

SONY

Social & Environmental Report **2002**



Fiscal 2001 (Year Ended March 31, 2002) Highlights of Sony's Social and Environmental Activities

▶ **Eco-Efficiency**

The fiscal 2001 greenhouse gas index was 1.08. The resources input and output indices were both 1.13.

 (page 12)

▶ **Introduction of Environmentally Conscious Products**

Many new products featuring environmentally conscious design debuted during the year. The very compact MD Walkman, with the lightest weight on record, conserves resources, while continuous playback time of up to 145 hours conserves energy. A new large-screen television features conserving packaging and low power consumption. You will find environmental information about products displayed beside the "eco info" mark.

 (page 25)

▶ **Promotion of Home Appliance Recycling**

Sony recycled about 13,000 tons of products worldwide during the year ended March 31, 2002. In Japan, the full-scale recycling of televisions began following the enactment of the Home Appliance Recycling Law.

 (page 34)

▶ **Establishment of Environmental Management Systems**

During the year ended March 31, 2002, 84 Sony business sites acquired ISO 14001 certification. This included Sony Music Group (Japan) and group certification of 73 sites in North America. Certification for occupational health and safety management systems was obtained at 14 sites, including Sony Electronics (M) Sdn. Bhd.

 (pages 17 and 55)


▶ **Zero Landfill Waste Initiative**

A total of 35 manufacturing sites achieved zero landfill waste, including Sony Semiconductor Kyusyu Co.

 (page 33)

▶ **Use of Energy from Renewable Sources**

As of March 2002, Sony had used the Green Power Certification System to purchase a total of 2 million kWh of electricity generated by wind turbines for use at the Sony Tower and other locations in Japan.

 (page 30)

▶ **Expanded Scope of Environmental Performance Evaluations**

Sony's environmental performance evaluation system determines the actual declines in the environmental impact of each business unit. In the year ended March 31, 2002, this program, which had covered only electronics, was expanded to include games, music and pictures business units.

 (page 19)

▶ **Introduction of Green Partner System**

Under this system, Sony requires suppliers to conduct environmental management programs on their own and extends cooperation to help suppliers reduce the impact of their activities on the environment.

 (page 23)


▶ **Environmental Incidents**


There were five major environmental incidents at business sites during the year ended March 31, 2002. They included the contamination of groundwater at Sony EMCS Corporation, Inazawa TEC. In the Netherlands, shipments of PS one peripherals, containing chemical substances above the limit allowed by Dutch regulations, were temporarily halted.


 (pages 18)

▶ **Corporate Citizenship**

As part of the Sony Group's SOMEONE NEEDS YOU (SONY) program, more than 14,500 employees in 20 countries voluntarily participated in a variety of community programs.

 (page 46)

 Please refer to Sony's website

 Please refer to the page indicated in this report

Sony Social & Environmental Report 2002—Contents

| | |
|--|----|
| Messages from Management | 2 |
| Editing Policy, The Sony Group | 4 |
| Corporate Data | 5 |
| Compliance | 6 |
| Sony and the Global Environment | |
| Overview of Sony's Environmental Impact | 8 |
| Environmental Vision | 10 |
| Eco-Efficiency and Environmental Accounting | 12 |
| Green Management 2005: A Progress Report | 14 |
| Environmentally Responsible Management and Organizations | 16 |
| Environmental Management Systems | 17 |
| Environmental, Health and Safety Auditing and Environmental Incidents | 18 |
| Environmental Evaluation and Award Programs for Environmental Performance | 19 |
| Environmental Education | 20 |
| Disclosing Environmental Information and Communication | 21 |
| Green Procurement and Purchasing | 22 |
| Environmentally Conscious Products and Services | 24 |
| Global Environment and Facilities | 28 |
| Global Warming | 29 |
| Resource Conservation and Recycling | 32 |
| Chemical Substances and Environmental Risk | 37 |
| Sony and the People | |
| Customers | 41 |
| Shareholders | 42 |
| Employees | 43 |
| Communities | 46 |
| Children | 47 |
| Data | |
| About Data Collection | 49 |
| Environmental Accounting | 50 |
| Environmental Performance Data | 52 |
| Status of Hazardous Materials in Use | 53 |
| Summary of Products with High Environmental Performance | 54 |
| Newly Certified Sites: ISO 14001 and Occupational Health and Safety Management System Certification | 55 |
| Glossary | 56 |
| Independent Verification Report | 57 |

Messages from Management



The September 11, 2001 terrorist attacks on the U.S. renewed focus on unresolved issues such as the wealth disparity created by global capitalism, environmental problems and ethnic disputes. As a global corporation, Sony has developed various businesses in many countries. Creating successful businesses in the short term is a goal of management. But I also feel that management must look beyond this to conduct corporate activities in a way that strikes a harmonious balance with diverse communities over the long term.

Economic activity accompanying the evolution of human society independent from the Earth's ecosystem has inevitably placed a burden on the environment, creating problems to which there are no easy solutions. I believe that it is important for Sony to respond to issues such as increasing electricity consumption accompanying the advent of the full-fledged network society, and recycling of end-of-life products that began last year in Japan. This demands more than stopgap measures. The environmental impact must be factored in from the earliest stages in product design, manufacturing and business models. I want Sony to take the initiative and conduct Sony-like environmental management that preempts laws.

Just as yellow sands from China blow across to Japan, environmental issues have no borders. The world, however, has many different cultures, civilizations and industries. The pressing environmental issues and approaches required to address them differ depending on the region and culture. Sony must gain a thorough understanding of different regions and cultures that will serve as the basis for conducting its operations and taking a leadership role in actively addressing environmental issues. I hope that this Social & Environmental Report stimulates further debate on how environmental and social issues should be tackled.

A handwritten signature in black ink, consisting of a large, stylized loop at the top and several smaller, connected loops below it, all resting on a horizontal baseline.

Nobuyuki Idei
Chairman and Chief Executive Officer



I long sometimes to return to my childhood, which was spent surrounded by nature, when I sing a nursery rhyme about animals or nature.

The current generation has a responsibility to preserve the environment so that children in the future can also experience the joys of nature. Mass production, mass consumption and mass waste define the industrialized societies of today. There was a time when quality of life was not measured in terms of how much one consumed. But it is quite apparent that if everybody living on this planet were to follow in the footsteps of industrialized nations, the Earth's resources would be quickly used up. The challenge we face in the 21st century is to equitably and efficiently use these limited resources.

Sony has played an instrumental role in bringing societies linked by ubiquitous information networks closer to reality. In this capacity, we have a responsibility to provide goods and services that conserve energy and use environmentally sound materials. The challenge that lies ahead is to find ways to recycle end-of-life products. Computers are a case in point. Breathtaking advances in hardware and the development of new operating systems and software mean that computers become outdated and are often replaced about every three years. We must think deeply about how to turn this waste, created when they are eventually disposed, into resources.

Countries around the world are grappling not only with environmental issues but with discrimination based on race, gender and physical ability. I want Sony to uphold the highest standards of conduct in every country and to be a company that employees are proud to work for. And as a responsible corporate citizen, we want to contribute to communities through the provision of products and services and by returning profits to society.

The Earth belongs to everybody. Sony wishes to maintain open and constructive dialogue with stakeholders who share our interest in the environment. I hope that this report deepens your understanding of Sony's efforts to preserve the environment.

Kunitake Ando
President and Chief Operating Officer

Editing Policy

This report covers the global activities of both Sony Corporation and Sony Group companies (on a consolidated basis)^{*1}. It examines Sony's world-wide performance in environmental and social activities for fiscal 2001 (April 1, 2001 to March 31, 2002)^{*2}, and takes a look at the future direction of these activities, with a particular focus on Green Management 2005 (GM2005), Sony's Mid-Term Environmental Action Program. Sony issued its first Environmental Report—in both Japanese and English—in 1994, with subsequent reports in 1997 and 1999, and began the publishing of annual Environmental Reports from 2001.

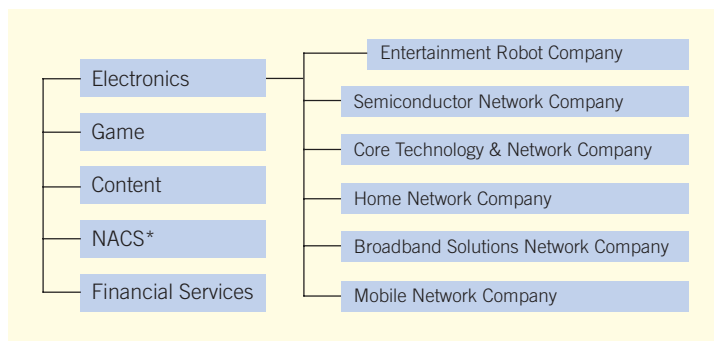
Sony's basic policy on environmental disclosure is to provide stakeholders with environment-related information quickly, continuously and in a fair and honest manner. Based on this policy, design and editing enhancements have been made to this year's report to make it easier to read and understand. Changing expectations with regard to corporate accountability have also led Sony to expand the scope of its environmental reporting: starting this year, environmental reports will include features on the activities regarding our stakeholders. Please visit our website for more information on this. [URL: http://www.sony.net/eco/](http://www.sony.net/eco/)

At Sony, we regard the Social & Environmental Report as an important window of communication. We therefore welcome any useful comments and suggestions that we can incorporate into our future activities. (☰ page 59 for inquiries)

*1 The term "Sony Group companies" refers to consolidated subsidiaries and joint ventures in which Sony Corporation holds a capital stake of 50% or more. In this report, the term "Sony" refers to the Sony Group, while "Sony Corporation" refers to the parent company Sony Corporation. Also, the term "Asia" is defined as the Asian region, excluding Japan and China.

*2 Company names are current as of April 1, 2002.

The Sony Group



Sony is active in five main business sectors: electronics, content, game, financial services, and NACS (Network Application & Content Services)*.

* NACS ensures that our sectors are linked effectively through network services which will create synergies and new horizontal business models.

▶ Major Organizational Changes During Fiscal 2001

▶ Sony EMCS Corporation Established

Set up in April 2001, Sony EMCS was created through the integration of Sony's 12 domestic manufacturing subsidiaries in Japan specializing in assembly of electronics equipment.

▶ Sony Semiconductor Kyusyu Corporation Established

Also in April 2001, Sony Semiconductor Kyusyu was formed through the merger of Sony's three main semiconductor manufacturing subsidiaries in Kyusyu—Kokubu, Oita and Nagasaki—and the Kumamoto Technology Center, under construction at the time of the integration.

▶ Sony Ericsson Mobile Communications AB Established

Established by Sony Corporation and Ericsson of Sweden (Telefonaktiebolaget LM Ericsson), this joint venture was created in the field of mobile multi-media communications.

