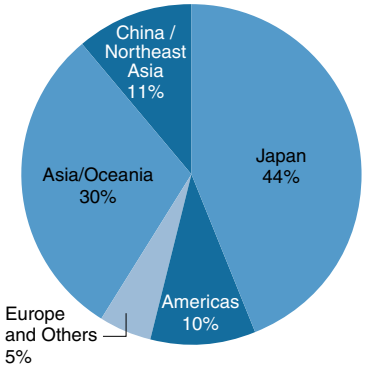
Green Purchasing Award

In November 2002, the Matsushita Electric Group won the Minister of Economy, Trade and Industry Prize at the 5th Green Purchasing Award presented by the Green Purchasing Network, Japan. The Prize was given for our commitment to enhancing various environmental programs, such as the promotion of green purchasing and environmentally conscious products.

President Nakamura receives the prize from Mr. Hideki Nakahara, Chairman of GPN.

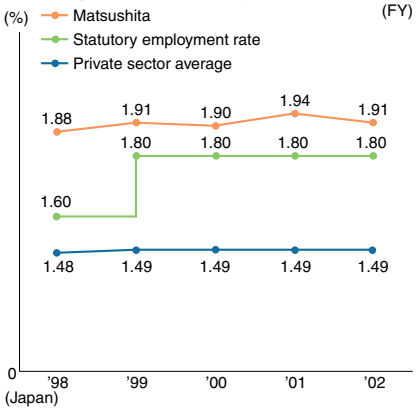
Data Related to Social Issues

■ Number of Employees by Region



Note: Victor Company of Japan Ltd. not included (As of March 2003)

■ Employment Rate for People with Disabilities



■ External Awards (FY'02)

Category / Country	Presenter/Name of Award	Name of Prize	Winning Organization/Product
Equal Employment Opportunity			
Malaysia	Excellent Female Employee and Excellent Employee Welfare Enterprise Award	Award for Excellence	Kyushu Matsushita Electric (Malaysia) Sdn. Bhd.
Health and Safety			
Japan	Hyogo Labour Bureau Director's Award for Excellence in Health		Panasonic AVC Networks Company, IT Products Division, Kobe
Indonesia	Ministry of Manpower and Transmigration	Accident-Free Safe Enterprise Award	P.T. Matsushita Gobel Battery Industry
Healthcare			
Japan	Minister of Health, Labour and Welfare Award (For health promotion)		Matsushita Electric Industrial Co., Ltd., Tokyo Branch
Usability			
Japan	METI, Award for Exemplary Consumer Focus Enterprise Activity Service Award	Minister of Economy, Trade and Industry Prize	Matsushita Electric Industrial Co., Ltd. Masaharu Matsuoka, R&D Planning Office
Design			
Japan	METI, Good Design Award	Good Design Award	72 awards (40: Panasonic products, 32: National products)
		Universal Design Prize	Seated body shower
		Long-selling Good Design Prize	2 awards Turntable (record player), Microwave oven

■ Work and Life Support Programs

(As of March 2003)

Employee Benefits	Child Care Leave	Applicable until the end of March after the child reaches 1 year old
	Child Care Flextime	Applicable until the end of March after the child reaches 3 years old and for the child's first year of elementary school
	Family Care Leave	A total of 1 year during a period of 2 years
	Family Care Flextime	A total of 1 year including family care leave
	Nursing Care Leave	Maximum of 5 days for nursing children
	Work and Life Support Program	• Work at home, 2 or 3 days/week, core-time, half-day work, etc. • Child care: Applicable until the end of March after the child reaches 3 years old and for the child's first year of elementary school • Family care: A total of 1 year including family care leave
Information Disclosure and Communication	Information Disclosure on the Web	Provide governmental and corporate information about work and life support and information designed for managerial staff
	Development of Chat Rooms on the Web	Share and solve work and child-care-related issues
	Communication Tool for Supervisors	Interview before/after taking leave, information exchange report for staff on leave
Child/Family Care Support	Corporate Contract with Nursery Agent	• Use child minding services and temporary child-care centers • Support elementary school children
	Contract with Home Care Coupon Administration	• Dispatch home help or caregiver • Apply to employees and their family

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Environmental Performance Indicators			(57,58)
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Third Party Comments

Sustainability Analysis by The Natural Step

The Swedish Sustainability Organization The Natural Step has provided a sustainability analysis in Matsushita's last two environmental reports. Since then, Matsushita has received comments from many people on this. Among the comments we heard were "Very interesting," "This is rather different from the reality of the situation" and "This is just too difficult to understand." In this section, we would like to explain how we use these comments and the sustainability analysis to try to explain Matsushita's thinking more clearly.