Corporate Data

Corporate Data

Headquarters: 6-7-35 Kita-Shinagawa, Shinagawa-ku, Tokyo, Japan
 Established: May 7, 1946
 Employees: 168,000 (as of March 31, 2002)
 Sales and operating revenue: ¥7,578,258 million

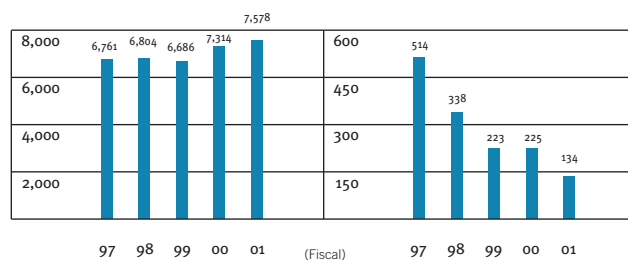
Main Business Areas

- Electronics**
 Audio, video, televisions, information and communications, semiconductors, electronic components and others
- Game**
 Game console and software business
- Music**
 Music software business
- Pictures**
 Movie/TV programming and digital entertainment businesses
- Financial Services**
 Life insurance/non-life insurance, leasing and credit card business, banking
- Other**
 Development and operation of location-based entertainment complexes, Internet business, advertising agency business and other businesses

Financial Highlights (Unit: ¥ billion)

Sales and Operating Revenue

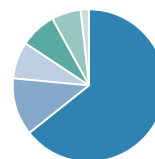
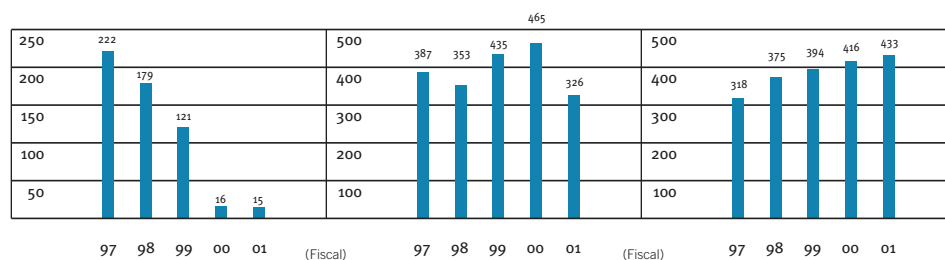
Operating Income



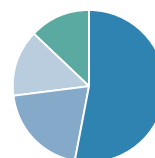
Net Income

Capital Expenditure

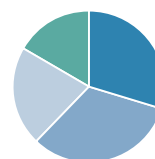
R&D Expenses



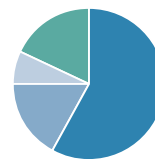
Sales and Operating Revenue by Business Segment



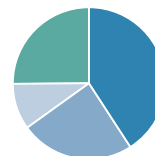
Operating Income by Business Segment



Sales and Operating Revenue by Geographic Segment



Share of Production by Geographic Region



Employees by Geographic Segment

Notes:
 * For the year ended March 31, 2002
 * Losses suffered by Electronics and Other have been treated as zero in the operating income ratios for convenience sake.
 * Includes inter-segment transactions
 * As of March 31, 2002 for employees data

Compliance

Sony approaches its corporate responsibility in the areas of the environment, human rights and labor issues with the same integrity and zeal with which it has traditionally conducted its business activities. As such, Sony approaches the issue of compliance in the broadest sense by conducting its activities in conformance with global standards and basic Sony policies as well as complying with the laws and regulations of the countries in which Sony conducts its business activities. Efforts are underway to develop compliance systems that can be quickly adapted to new business areas, while steps are being taken to create a comprehensive compliance structure for the whole Sony Group.

▶ **Personal Information Management**

Society is being increasingly connected to information networks such as the internet. These networks have not only made it easier to gather, use and manage vast amounts of digitized personal information, but have also increased the risk of mishandling such information, including unintended use or disclosure. More attention is now focused on proper information management. With more countries in the world enacting laws for protecting personal information, Sony established “Sony’s Global Basic Principles on Personal Information” in July 2000. These basic principles, which set out policies and rules for personal information management within Sony, are being implemented throughout the Sony Group (see note). In Sony Corporation, the Personal Information Management Office, part of the Compliance Center, carry out regular training for all employees in the company in this area. The training enhances employees’ understanding of the importance of this issue and of Sony’s rules. For example, employees learn what to inform customers of when collecting personal information. The purpose of our activities is to provide a trustworthy environment to all customers when they entrust any personal information to Sony.

Note: Sony Corporation, any affiliated company of Sony Corporation, more than 50% of whose outstanding shares are owned by Sony Corporation directly or indirectly, and any company with the name “SONY” as a part of its trade name.

▶ **Global Insider Trading Prevention**

In April 2002, Sony introduced a Global Policy on Insider Trading Prevention to effectively manage internal information and prevent insider trading by Sony Group (see note) management and staff. The policy augments existing regulations to prevent insider trading. This policy lays down clear guidelines for Sony employees regarding the trading of Sony stock, including the prohibition of frequent short-term trades and the establishment of trading windows for senior management. These steps, designed to prevent illegal market operations, contribute to fairness and transparency in markets where Sony stock is traded and help to maintain investor confidence in the company’s stock. Sony is fully aware that these steps are crucial to both the integrity of the company and markets and is therefore taking every necessary action on a Group-wide level to prevent insider trading.

Note: Refers to Sony Corporation, consolidated subsidiaries and affiliates.

Sony and the Global Environment

Since its inception, Sony has pioneered innovative products that have created new markets and offered consumers unprecedented lifestyle choices.

This ability to consistently develop groundbreaking technologies is at the core of Sony's approach to conservation of the environment—one of the greatest challenges facing the global community in the 21st century. Using creative business development capabilities unique to Sony, the Sony Group will take an active part in environmental conservation to realize a sustainable society that ensures a promising future for coming generations.



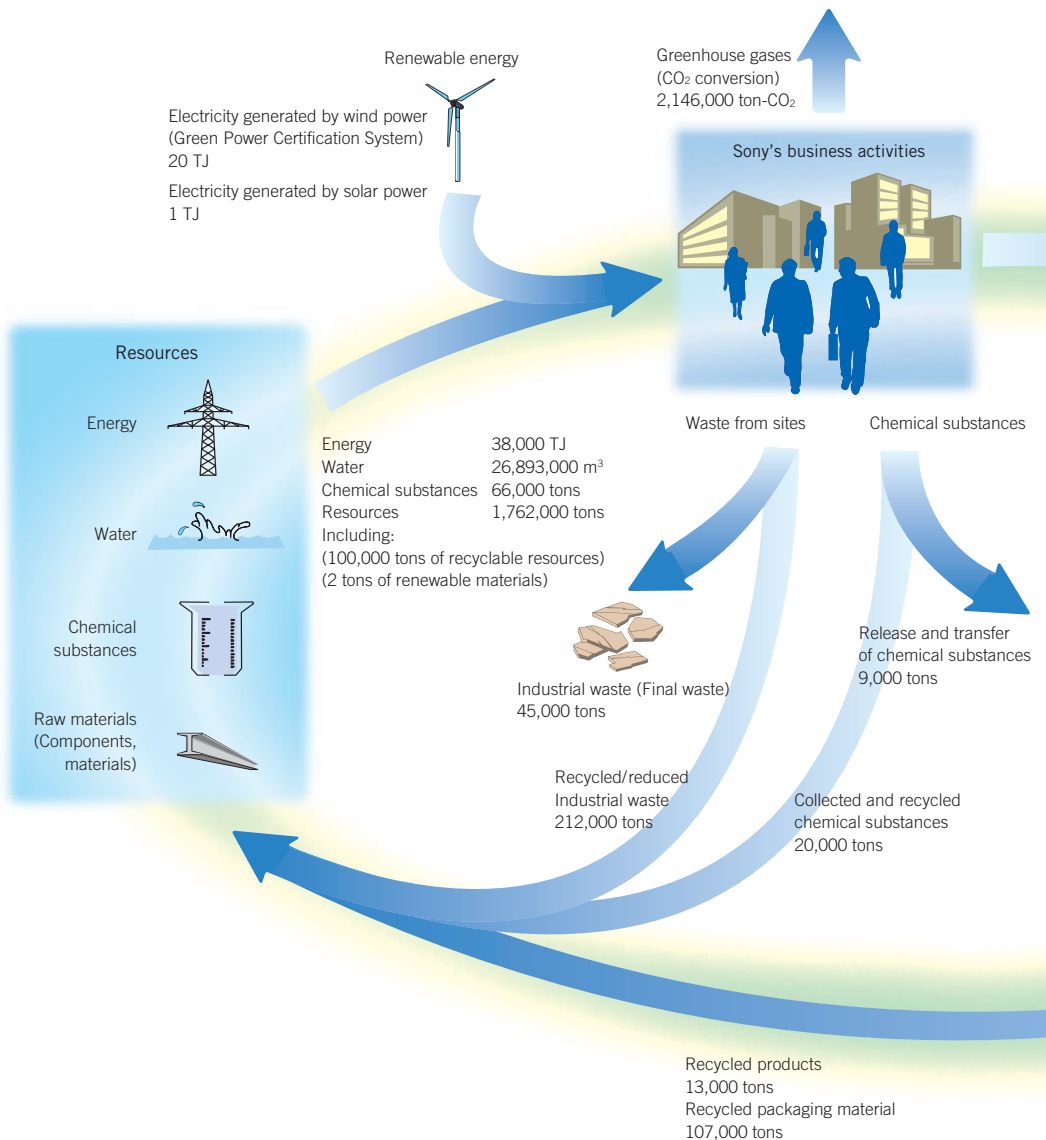
Overview of Sony's Environmental Impact

Sony purchases materials and components and converts them into products at Sony sites through manufacturing processes using energy, water and chemical substances. A certain volume of waste is generated in the course of this process. The use of Sony products and services also consumes energy. By consuming energy and resources, Sony's business activities have an impact on the natural environment.

The aim of the overview is to look at the overall environmental impact of Sony's operations around the world. The focus has expanded to include the entire life cycle of products, encompassing the energy Sony products consume once they are in the hands of customers and the extent of recycling and waste disposal and energy and resources consumed through such business activities.

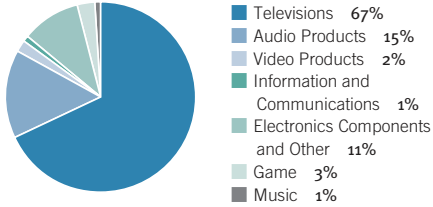
This overview looks at forms of environmental impact that Sony can manage directly. It is important to remember that Sony's business activities impact the environment in ways not covered in this report. For example, the manufacture of components and materials, recycling of end-of-use products and distribution processes place an additional burden on the environment.

The approaches that Sony is taking to lessen the environmental impact of its various activities are set forth in the Sony Environmental Vision.

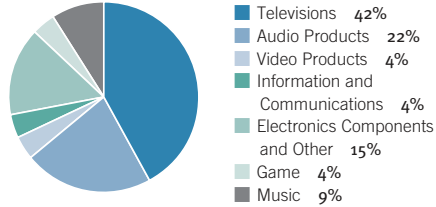


Environmental Impact By Product Group

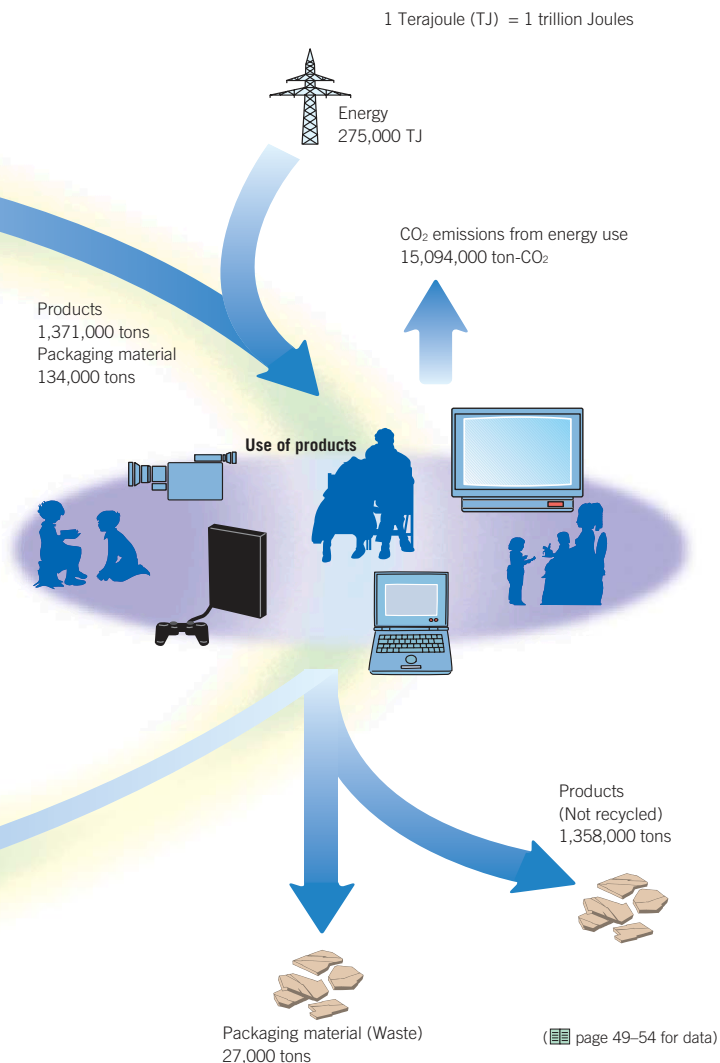
Greenhouse gas emissions
(17,240,000 ton-CO₂)



Resources consumed
(1,762,000 tons)



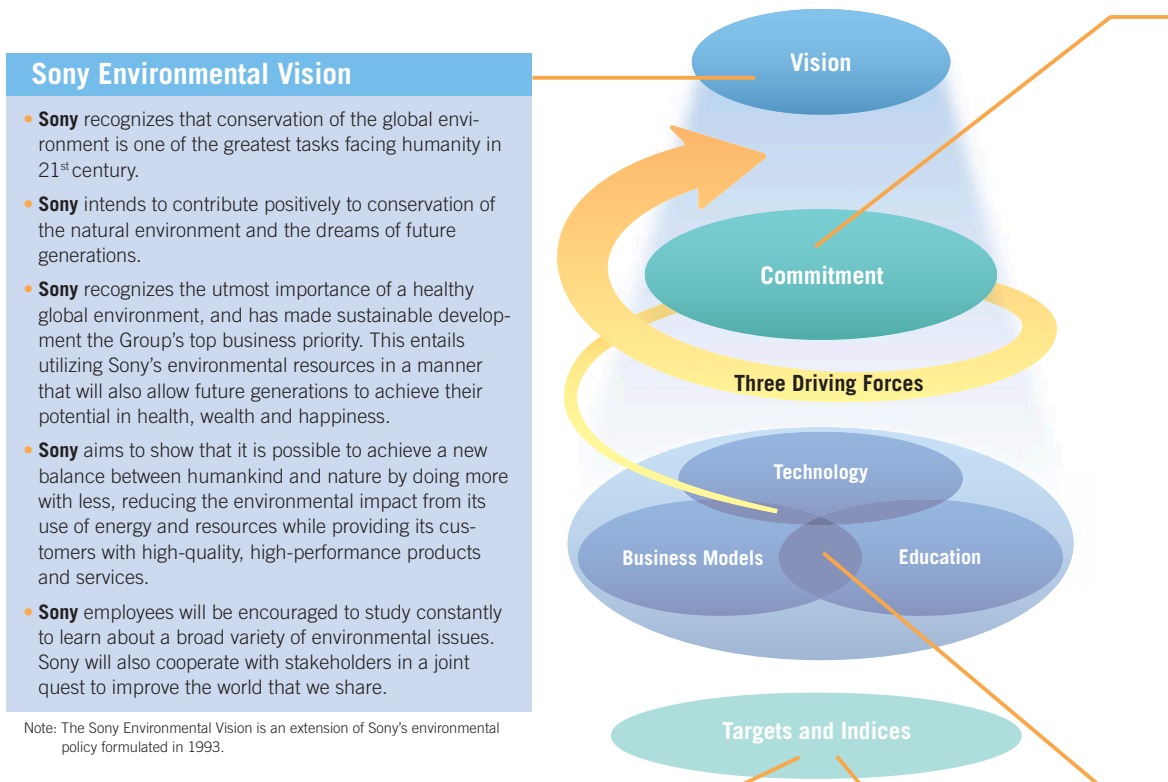
The figures for greenhouse gas emissions generated through energy consumption refer to the sum of the energy consumed in manufacturing, the energy consumed during a product's use, and emissions accompanying product use. The reasons for the very high percentage of greenhouse gas emissions attributed to televisions are that they consume far more power than other products and are used for far longer periods (calculated as 4.5 hours per day for 10 years). Another contributing factor is that the majority of televisions that Sony produces are larger models.



Environmental Vision

▶ Sony Environmental Vision

The Sony Environmental Vision was introduced in October 2000 to serve as a basic guideline for environmental management activities throughout the Sony Group worldwide. The vision positions environmental conservation as one of Sony's most pressing issues today. It sets forth a vigorous program for contributing to the dual goals of environmental conservation and the creation of sustainable societies. The Sony Environmental Vision consists of a statement of vision, commitment, three driving forces, and goals and indices. Sony is working to incorporate the concept of sustainability into all aspects of its business strategies. It will achieve this by complying with all relevant laws and regulations, in addition to setting demanding targets on its own.



Sony Environmental Vision

- **Sony** recognizes that conservation of the global environment is one of the greatest tasks facing humanity in 21st century.
- **Sony** intends to contribute positively to conservation of the natural environment and the dreams of future generations.
- **Sony** recognizes the utmost importance of a healthy global environment, and has made sustainable development the Group's top business priority. This entails utilizing Sony's environmental resources in a manner that will also allow future generations to achieve their potential in health, wealth and happiness.
- **Sony** aims to show that it is possible to achieve a new balance between humankind and nature by doing more with less, reducing the environmental impact from its use of energy and resources while providing its customers with high-quality, high-performance products and services.
- **Sony** employees will be encouraged to study constantly to learn about a broad variety of environmental issues. Sony will also cooperate with stakeholders in a joint quest to improve the world that we share.

Note: The Sony Environmental Vision is an extension of Sony's environmental policy formulated in 1993.

Goals and Indices for Realizing a Sustainable Society

Sony has adopted eco-efficiency as its key index for measuring the environmental impact of its activities. This index is being used in a continual drive to improve eco-efficiency. (📄 page 12 for more on eco-efficiency)

$$\text{Eco-efficiency} = \text{Sales/Environmental impact}$$

Sony aims to raise eco-efficiency with respect to greenhouse gases and resource consumption by 1.5 times by fiscal 2005 and by double that by fiscal 2010, compared with fiscal 2000.

Commitment to Creating a Sustainable Society

Sony is tackling the challenge of reducing its environmental impact from two angles. One is to define the scope of action that can be taken to protect the environment and the other is to identify measures that can be incorporated into company activities.

Basic Stance on Environmental Problems

- ▶ **Climate Change** (☰ page 29)
Sony is working to help prevent global warming and other aspects of climate change that could possibly result from its business activities.
- ▶ **Natural Resources** (☰ page 32)
Sony is promoting a continuous increase of resource productivity in its business process and the reduced use of virgin materials, energy and water whenever possible. Sony will thus promote the reuse and recycling of resources.
- ▶ **Chemical Substances** (☰ page 37)
Sony is committed to the progressive and continuous reduction and, whenever possible, the phasing out of hazardous materials and chemicals in its business process.
- ▶ **Natural Environment** (☰ page 28)
The biodiversity of the Earth must be maintained, and Sony actively supports protecting the biodiversity of the world's forests and oceans.

Commitment in Business Activities

- 1. Corporate Citizenship**
Individual Sony employees will enhance their knowledge of environment issues and act responsibly with respect to stakeholders and society.
- 2. Business Planning**
Sony will continually encourage the development of innovative business models to reduce environmental impact and move toward environmentally sustainable growth.
- 3. Research and Development**
Sony will make ongoing efforts to develop new and original technologies that contribute to conservation of the environment.
- 4. Product Design**
Sony will aim to apply "cradle-to-cradle" design principles in all its products and services in order to minimize impact on the environment.
- 5. Manufacturing Processes and Site Management**
Sony will continuously improve environmental management systems at both manufacturing and non-manufacturing sites.
- 6. Distribution, Sales, Marketing and After-sales Service.**
Sony will take the initiatives to minimize environmental impact from the packaging, distribution, sales and after-sales service of Sony's products and services. Whenever possible, Sony includes environmental information in the product information it provides to its customers.
- 7. Post-use Resource Management**
Sony will vigorously promote product take-back, reuse and recycling and make efforts toward the reuse of the post-use resources within the Sony Group and in cooperation with Sony's business partners.
- 8. Information Disclosure and Stakeholder Communication**
Sony will strive to disclose information to stakeholders honestly, fairly, rapidly and continuously and to draw on opinions and suggestions from employees and other stakeholders for the continuous improvement of its environmental activities.
- 9. Risk Management System and Occupational Health and Safety Management**
Sony will apply rigorous risk management systems worldwide and maintain communication concerning risks with its stakeholders. Sony will also work to ensure safe and healthy working environments for all employees.

* The foregoing statements summarize the main commitments contained in the Sony Environmental Vision.