Q What is a sustainability analysis? How is it different from a third party verification?

Whereas the purpose of a third party verification is to assure the reliability of disclosed information, a sustainability analysis is a process of verifying whether the principles of Matsushita's environmental initiatives, its specific measures taken, and the products created as a result are consistent with the goal of creating a sustainable society.

Q Why did Matsushita partner with The Natural Step?

Matsushita chose The Natural Step as its partner because The Natural Step clearly lays out the conditions necessary for achieving a sustainable society and is very positive about creating social change through corporate activity. Additionally, the act of analysis has taught us much about environmental policy in northern Europe, one of the most environmentally progressive parts of the world. Complementing this knowledge with Matsushita's ideas and technology has potentially huge benefits for developing new strategies.

Q Why dose Matsushita disclose the contents of the analysis?

Matsushita feels it is important to share with every member of society the issue of what industry, citizens, and government should be doing to achieve a sustainable society. As a public entity, Matsushita believes in doing business for the benefit of society. This means doing business with society's support and providing products and services in return. It is extremely important, therefore, that we disclose our ideas and actions as well as assessments of our efforts to the broader world. We feel that disclosure is our responsibility. We want our initiatives to be meaningful to our stakeholders.

Q What specific process dose Matsushita use for the analysis?

1. Determining what to verify

- Matsushita has performed analyses for the past two years. The first time, in FY'01, the analysis focused on company environmental initiatives in general, while the analysis for FY'02 examined products representative of Matsushita, namely TVs and refrigerators. In each case, the results were included in our Environmental Sustainability Report.
- Results from the survey included in the Environmental Sustainability Report 2002 indicated that readers have a strong interest in the recycling of home appliances.
- Reflecting this interest, we decided to subject the home appliances recycling plant Matsushita Eco Technology Center (METEC) to analysis.

2. Writing answers (concept sharing)

- Matsushita received a recycling plant questionnaire from The Natural Step.
- At this point, it was important that the officials from units writing our answers really understood The Natural Step's way of thinking. Together they shared 'Backcasting from the Four System Conditions for a Sustainable Society"*1 and applied this way of thinking to Matsushita's efforts when answering.

3. Confirming basis of logic, visiting sites

- Matsushita's response was confirmed through interviews with responsible unit officials, site observations, and monitoring of information released to the outside world.



The Natural Step Japan's Sachiko Takami observes at METEC in February 2003.

4. Analyzing

- At The Natural Step's Sweden headquarters, Dr. Karl-Henrik Robèrt performs the analysis based on Matsushita's response, its communications to the outside world and site observations.
- A "backcasting" analysis technique is used, in which one looks back on present efforts from some point at which a sustainable society has been achieved i.e. when the Four System Conditions are complied with. This technique gives a longer-term, more substantial third party view.

Hidetsugu Otsuru
Managing Director, Member of the Board
Matsushita Electric Industrial Co., Ltd.

April 2, 2003

the NATURAL STEP

Sustainability Analysis Report of Recycling Plant Matsushita Eco Technology Center

[Outline] The Natural Step has analyzed the operations of the recycling plant Matsushita Eco Technology Center (METEC) in terms of sustainability. The analysis consists of three parts, each performed in accordance with The Natural Step framework: analysis of human needs, analysis of major products and processes, and analysis of applications of products and processes in society.

[Analysis]

1. Vision for the Future

METEC has a vision based on the sustainability concept and has set corresponding goals. The fundamental needs for satisfying the Four System Conditions may be defined as follows.

1) Recovery rates of products and substances must be increased and these recovered materials must have the same functionality as new materials in new products when they are used.
2) All waste must be recycled and as little waste as possible must be created, i.e. even recycling itself must be minimized as far as possible.
3) Heavy metals and persistent substances that are foreign to nature posing high risks of pollution must be banned from applications other than circulating technical systems that are limited to the industry.
4) METEC should play the role of educating society in general, which includes ordinary citizens, materials suppliers, and governments.

2. Putting Words into Action

METEC has already made concrete changes putting it on the road to sustainability.