Three Driving Forces

Sony has designated three driving forces to promote its Vision and follow through on its Commitment. Rather than being mutually opposed, these forces operate in concert over the course of various activities.

| Technology | Education | Business Models |
|--|---|--|
| Sony aims to help create a world in which Sony technology and products contribute positively to reducing our environmental impact on the global environment. | Sony is committed to fostering employees who are conscious of the impact Sony business activities have on the environment and can translate that awareness into action and results. | Sony will pursue development of business models that help us reduce our impact on the Earth's environment. |

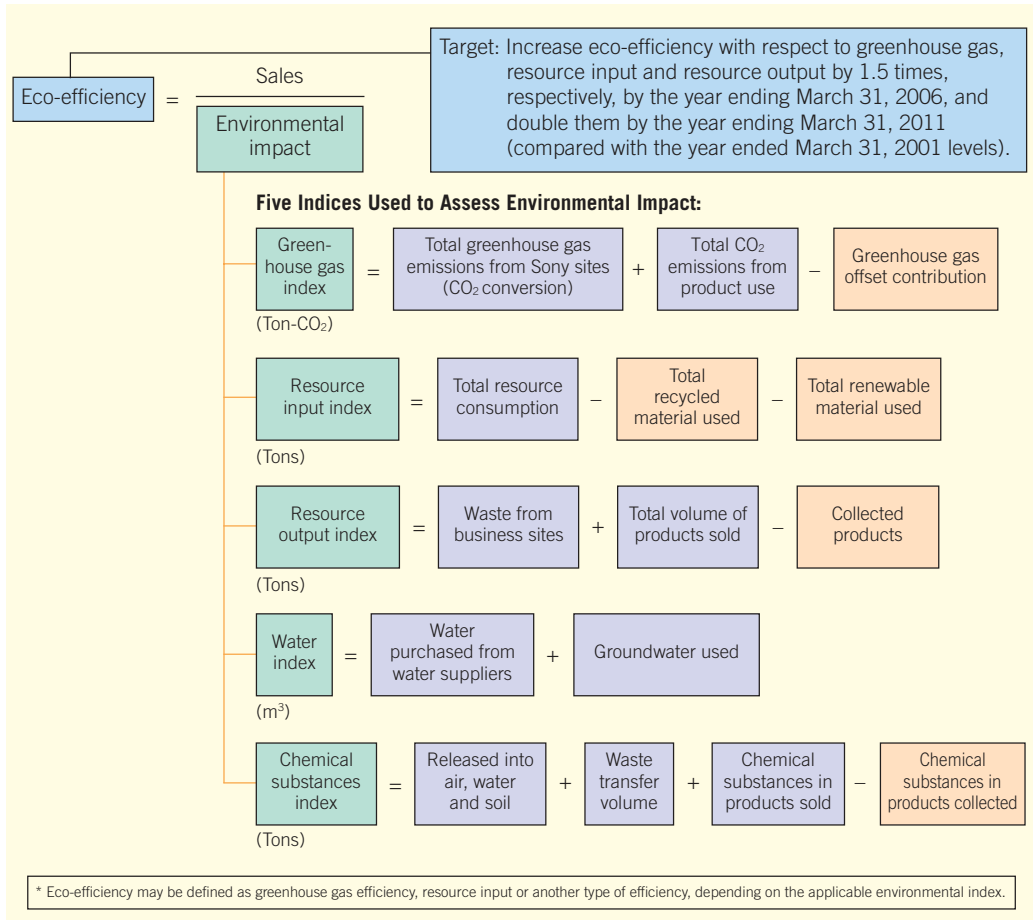
Sony Mid-Term Environmental Action Program (Green Management 2005)

Green Management 2005, Sony's mid-term environmental action program formulated in March 2001, sets specific quantitative targets for 2005 to achieve the Sony Environmental Vision. This action program will be updated regularly to reflect any new laws or regulations and social trends. (☰ page 14 for a progress report of Green Management 2005)

Eco-Efficiency and Environmental Accounting

▶ Eco-Efficiency

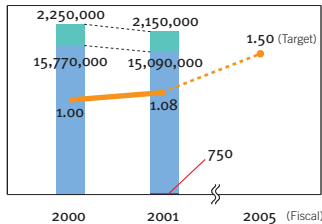
Sony has formulated its own set of environmental indices for use in measuring the environmental impact of its business activities. Five indices are used as a benchmark for measuring the environmental activities within the Sony Group: the greenhouse gas index, resource input index, resource output index, water index and chemical substances index. This set of five indices was selected after carefully considering the life cycle of Sony's global business activities, and those factors that Sony is able to directly identify and control. Each index is designed to quantitatively measure environmental impact, with lower numerical values indicating a lower level of impact. The degrees of environmental impact calculated using these indices are then compared with sales figures in order to define the eco-efficiency factor as shown in the diagram below. For example, assuming a doubling of sales while environmental impact remains the same, eco-efficiency is regarded as two times. Eco-efficiency measures the ratio of Sony economic activities to environmental impact. Higher eco-efficiency in business activities is achieved through reducing environmental impact by striking a harmonious balance between ecology and economy.



Sony is dedicated to implementing a broad spectrum of environmental conservation activities to lower the levels of the five environmental indices and thus improve eco-efficiency on an ongoing basis.

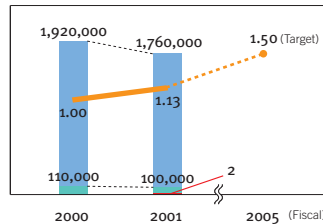
Environmental Indices and Eco-Efficiency

Greenhouse Gas Index and Its Efficiency
(Unit: Ton-CO₂)



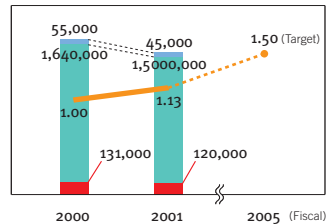
■ CO₂ emissions from product use
■ Greenhouse gas emitted by Sony sites
■ Emission offset contribution
— Eco-efficiency

Resource Input Index and Its Efficiency
(Unit: Tons)



■ Total volume of materials used
■ Total volume of recycled materials
■ Total volume of renewable resources used
— Eco-efficiency

Resource Output Index and Its Efficiency
(Unit: Tons)



■ Waste from business sites
■ Total volume of products produced
■ Total volume of products collected
— Eco-efficiency

The eco-efficiency factor for the year ended March 31, 2002, as compared with the year ended March 31, 2001, improved by 8% for greenhouse gas, 13% for resource input, 13% again for resource output and 10% for water. Looking at the chemical substances index, by far the best result was the 55% improvement in volatile organic compounds (VOCs), the class of chemicals most widely used by Sony.

Environmental Accounting

Environmental accounting is used to determine the cost of environmental conservation measures implemented during the year under review and calculate the reduction in environmental impact compared with the preceding year. As defined by the set of environmental indices that Sony uses, environmental impact refers not only to the impact exerted directly by Sony's business activities, but also to the impact exerted by Sony products when they are in use. Sony has formulated a monetary conversion coefficient to convert the factors involved to monetary values for use as reference. Sony spent a total of about ¥26.8 billion on environmental conservation measures during the year ended March 31, 2002. According to environmental accounting principles, this investment produced an environmental conservation effect valued at roughly ¥29.2 billion.

(page 50 for a detailed review of environmental accounting results)

(page 24 for more on Environmental Accounting in Product Design)

Environmental Conservation Costs

(Unit: ¥ million)

| Category | Expenses |
|--|---------------|
| For product design and recycling | 2,166 |
| For manufacturing and service related activities | 10,435 |
| For management activities | 5,192 |
| For research and development activities | 1,637 |
| For social activities | 246 |
| For environmental remediation | 7,101 |
| Total | 26,777 |

(Unit: ¥ million)

| Category | Material Effect | Monetary Effect |
|---------------------|-------------------------------|-----------------|
| Greenhouse gas | 1,431,436 ton-CO ₂ | 4,438 |
| Resources | 190,009 tons | 22,041 |
| Water | 2,763,283m ³ | 1,390 |
| Chemical substances | 557 tons | 724 |
| Environmental risk | 157 points | 557 |
| Total | | 29,150 |

Green Management 2005: A Progress Report

Green Management 2005, Sony's mid-term environmental action program, sets specific numerical targets for environmental performance indices and environmental management indices established to help achieve the "Sony Environmental Vision." The tables listed below offer a snapshot of the progress that had been made towards each goal as of the end of the year ended March 31, 2002. While there are certain areas with regard to resource output where Sony is on track for achieving its targets, there are still areas where more needs to be done. Particularly evident is the need to redouble efforts in the area of chemical substances in order to reach program targets.

Note that the targets for reducing the content of heavy metals in products have been brought forward from the year ending March 31, 2006 to the year ending March 31, 2005. This was done both in response to requests from customers and in order to comply with stricter laws and regulations being introduced in a number of countries.

Environmental Performance Indices

Greenhouse Gas Targets

| Item | Target | Base Fiscal Year | Target Fiscal Year | Progress in Fiscal 2001 | Prognosis | Rel. Pages |
|----------------------------|--|------------------|--------------------|---|-----------|------------|
| Sony sites | Reduce CO ₂ emissions by 15% or more per sales unit. | 2000 | 2005 | Emissions came to approximately 1,897,000 tons, about 40,000 tons less than fiscal 2000, representing reduction per sales unit of roughly 5.5%. | | 29, 52 |
| Carbon offset contribution | Aim to increase the ratio of renewable resources to at least 5% of energy used at all sites. | — | 2005 | Incorporated 2,080,000 kWh of renewable power, accounting for 0.04% of the total energy consumed at all Sony sites, owing to the combined use of the Green Power Certification System and local renewable energy sources at all Sony sites. | | 30 |
| Site-owned vehicles | Reduce CO ₂ emissions per sales unit by 20% or more. | 2000 | 2005 | Emissions from vehicles owned by Sony sites in Japan came to approximately 8,800 tons less than in fiscal 2000, representing an approximate 7.7% reduction per sales unit. | | — |
| Logistics | Reduce CO ₂ emissions by at least 15% per sales unit within the Sony Group. | 2001 | 2005 | CO ₂ is being reduced in line with a modal shift. Emissions by Sony's own distribution system in Japan came to around 35,000 tons. | | 31 |
| Products | Reduce power consumption by 30%. | 2000 | 2005 | Achieved energy conservation of around 10% to 30% in the latest models of leading products. CO ₂ emissions arising from the use of Sony products shipped, came to approximately 15.09 million tons, representing an approximate 7.6% decline per sales unit. | | 25, 54 |
| | Reduce standby power consumption to under 0.1W. | — | 2005 | Standby power consumption in the latest models of leading products is now below 0.2W. | | 54 |