1) Employee health and safety
METEC has policies and specific measures in place concerning employee health and safety and is making sufficient efforts in this area.
2) Banning of hazardous substances
METEC is systematically removing substances that should be removed as far back as the production stage. It also publicly discloses its timeframes for doing so. Substances included in this effort are heavy metals like lead, cadmium and hexavalent chromium as well as CFCs used in refrigerators.
3) Recycling R&D
METEC has a conscientious and systematic approach to designing products so that they are recyclable and certain substances are removed. Specifically, METEC has established an R&D department.
4) Recycling technology and results
Following its "from products to products" concept, METEC develops leading-edge recycling technology and is already producing recycled metal and plastic materials with weight and functionality equivalent to virgin materials.
5) A social basis for recovering products
With the cooperation of retail stores around Japan, METEC is establishing efficient and convenient ways of transferring materials with social systems for recovering products.
6) Other-company products
METEC is recycling not only Matsushita's products but also those from competing companies.
7) Talking to the public
METEC is actively appealing to the public with plant tours and information provision over the Internet and has had excellent results. Plant visitors to date number more than 18,000 people and have included government and industry officials, school groups, and visits from Europe, China and other nations.
8) Relationship with the local community
METEC has established an environmental conservation council with the local community, and this council is actively discussing the surrounding environment (noise, pollution, traffic, etc.).

3. Honesty Regarding Remaining Issues

METEC demonstrates honesty in regard to remaining issues in order to put its sustainability convictions into action. Issues that cannot be resolved with current strategies are listed below.

1) Labor conditions
There is always room for improvement, and continuous efforts are needed. Generally, people tend to work with a positive attitude when they are in a new workplace. It is important to further clarify issues needing improvement.
2) Product recovery rates and costs
METEC does not currently identify its product recovery rate. Probably this is because there are no targets for these under Japan's Law for Recycling of Specified Kinds of Home Appliances, but for society as a whole to be sustainable it is important that a large ratio of end-of-life products be recovered from the market. As a long-term strategy, Matsushita should take steps to increase product recovery rates, such as by including the recycling fee within the product price.
3) Recovering high-purity resources
There is room for further improvement in the technology for recovering high-purity materials from products. If the ultimate goal is to recover 100% of materials, then there must still be a 10% improvement in iron, 30% in mixed metal fractions like copper and aluminum, and 50% in plastic.
4) Communicating with suppliers
Matsushita should better clarify its policies on working with material suppliers in relation to its mid- and long-term targets. Each firm has responsibility for its business activities of the entire supply chain. Suppliers work in the upstream portion of the supply chain, including their extraction of virgin materials, transportation, design, which has an impact on sustainability. If one can affect this portion of the chain, it can greatly contribute to the sustainable development of society in general. For example:
- The environmental and social burden from mining ore is a serious problem. This is a problem that the wealthy developed countries force onto developing countries by the act of importing ores. Matsushita should promote dialogue to solve this problem and take action against the social cost.
- As energy sources used in factories and for transportation, oil and nuclear power are contrary to "the system conditions"*1.
- Matsushita needs to make strenuous efforts to eliminate the use of certain scarce substances and persistent chemicals that are foreign to nature.

5) Communicating with customers
Communicating with customers on the subject of Matsushita's mid- and long-term targets is critical to appealing to the public and achieving long-term economic change.
6) Communicating with government agencies
Japan's Law for Recycling of Specified Kinds of Home Appliances sets product recycling rates, but it does not establish standards for the purity of resources recovered. Would it be to METEC's disadvantage in terms of competitiveness if it were able to recover highly pure resources? This point should be clarified.

Karl-Henrik Robèrt

*1 The Natural Step Framework
The Four System Conditions

In a sustainable society, nature is not subject to systematically increasing:
1) concentrations of substances extracted from the earth's crust;
2) concentrations of substances produced by society;
3) degradation by physical means through overharvesting, introductions and other forms of modification;
and, in that society
4) human needs are met in our society and worldwide.

URL The Natural Step
www.naturalstep.org/

Q How is Matsushita addressing The Natural Step's concerns?