Resource Input Targets

| Item | Target | Base Fiscal Year | Target Fiscal Year | Progress in Fiscal 2001 | Prognosis | Rel. Pages |
|---------------------|---|------------------|--------------------|---|-----------|------------|
| Green purchasing | Achieve 100% green purchasing ratio for materials unrelated to production, such as office supplies. | — | 2002 | Ratio of environmentally conscious products used in Sony Corporation's Headquarters and related offices are nearly 100%. | | 23 |
| Paper | Reduce volume of paper used by 20% per sales unit. | 2000 | 2005 | Combined copy and computer paper purchases in Japan (measured in A4 sheets) came to approximately 254 million sheets, about 40 million less than fiscal 2000, representing a decline of 16.4% per sales unit. | | — |
| | Use 100% recycled paper. | — | — | 96.1% of computer and copy paper used in Japan in fiscal 2001 was recyclable. | | — |
| Products | Reduce products by 20% in terms of weight or number of parts. | 2000 | 2005 | Total weight of products sold came to approximately 1.5 million tons, a fall per sales unit of about 8% year on year. | | 32 |
| | Increase percentage of recycled materials in products (by weight) by 20%. | 2000 | 2005 | Recycled plastic used in televisions and other products. | | 32 |
| Packaging materials | Change to environmentally conscious materials, such as recycled materials. | — | 2005 | Introduced recycled magazine paper and VOC-free vegetable oil based ink. Limonene-recycled polystyrene foam used for large television sets. | | 33 |

Resource Output Targets

| Item | Target | Base Fiscal Year | Target Fiscal Year | Progress in Fiscal 2001 | Prognosis | Rel. Pages |
|-------------------|--|------------------|--------------------|--|-----------|------------|
| Sony sites | Reduce total waste generated at sites by 30% per sales unit. | 2000 | 2005 | Total waste came to about 257,000 tons, about 24,000 tons less than in fiscal 2000, representing an approximate decline of 11.9% per sales unit. | | 32, 52 |
| | Achieve zero landfill waste. | — | 2005 | Of 100 manufacturing sites, 35 achieved zero landfill waste. (Note: the parameter is based on waste management units.) | | 33 |
| Product recycling | Draw up collection and recycling plan for leading products. | — | 2005 | Studies are being conducted on a system that is adaptable to different national regulations and regional characteristics. | | 35 |
| | Conduct research on ways to recycle plastic materials and implement them at processing plants. | — | 2005 | Green Cycle Co. Ltd., a recycling firm, installed plastics identification system for use with the rear covers of televisions. | | 34 |

Water Resource Targets

| Item | Target | Base Fiscal Year | Target Fiscal Year | Progress in Fiscal 2001 | Prognosis | Rel. Pages |
|------------|---|------------------|--------------------|--|-----------|------------|
| Sony sites | Reduce the volume of water purchased or drawn from groundwater by 20% per sales unit. | 2000 | 2005 | Fiscal 2001 groundwater use was about 26.9 million m ³ , roughly 1.73 million m ³ less than in fiscal 2000, representing an approximate 9.3% per sales unit decline. | | 32, 52 |

Hazardous Materials Targets

| Item | Target | Base Fiscal Year | Target Fiscal Year | Progress in Fiscal 2001 | Prognosis | Rel. Pages |
|------------|--|------------------|------------------------|--|-----------|------------|
| Sony sites | Class I substances: Prohibited. | — | — | Used in minute quantities as trace additives for batteries. 262 kg of mercury were used in fiscal 2001. Sony will continue to develop new materials in order to reduce the use of mercury. | | 37, 52, 53 |
| | Class II substances: Phase out. | — | 2004 | 468 tons of Class II substances were used in fiscal 2001, of which 211 tons were lead-based solder. | | |
| | Class III substances: Reduce emissions by 90% (from fiscal 2000 level). | 2000 | 2010 | Approximately 28,000 tons were handled in fiscal 2001. Of that amount, about 2,800 tons were emitted or transferred, an increase of 300 tons (approx. 7.2% per sales unit) from 2,500 tons in fiscal 2000. | | |
| | Class IV substances: Make efforts to reduce emissions. | — | — | Approximately 39,000 tons were handled in fiscal 2001. Of that amount, about 6,800 tons were emitted or transferred, an increase of approximately 400 tons from 6,400 tons in fiscal 2000. | | |
| Products | Introduce lead-free solder. | — | 2004 | Continuing introduction of lead-free solder for use in main products, including televisions, VCRs and mobile phones, especially those manufactured in Japan and Asia. | | 37, 54 |
| | Eliminate polyvinyl chloride from all products. | — | 2004 | Substitutes are being introduced but some polyvinyl chloride is still used for wiring, magnetic tape and external casings. Still used in power supply chords due to safety requirements. | | 38, 39 |
| | Eliminate use of halogenated flame retardants. | — | 2004 | Measures are being taken to introduce halogen-free flame retardants as material for housings, printed wiring boards and large components. | | 54 |
| | Eliminate use of lead. | — | Immediately or by 2004 | Substitutes are being introduced for the solder for electronic components and for a stabilizer in plastics. | | — |
| | Eliminate use of cadmium (Nickel cadmium batteries scheduled for total elimination by March 31, 2007.) | — | Immediately or by 2004 | Found cadmium being used as a plastics additive, which is prohibited. | | 18 |
| | Eliminate use of chromium VI compounds. | — | Immediately or by 2004 | Chrome-free metal plates are being introduced as substitutes for certain frequently purchased products. | | 37 |
| | Eliminate use of mercury. | — | Immediately or by 2004 | Small fluorescent lights are being substituted for the backlights in LEDs. | | — |

Environmental Management Indices

| Item | Target | Target Fiscal Year | Progress in Fiscal 2001 | Prognosis | Rel. Pages |
|-------------------------------|--|--------------------|---|-----------|------------|
| Corporate citizenship | Sony sites will participate in local environmental events at least once a year. | | Almost all Asian sites and many in Japan are either sponsoring or providing support for environmental events in the local community. | | 46–48 |
| Environmental risk management | Conduct annual assessments based on environmental risk guidelines at sites using hazardous materials. | | Environmental risk management guidelines were revised and all Sony global sites, except those in China, conducted assessments based on the new guidelines. Sites in China will begin assessment in fiscal 2002. | | 38 |
| Environmental education | All management level staff to attend environmental lectures. | 2002 | At Sony Corporation Headquarters, 56% of management level staff attended environmental lectures. | | 20 |
| Environmental communication | Issue an environmental report (including site reports) annually. | | The Sony Group Environmental Report is issued annually, with separate site reports issued by 50 Sony sites. | | 21 |
| | Disclose environmental performance information quarterly. | | Updated environmental information was posted on Sony's website on a quarterly basis. | | 21 |
| | Place advertisements on environmental issues at least once a year. | | Regular environmental advertisements were placed in newspapers and magazines and posted on the Sony website. | | — |
| Environmental accounting | Disclose environmental accounting information in site reports. | 2003 | Environmental accounting guidelines were reviewed and revised. An environmental accounting system is under construction. | | 13, 50 |
| | Incorporate environmental controls relating to environmental activities and capital investment into decision-making on budget. | 2003 | | | |

Achievement expected Slow progress, activities limited Achievement unlikely

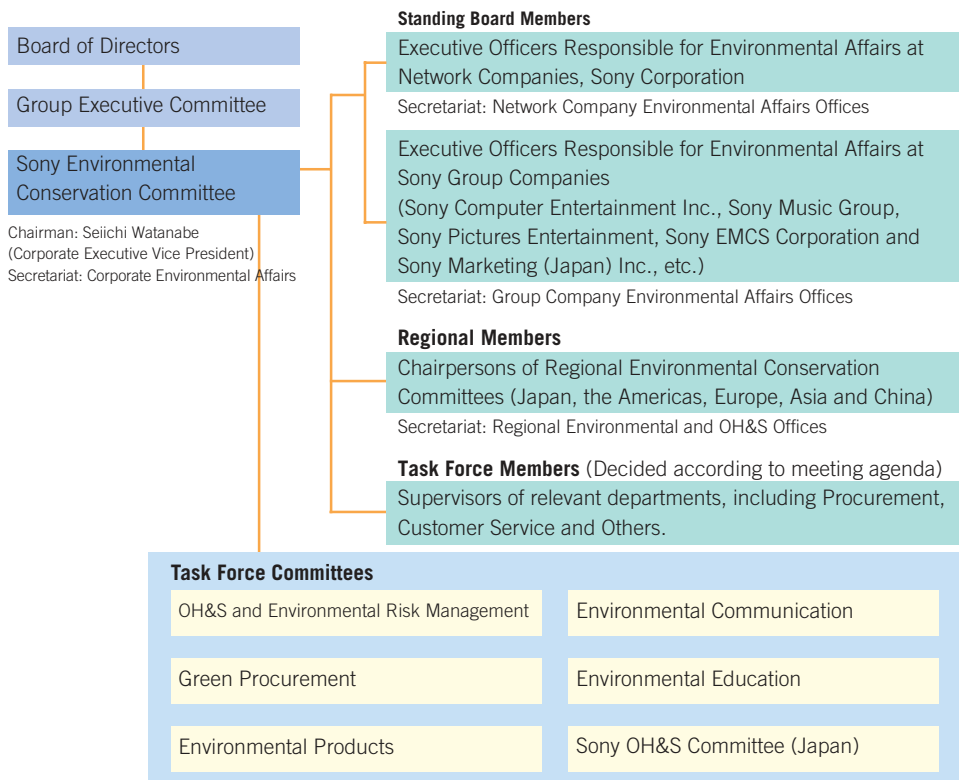
Environmentally Responsible Management and Organizations

Sony's global environmental activities are supervised by the Sony Environmental Conservation Committee and implemented by a network of environmental organizations and committees. The Committee serves as the decision-making body for the entire Group's environmental conservation and occupational health and safety (OH&S) management activities. Here, fundamental management policy, targets, and OH&S guidelines are formulated, including the Sony Environmental Vision and Sony mid-term environmental action program, Green Management 2005. Policy formulated by the Committee is implemented via a two-tier structure—environmental affairs offices at individual business units and five Regional Environmental Conservation Committees*. Environmental affairs offices at Network Companies and Sony Group companies are responsible for organizing environmental activities at individual business units, while the Regional Committees work in parallel with business units to carry out activities across entire regions. The chief responsibilities of the Regional Committees include ensuring compliance with national laws and regulations, responding to market demands, performing administrative and auditing duties and assisting Sony sites in acquiring ISO 14001 certification.

Another key element of the structure is a network of task force committees. These bodies discuss specific environmental conservation and OH&S issues that concern the Group as a whole. Recommendations are submitted to the Environmental Conservation Committees.

(*  page 17 for a geographical breakdown of the five Regional Environmental Conservation Committees.)