- Matsushita takes The Natural Step's concerns very sincerely. We wish to address these concerns one-step at a time.
- Regarding the improvement of the work environment, we will continue our efforts following the slogan "Build factories where we show all and all can be seen."
- Matsushita is striving to increase the purity of resources recovered. We are, for example, developing washing technology that will allow us to recover plastic in a purer state. Also, we are developing technology that detects and separates materials by color. Our ultimate goal is to achieve superior recycling that completes the "from products to products" loop.
- Matsushita's policy on materials suppliers is to get them to eliminate hazardous substances from their products (p. 62). Matsushita will work globally to remove substances targeted by the European Union's RoHS Directive (p. 49) and strive for supplier understanding of this policy.
- To increase product recovery rates, Matsushita is working to educate users to dispose of products properly and is discouraging illegal dumping.

Q Have Matsushita made use of the results of the previous analysis? What efforts is Matsushita making with these?

In FY'02, The Natural Step performed a product sustainability analysis on refrigerators and TVs. The results were presented to our Environmental Officers as feedback and included in our Environmental Sustainability Report. Subsequently Matsushita held an in-house seminar on the analysis to share the content with many of our engineering staff. Matsushita is actively using advertising and environmental labels (pp. 70-71) to promote eco-friendly products to consumers.

About 120 engineers take part in an "eco-design seminar" in July 2002. They listen to a detailed sustainability analysis report, offer ideas, and ask questions.

A display booth at an in-house forum in October 2002 explains the sustainability analysis.

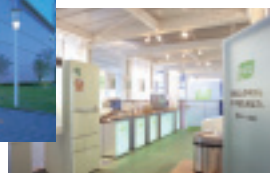
Highlights 2002 **The Third Environmental Stakeholders Meeting p. 23**

URL **N's Eco Project national.jp/eco/ (Japanese only)**

Panasonic Center

An integrated information hub of the Matsushita Electric Group, the Panasonic Center has two core missions: "Realizing a Ubiquitous Network Society" and "Coexistence with the Global Environment." The center includes displays on Matsushita's environmental initiatives and hosts "eco tours" (by reservation) at working environmental facilities.

"Kazekamome" lighting system powered by wind and sun



The Green Products Corner introduces the latest eco-friendly products.

■ Information

Hours: 10:00 AM – 6:00 PM
(closed Mondays but open on Mondays that are national holidays or make-up holidays)

More information:
Panasonic Center
2-5-18 Ariake, Koto-ku, Tokyo
TEL: +81-3-3599-2500

URL **www.panasonic-center.com/en/main.html**

Hall of Science and Technology

This center contains 300 examples of leading-edge products and technologies, including environmental initiatives and digital networks.

URL **matsushita.co.jp/exhib/eng/index2.html**

Matsushita Electric House of History

This facility presents the life, ideas, and personality of the founder Konosuke Matsushita.

URL **matsushita.co.jp/rekishikan/en/**

Publication Notes

Hidetsugu Otsuru
Managing Director,
Member of the Board
Matsushita Electric Industrial Co., Ltd.

Matsushita's vision for the start of the 21st century can best be summed up as "Realizing a Ubiquitous Network Society" and "Coexistence with the Global Environment." This century, we understand that a corporation cannot exist unless it coexists with the environment. Contributing to this coexistence through our business activities and achieving this sustainable society are among a company's most critical missions.

In October 2002, I had the fortune to talk with Dr. Norman Myers at our Environmental Forum. Dr. Myers' guiding principle is that companies have to work harder on behalf of a three-part bottom line: the financial bottom line of course, and also the environmental and social bottom lines, aiming to develop into Gaia companies that can learn a lot from Earth working as a living super organism. Moreover, he mentioned that Matsushita is already headed in this direction; it just needs to pick up the pace.

The guiding policy of Matsushita's FY'03 environmental initiatives is to make "Each of Us Acting with the Spirit of a Founder — practice environmental sustainablility management at the global level to establish an 'environment-based enterprise.'" Matsushita believes in further strengthening its efforts for its three-part bottom line around the globe. This idea is the basis for our decision to include more economical and social information in the old Environmental Sustainability Report and change its name to the more encompassing expression "Sustainability Report," beginning this year. We hope this report will inspire our stakeholders to share their comments with us. Matsushita accepts the challenge of transforming itself and achieving a sustainable society.

Dr. Norman Myers of England converses with Hidetsugu Otsuru, Managing Director (center) and Sukeichi Miki, Special Technology Advisor.