Environmental Conservation Committee Organization



Environmental Management Systems

▶ Building Environmental and OH&S Management Systems

Sony regards its environmental management systems as a fundamental vehicle for all Sony employees to participate in environmental activities. To this end, Sony is putting in place environmental management systems at its business sites worldwide, based on the international standard for environmental management systems—ISO 14001. Considerable progress has been made in this area with almost all of Sony's manufacturing sites already ISO 14001 certified, and ongoing efforts are being made to gain ISO certification for non-manufacturing sites. These efforts are aimed at creating a system capable of implementing policy formulated by the Environmental Conservation Committee and ensuring that environmental conservation activities match each Sony business activity. Moreover, as a common global platform for environmental management, enhancements are being made to the system to enable Sony members to share knowledge and ideas on risk management and environmental communication, thereby making it more efficient.

Sony also employs an occupational health and safety management system (OHSMS). The basic aim of OHSMS is to improve health and safety by quantifying hazards in the workplace in terms of "risk." Workplace hazards are graded, and associated risk is controlled accordingly. Sony's first step in this direction was acquisition of OHSMS certification at the Sony Chemical Kanuma Site in 1998, the first such certification awarded in Japan. Since then, a total of 39 Sony sites worldwide have acquired OHSMS certification. ( page 55 for ISO 14001 and OHSMS newly certified sites)

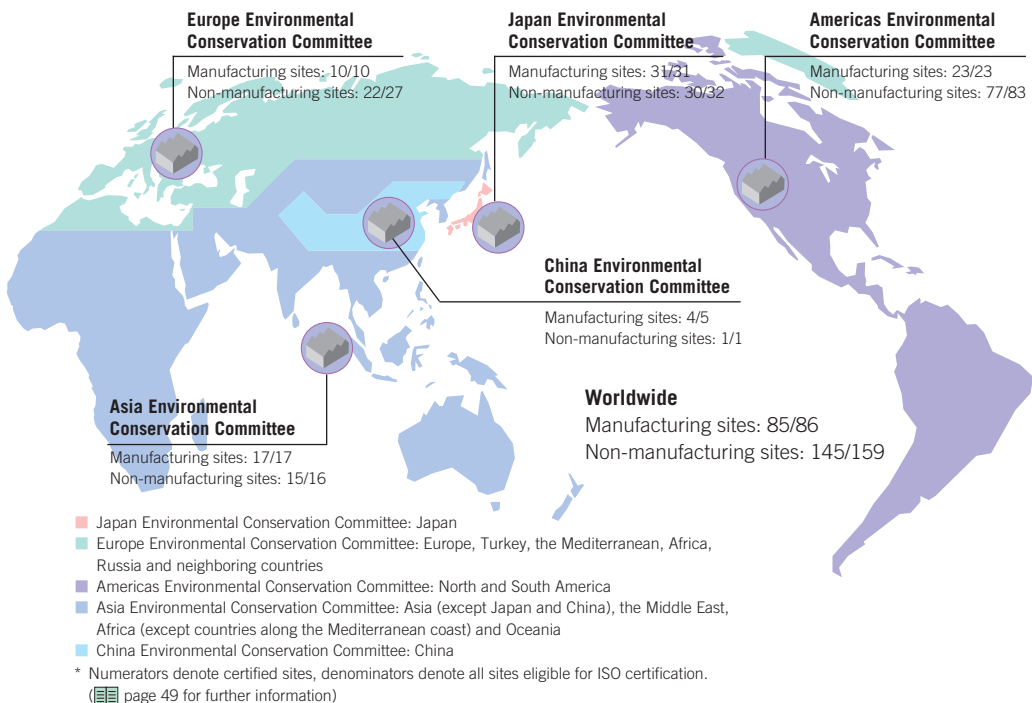
URL http://www.sony.co.jp/en/SonyInfo/Environment/data/en_data_top.html

▶ Progress in ISO 14001 Certification

As of March 31, 2002, a total of 85 manufacturing sites and 145 non-manufacturing sites had acquired ISO 14001 certification.

Sony uses ISO group certification to unify management systems in the same business category or in a particular region to improve the quality and efficiency of systems. During fiscal 2001, 73 non-manufacturing sites in North America were certified in December 2001, and 16 companies in the Sony Music Group in Japan were certified in February 2002.

ISO 14001 Certification Status in the Environmental Conservation Committee Regions (As of March 31, 2002)



Environmental, Health and Safety Auditing

Sony has put in place a series of auditing systems to monitor ongoing improvements in the environmental and occupational health and safety performance of Sony sites, and to prevent environmental accidents and disasters.

Based on audits and yearly surveillance by third-party organizations in accordance with ISO 14001 and the Occupational Health and Safety Management System (OHSMS), as well as internal audits conducted by Sony sites, the various Regional Environmental Committees conducted a total of 64 environmental and occupational health and safety audits around the world in the year ended March 31, 2002. In addition to this system of site auditing, in-house experts conducted risk diagnoses of environmental facilities a total of 12 times and insurance firms conducted 52 fire risk surveys. This combination of surveys and audits conducted with various objectives is used by Sony to check the status of environmental safety and risk management at its various sites.

Environmental Incidents

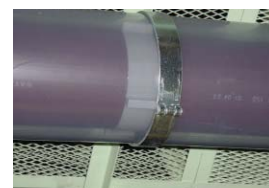
Environmental incidents, violations of groundwater standards and directives from authorities during the year ended March 31, 2002 are as follows.

Environmental incidents: 5
 Violations of environmental groundwater standards revealed by internal inspections: 11 (3 caused by Sony)
 Directives regarding products: 1
 Fines and penalties: None

The five environmental incidents involved releases of oil, kerosene, ethyl mercaptan, nitric acid vapor and hydrofluoric acid. Another incident at the Shanghai Suoguang Visual Products Company involved release of oil, some of which found its way to a waste water manhole just outside the premises. An earthen embankment was immediately created to stop the outflow and there was no further detection of oil outside the company site. The hydrofluoric acid leakage was discovered through an internal inspection. Prompt action was taken in each of these instances, and in cases where regulatory limits were exceeded, measures were enacted to prevent a recurrence of the problem.

▶ Violation of Groundwater Standards at Manufacturing Sites in Japan

Internal inspection results revealed 11 cases of the presence of pollutants exceeding environmental standards. Sony was identified as responsible for three of these cases. One case, which involved soil contamination by chromium VI at the Sony Corporation, Haneda Technology Center, was cleaned up by March 2002. Another involved tetrachloroethylene and trichloroethylene contamination at Sony PCL Inc., where monitoring is continuing. The third involved fluorine contamination at Sony EMCS Corporation, Inazawa TEC. In June 2001, a voluntary inspection by Sony Inazawa revealed fluorine levels above acceptable limits at one of its sites. Wastewater containing fluorine was suspected as the cause of the contamination. Various actions were taken, including the repair of cracked drains, decontamination of groundwater, and installation of dual-wall drainage pipes equipped with sensors to detect leaks and prevent a recurrence of this problem. As a further response, Sony conducted surveys of the groundwater at all sites that use chemical substances. (page 38 for a detailed description of the groundwater surveys conducted at Japanese sites.)



Dual-wall pipe with leak sensor.

URL http://www.sony.co.jp/en/SonyInfo/Environment/news/en_news.html

▶ Temporary Halt to Shipment of Some Sony Models Destined for Europe

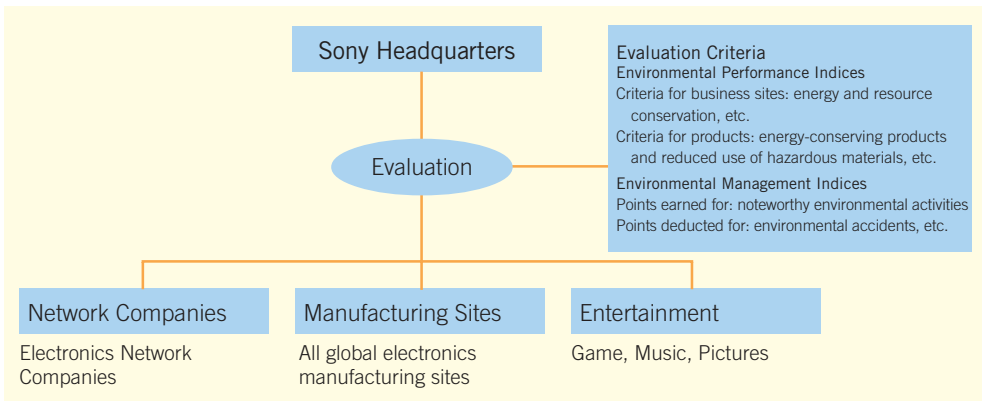
In October 2001, Sony Computer Entertainment Europe temporarily halted shipments of the PS one game console destined for the European market after Dutch authorities determined levels of cadmium above the limits allowed under Dutch regulations. PS one shipments were resumed after confirming that there was no health risk to users during use and Sony worked closely with Dutch authorities to replace non-compliant components to meet their standards. Concurrent to its response to the PS one issue, Sony initiated its own program to inspect all its products and discovered other occurrences. In recognition of the environmental implications involved, Sony has embarked on a company-wide, comprehensive program of measures, including revisions to specific policies and standards and tighter management and control systems, in order to prevent any problems occurring with cadmium and similar chemical substances in the future.

URL http://www.sony.co.jp/en/SonyInfo/Environment/news/en_news.html

Environmental Evaluation and Award Programs for Environmental Performance

Evaluating Business Unit Performance

Sony has chosen to make environmental activities one of the cornerstones of its operations. As such, environmental performance has been added as a new yardstick in evaluating the performance of business units, taking its place with other important barometers measuring operational performance and quality. Evaluation of environmental performance focuses on the success of each individual business unit in “actually reducing their impact on the environment over a one year period,” in accordance with targets in Green Management 2005. Performance is evaluated in quantitative terms wherever possible. In the year ended March 31, 2002 the scope of environmental evaluation was extended from electronics to include entertainment companies producing games, music products and pictures.