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Afterword

Matsushita believes that for a corporate report to be credible to its readers, the report must clear certain hurdles in order to offer definite values to society. This year's Sustainability Report includes the new Highlights 2002 section as a means of providing these values. This section was designed to make Matsushita's corporate vision more realistic and put the spotlight on the ideas and actions of its employees. Every theme it addresses presents the story of another struggle, another sign of the transformation we are undergoing to achieve sustainability. Matsushita hopes to receive your comments and constructive criticisms in order to help us create reports that will adequately convey the social vision Matsushita seeks to achieve.

Published by Nobuo Sonoda, Director, Corporate Environmental Affairs Division
Published August 2003
(Next publication August 2004)

Produced with the cooperation of Cre-en Co., Ltd. ○

Satsuma Kiriko, a cut crystal from Kagoshima on the main southern island of Kyushu, Japan, is renowned for its unsurpassed transparency. Clear glass is covered with colored glass and cut at a slight angle that brings out unusual gradations of color. The *bokashi* color gradation technique is unique to Satsuma Kiriko and imparts a soft, warm feeling that is unusual for glass.

Behind this gemlike art form lie the tenacious efforts of skilled craftsmen. Created and developed by Nariakira Shimadzu, the 28th lord of the Satsuma domain in the last days of the Edo Period, Satsuma Kiriko's reputation as an example of a fine cutting technique became established far and wide. The factory producing it was destroyed after only a few years, however, during an armed conflict with the British in 1863.

Over a century later in 1985, the time was ripe to restore the craft based on the few remaining pieces and references in documents. A process of trial and error by craftsmen led to the "restored Satsuma Kiriko" with all the once-lost skill now recovered. In 2001, an even more advanced form emerged using two different colors of glass.

The craftsmen's spirit has always been in demand and always will be.

ECO

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Thank you for reading the Sustainability Report. We look forward to receiving your opinions.

We have tried to inform you about our environmental philosophy and activities in the Sustainability Report 2003 in an easy-to-understand format, but we know that there is always room for improvement. Your kind advice is an important asset for us to review our environmental activities and reporting. Please take the time to write down your opinions, impressions, or comments on the back of this form and send it to the address below.

August 2003

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http://matsushita.co.jp/environment/2003e/

Communication Sheet To: Corporate Environmental Affairs Division (FAX: +81-6-6909-1163)

●What do you think about this Report?

Understandability

Excellent ☐ ☐ ☐ ☐ ☐ Poor

Number of pages you looked at

Ten or fewer ☐ ☐ ☐ ☐ ☐ About all

●Which article(s) interested or impressed you?

☐Corporate Profile, Editorial Policy
☐Aiming for Coexistence with the Global Environment
☐Achieving a "New Prosperity"

Highlights 2002

☐Accomplish the Lead-Free Soldering Project
☐Matsushita Eco Technology Center
☐Fuel Cell Cogeneration Systems
☐Light and Trust Service
☐Achieve Zero Waste Emissions
☐Improve Management Quality
☐The Second Environmental Stakeholders Meeting
☐The Third Environmental Stakeholders Meeting
☐Love the Earth Citizens' Campaign

Global highlights

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☐Europe
☐Asia and Oceania
☐China and Northeast Asia

Economic Performance

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☐Corporate Governance and Finance
☐Research and Development
☐Environment Solution Business

Environmental Sustainability

☐Basic Policy for the Environment
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☐Environmental Education and Awareness-raising
☐Environmental Accounting
☐Product Life Cycle and Environmental Impact
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Social Responsibility

☐Relationship with Employees
☐Relationship with Customers
☐Relationship with Society and Communities

Third Party Comments

☐Sustainability Analysis by The Natural Step

☐Facts & Figures
☐Publication Notes
☐Front cover / Back cover

●Please feel free to comment or make suggestions on this report.

About contents on which you need more information.

About the best way to express carbon dioxide emissions (used as an indicator of global warming)? (See p.24)

About specific issues to be covered besides the environment you think should be covered.

●Which of the following best describes you?

☐Consumer ☐Business partner ☐Shareholder/Investor ☐Environmental officer of a company/organization
☐Environmental NPO ☐Research/Education organization ☐Student ☐Mass media ☐Government agency
☐Resident near a Matsushita facility ☐Matsushita Electric Group employee or family member

●The following information is optional.

Name	Sex ☐Female ☐Male	Age
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Occupation (Company or School Name)	e-mail address @	
How often have you read the Matsushita Electric Group's Sustainability Report? ☐First time	☐At least once before	☐Every year
Would you like to receive next year's report? ☐Yes	☐No	

Thank you for your cooperation.