Environmental Award Programs

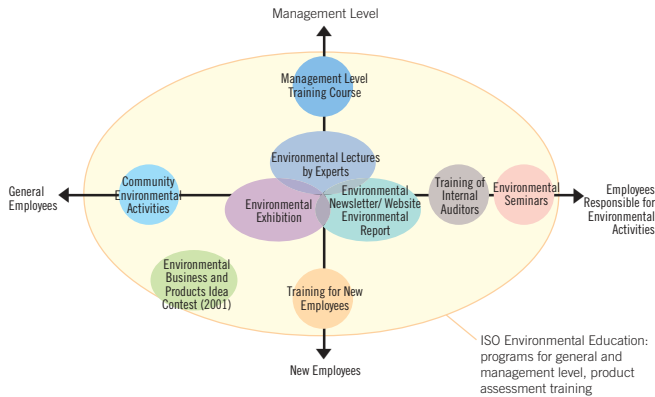
The following awards are given in recognition of outstanding results in environmental activities. Any Sony organization or individual worldwide is eligible.

| |
|---|
| <p>Sony Environmental Award Launched in 1994, the Sony Environmental Award is presented annually in recognition of exceptional achievements in environmental conservation activities. Winners are selected from among regional candidates by the Sony Environmental Conservation Committee.</p> <p>Special Environmental Contribution Award This award is presented in recognition of outstanding contribution to the environment. The recipient of the award is chosen by the Chairman of the Sony Environmental Conservation Committee.</p> <p>Environmental Excellent Performance Award Based on the results of business unit evaluations, this award is presented in recognition of outstanding environmental performance by individual business units. Regions and Network Companies (NCs) also operate their own award programs.</p> |
|---|

The Sony Environmental Award for the year ended March 31, 2002 was presented to business units producing environmentally conscious televisions and mobile communication products; to the Sony Tower for its evolution as an eco-conscious building; and for the acquisition of ISO 14001 group certification for 73 non-manufacturing sites in North America. The Environmental Excellent Performance Award was presented to the Semiconductor Network Company and the Core Technology and Network Company.

Environmental Education

Sony's Environmental Vision defines environmental education as one of the three driving forces for realizing Sony's ideals. Sony regards environmental education as vital to instilling in employees a sense of awareness that translates into their everyday approach to work. By planning and offering a broad range of training and education programs, events and lectures, Sony is aiming to nurture a worldwide employee base that thinks about and acts on environment issues.



In-House Environmental Education
To ensure that employees receive continuous education on the environment, Sony is introducing a lecture program aimed at all employee levels. This supplements existing ISO 14001-based environmental training for Sony staff. Employees can also attend frequent exhibitions and workshops tailor-made for different levels of environmental knowledge.

▶ **Distributing Environmental Information**

Sony uses a variety of media to provide employees with environment-related information on a continuous basis. These mainly include in-house publications, such as the *ECOLOGY* environmental newsletter and internal Sony websites, as well as the in-house *Sony Times* corporate newsletter, *Scope* video broadcasts, and a variety of local newsletters published in overseas locations.

▶ **Environmental Events Held by Network Companies**

As a way to share information on the environment, Sony Network Companies hold a variety of events focusing on their business fields or host communities. The Semiconductor Network Company's Environment Month, held every June, is just one example. The month is used to hold a variety of environmental events including summits, lectures and exchange meetings with communities. Meanwhile, in December 2001, the Core Technology & Network Company organized an in-house exhibition to discuss and share information on new environmental technologies among employees.

▶ **Environmental Lectures**

Sony sites plan and stage a range of environmental lectures for employees, featuring both in-house and outside experts. Lectures held at the Sony Corporation's Headquarters during the year ended March 31, 2002 included a presentation on global warming by Yoichi Kaya, professor emeritus at Tokyo University, and a presentation on waste issues by Miyako Matsuda, associate professor, Fuji Tokoha University. The presentation by Ms. Matsuda inspired Sony employees to launch a drive to reduce the number of on-site vending machines and initiate the My Cup Campaign to cut back on disposable cup use.

▶ **Environmental Business Models and Product Ideas Contest**

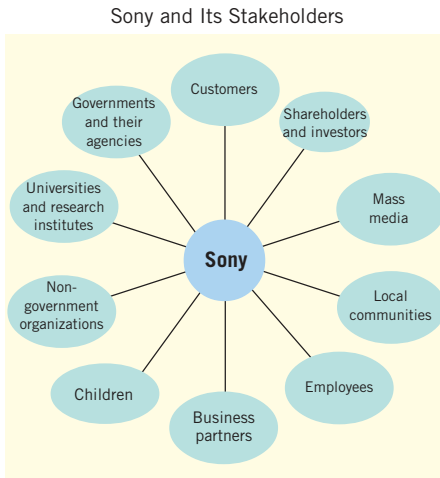
In the year ended March 31, 2002, Sony held a contest to encourage employees to use their creative powers to devise new environmental business models and products. Ideas had to demonstrate a balance between economic and ecological issues. A total of 203 proposals were submitted worldwide, with the best ideas receiving prizes.

▶ **Decade-Old Time Capsule Messages**

In 1991, 1,284 messages for 21st century employees were written by Sony employees as part of an environmental idea contest. The messages were opened a decade later at the Eco Products Exhibition in December 2001. Many of the messages called on current employees to "use Sony's unique creative strengths to keep making products that enhance user lifestyles and help the environment," and to "work hard so that the Earth is clean in 100 or 1,000 years from now."

Disclosing Environmental Information and Communication

Sony adheres to a policy of maintaining ongoing dialogue with stakeholders by providing environmental information promptly, continuously and in a fair and honest manner. The company makes a point of studying reviews and suggestions from sources both within and outside the company and using them to improve environmental activities.



Sony endeavors to keep stakeholders informed with accurate information provided through various communication channels. Environmental reports (including site reports), public relations materials, the website and the environmental exhibition room are all used to disseminate information. Sony supplies environmental information on products and provides updates on business activities quarterly. A two-way flow of communication is maintained through questionnaires included with environmental reports and comments sent to the Sony website. Sony also conducts its own programs to maintain lines of communications with communities (P46–48) and business partners (P22–23).

The Environmental Communications Committee of the Sony Environmental Conservation Committee promotes environmental communication throughout the company by bringing together environmental communication staff from each business unit. This helps ensure that all environmental communication programs are conducted in a seamless manner.

Disclosure of Information

In addition to providing a regular flow of information through environmental reports, press releases and the Sony website, Sony also regularly discloses information to representatives of the media. In the year ended March 31, 2002, 22,000 copies of the Japanese-language Environmental Report 2001 were distributed and 5,100 copies of the English-language report were distributed. During the same year, there were 115,000 visitors to Sony's environmental website.

URL <http://www.sony.net/eco/> (Featuring information on Sony social and environmental activities)

Permanent Exhibitions

Located on the first floor of Sony Corporation's Headquarters, the Sony Eco Plaza provides a variety of environmental information to the public. Displays allow visitors to view environmental programs and conduct experiments to experience these programs first-hand. In the year ended March 31, 2002, an Eco Life Knowledge corner was set up so that visitors can evaluate their environmental awareness by taking a quiz. The showroom was first opened in 1995 solely to train Sony employees and opened to the public in 1999. In the year ended March 31, 2002, there were about 6,700 visitors. Environmental exhibitions have also been set up at business sites in Atsugi (Japan), Sendai (Japan) and elsewhere.



Junior high school students touring the Sony Eco Plaza.



"Sony Eco Plaza"
Tel: +81-3-5448-4455 Fax: +81-3-5448-2560
URL <http://www.sony.net/ecoplaza/>

Exhibitions

An environmental exhibition was held at the Sony Tower in Osaka (Japan) in the year ended March 31, 2002. In addition, Sony's booth at the Eco Products Exhibition introduced various environmental activities and was popular among visitors of all ages. Environmental corners were also set up at the IFA (Berlin, Germany) and GITEX 2001 (Dubai, United Arab Emirates) exhibitions.

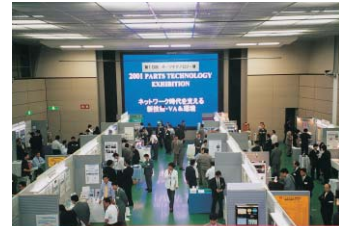
Green Procurement and Purchasing

▶ Sony Procurement Policy

The traditional cornerstones of Sony's procurement policy are defined as Q for quality, C for cost, D for delivery and S for service. Two more letters have been added in recent years: a small "e" for e-Procurement, made possible by the advent of IT; and a capital "E" for the growing concern over the environment. Thus, the procurement policy that Sony pursues is defined as "eQCDS+E".

▶ Relationships With Business Partners

In order to build a more productive relationship with business partners, Sony established supplier guidelines designed to achieve a stable and productive eQCDS+E relationship. The guidelines include eight objectives and a series of steps that serve as the prerequisite for establishing a business partnership. The SPIRITS e-Procurement system is designed to create a highly efficient global materials procurement system. In addition,



Parts and Technology Exhibition

with the aim of opening the door to small and medium-sized companies that possess advanced technologies, a parts and technology exhibition is held annually at Sony Headquarters in Tokyo and at the Atsugi Technology Center to create new opportunities. The theme of the parts exhibition in the year ended March 31, 2002, in which approximately 50 companies participated, was "New Technology, Value Analysis and the Environment." It was attended by 1,500 Sony employees.

▶ Program to Reduce the Number of Component Types

As part of the drive to pare back the waste generated by all manufacturing processes, Sony is implementing an in-house initiative referred to as the PANDA project. Designed to reduce the variety of components through standardization and sharing of components among more products, the project is currently focusing on identifying unnecessary dies and facilities. The project is also expected to pay dividends with regard to the environment. Through the cooperation of business partners, the PANDA project succeeded in reducing the number of component types by 20% between the year ended March 31, 2000 and the year ended March 31, 2002.

▶ Promoting Green Procurement

In addition to asking business partners to implement environmental management, Sony promotes the procurement of materials that are environmentally conscious. In line with this objective, Sony realigned its organization and started the Green Procurement Committee, a subcommittee that works under the Sony Environmental Conservation Committee, in September 2001. Members of this subcommittee include personnel in charge of procuring materials and in charge of environmental matters. One of the primary roles of this committee is the development of the Green Partners System. Following guidance issued in the year ended March 31, 2002 by a government authority concerning a chemical substance found in some components of Sony products, the committee assumed responsibility for strengthening the control procedures for managing and reducing specific chemicals included in components and materials.

(☞ page 18 for chemical substances found in some components of Sony products)



▶ The Green Partner System

Sony created the Green Partner System in July 2001 as part of its drive to factor in environmental considerations from the materials procurement stage. The Green Partner System involves coordinating Sony's efforts with those of business partners who supply components, devices and materials. The goal is making environmental awareness a cornerstone of the business relationship. Under the Green Partner System, Sony and its business partners adhere to a common set of environmental standards. The objective is to improve competitiveness among Sony and its business partners through the development of technology to reduce environmental impact. As part of the new program, a total of 8 orientation meetings attended by representatives from approximately 700 companies were held at the Sony Headquarters in July and November of 2001.



Green Partners Orientation Meeting

▶ Green Partner Standards

The Sony Green Procurement Guidelines have so far been used to conduct periodic inspections to confirm that suppliers are adhering to environmentally conscious practices in providing goods and services. The Green Partner Standards were established with the aim of taking green procurement to a higher level whereby the demand-side, namely the Sony Group, and the supply-side, the green partners, work in unison to preserve the environment. The standards set out specific environmental standards and evaluation items in writing. The Green Partner Standards require that Sony business partners establish and promote environmental management systems, conduct risk management, implement green procurement, and disclose information.

▶ The Green Partner Report Card

Under the Green Partner System, the green partners present environmental activity reports once a year. The reports are reviewed and each partner is given a grade ranging from A to E. Green Partners who acquire ISO 14001 certification receive an A. However, the Green Partner System does not compel suppliers to acquire such certification. Rather, the system enables Sony to gain a better understanding of each partner's environmental activities and leads to cooperation and support, such as providing an environmental education program tailored to each partner's individual needs. This assistance is structured to allow each partner to introduce environmentally responsible programs and practices at its own pace, progressing step by step in an atmosphere of cooperation. At present, approximately 40% of Sony suppliers have achieved a grade of A.

The Green Partner Report Card



*Acquisition of ISO 14001 certification is not a requirement for becoming a green partner.

▶ Green Procurement of Non-Manufacturing Materials

In the Japanese arena, Sony regards the procurement of office supplies and other non-manufacturing materials as a green purchasing activity. Such procurement therefore falls under the auspices of the Sony Green Purchasing Guidelines as part of the overall drive to promote the environmentally responsible procurement of goods and services.

▶ SMAPS Purchasing Information System

SMAPS stands for Sony Master of Arts Procurement System. It is used at the Sony Headquarters as an in-house information purchasing system. The purchase of green products by employees is encouraged by affixing the "Eco" mark to office supply products certified as green procurement goods. This enables employees to take the initiative in purchasing green products. The list of products bearing the "Eco" mark was expanded in the year ended March 31, 2002 to approximately 900 items.

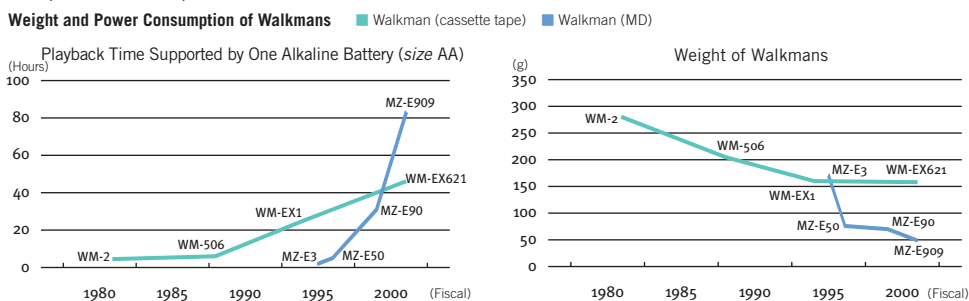
Environmentally Conscious Products and Services

Sony's approach to designing environmentally conscious products is to minimize environmental impact throughout the entire product life cycle, from the procurement of materials through manufacturing, distribution, customer use and disposal or recycling. Green Management 2005, Sony's mid-term environmental action program, contains specific goals in this regard. For example, by March 31, 2006, Sony aims to reduce standby power consumption to 0.1 W or less and introduce lead-free solder in all printed wiring board soldering processes. (■ page 14–15)

Established as a specialist task force under the Environmental Conservation Committee, the Product Environmental Committee promotes environmentally conscious designs on a company-wide basis that will enable targets to be met. It holds regular meetings to exchange information and stress the importance of environmental policies.

▶ The Sony Walkman: Designed to Save Energy and Resources

Sony has vigorously sought to reduce the size and weight of its diverse lineup of products. The Walkman is a case in point. The recording media it uses has evolved from cassette tapes to mini discs (MDs), and now the Memory Stick. The latest models of the Walkman are even smaller and consume less power than ever before. The following graph shows the progress Sony has made in reducing the Walkman's weight and power consumption.



▶ Enabling a Networked Society

Sony is at the vanguard of development of new products and services for the networked society. Here, eco-conscious development is very important. Reducing the size and weight, as well as power consumption of products has been a key development theme at Sony for many years. This is critical to creating a network environment accessible anywhere, anytime and by almost anybody. Networking is presenting new lifestyle opportunities, as seen in the growth of online music distribution and e-learning. At the same time, networking may also allow society to use resources more efficiently, as faster data transmission conserves resources and streamlines logistics processes. There is a drawback, however, in that wider use of always-on networks is likely to trigger a significant rise in power consumption. The needs of today's networked society make it essential to develop a new range of environmentally conscious products and services.

▶ Environmental Accounting in Product Design

Sony's success in reducing the environmental impact of its products through improvements at the design stage can be quantified by applying the principles of environmental accounting. And by going one-step further and using Sony's original monetary conversion coefficient, it is possible to compare the beneficial effect of the improved designs of a new product with preceding models in numerical terms. For example, the table below shows the annual environmental accounting figures for televisions produced for the Japanese market. The beneficial effect of reduced power consumption on the environment is given by the following formula: {Difference in operating power consumption with comparison model x the average household TV viewing time (4.5 hours/day) + difference in standby power consumption with comparison model x standby time (19.5 hours/day)} x product lifespan (10 years) x total production volume. The same approach can be used to calculate the comparative environmental conservation effect of other improvements.

Comparative Environmental Conservation Effect for TVs

| Effect | Comparative Environmental Conservation Effect | Effect in Monetary Terms (¥ million) |
|----------------------------|---|--------------------------------------|
| Energy conservation | 241 million kWh | 289 |
| Polystyrene foam reduction | 182 tons | 21 |
| Lead reduction | 34 tons | 44 |

* The estimated cost of environmentally conscious design was ¥139 million.

* Figures for the comparative environmental conservation effect represent comparisons with models from the preceding year. (Note that figures for lead reduction represent comparison with cases where lead-free solder was not introduced.)

* The comparative environmental conservation effect represents the environmental impact of all TVs manufactured in the year ended March 31, 2002 during their entire useful life of 10 years.

* The reduction for polystyrene foam includes the use of polystyrene recycled using the limonene method.

* ■ page 51 for a description of the monetary conversion coefficient.

▶ **Examples of Environmentally Conscious Products and Services**

Sony uses a variety of environmentally conscious designs for a wide range of products. Some of these products and their key features are introduced below.

▼ **Television Featuring FD Trinitron (KV-29DS55)**

This model incorporates an energy-conserving design that reduces standby power consumption to only 0.07 W. Operating mode consumption has been reduced by 22% from the previous year's model. Furthermore, this model's hexagonal carton uses fewer resources than conventional cartons. (Table page 33 for more information on hexagonal cartons). Lead-free solder is used on all soldered parts of printed wiring boards and the KV-29DS55 complies with Japan's Green Purchasing Law.



◀ **MD Walkman (MZ-E909)**

Designed to consume fewer resources, this is the lightest MD Walkman. Power consumption is 32% lower than in the previous model. Polyvinyl chloride has been eliminated from the headphone cable and remote control unit cable. The unit's main printed wiring boards use lead-free solder and halogen-free flame retardants. Lead-free solder is used in some accessories. Plastic bags are not used for packaging.

* This model features the lightest weight of any portable MD player in the world. (According to Sony sources as of April 2002.)

▶ **Conveying Environment-Related Information on Products**

Sony has been employing the "eco info" mark to give customers access to environmental information concerning its products in Japan since December 2000. The symbol appears in product catalogs, packaging materials, instruction manuals and product stickers, as well as in promotional materials and advertisements, to explain their environmentally conscious points. This mark has been used in Europe since August 2001. Never displayed alone, the eco info mark is always accompanied by detailed environment information on the product.

The "eco info" mark, as used with the MD Walkman (MZ-E909)



The main soldered parts of the unit and its remote control use lead-free solder.



PlayStation 2

All polystyrene foam has been replaced with 100% recycled pulp molds, eliminating the consumption of approximately 600 tons of fossil fuel-based material per year. Pulp molds offer the additional advantage of cutting the volume of cushioning materials by one-third, thus reducing the environmental impact of transportation and storage operations for this product. Lead-free solder has been used in the PlayStation 2 memory card (8MB).



AIBO Entertainment Robots Latte and Macaron (ERS-310 Series)

A meticulous process of risk assessment was used to test all aspects of safety for this product. Of particular concern were what could happen if the robot was dropped and broken or if children attempted to chew or swallow the tail or other components. All polystyrene foam has been phased out. Power consumption of the model in the year ended March 31, 2002 is 5 W, 4 W less than the previous year's model. Lead-free solder is used for soldering the major printed wiring boards.



Network Handycam (DCR-TRV50)

Lead-free solder is used for soldering for major printed wiring boards and lead has been removed from the plating of about 90% of circuit component electrodes. The printed wiring boards and enclosure have no halogenated flame retardants. Power consumption was reduced to 3.4 W, 10.5% less than in the previous model and standby consumption was reduced to 0.2 W. 100% recycled magazine paper is used for all of the product's packaging material.



Notebook Personal Computer

VAIO SR Series Notebook (PCG-SR9M/K)

This small, lightweight model (1.39kg) has a battery that allows it to operate for up to 5.5 hours. The major printed wiring boards use lead-free solder for soldering and do not contain halogenated flame retardants. This PC uses packaging materials made entirely of recycled magazines and uses vegetable oil based ink, which is free of volatile organic compounds (VOCs), for all printing. Cardboard cushions and pulp molds have replaced polystyrene foam as packaging materials.



Mobile Phone C1002S (Marketed by KDDI Corporation (au Group))

The C1002S features a newly developed power control circuit that reduces no-load power consumption of the AC adapter to approximately 0.01 W, and the operating power consumption of the phone itself to only 0.65 W. Lead-free solder is used in all printed wiring boards and there are no halogenated flame retardants in printed wiring boards and enclosures.



Contactless IC Card Technology (FeliCa)

The applications for this technology are expanding as a fare payment card for public transportation and as electronic money. The reusable nature of FeliCa is expected to contribute to resource conservation. The card first came into practical use in 1997 as the “Octopus” card, a fare payment card for public transportation in Hong Kong. FeliCa technology made its debut in Japan in 2001 when the East Japan Railway Company introduced its “Suica” card. The full-scale introduction of FeliCa technology in Singapore began in 2002.



DVD Player (DVP-NS515)

Standby power consumption was reduced by 72.5% from the previous model to 0.11 W. Lead-free solder is used in the remote control unit, power supply block and major printed wiring boards. Use of halogenated flame retardants has been eliminated from the main unit's enclosure, printed wiring boards and the remote control unit's enclosure and printed wiring boards.



S-Master Fully Digital Amplifier

The DAV-S800 DVD home theater system, known as the “Wega Theater,” features a fully digital amplifier that incorporates S-Master technology. This yields many advantages over analog amplifiers, which normally have high power consumption and considerable weight. While delivering high-quality audio, Sony's S-Master fully digital amplifier has only 1/36 the power loss due to heat dissipation than in a comparable analog model. Power consumption, weight and size are one-quarter that of an analog system, enabling significant conservation of energy and resources.

Global Environment and Facilities

Sony recognizes that maintaining the Earth's biodiversity is a key environmental protection theme and thus supports protection of the Earth's forests and oceans and the diversity of wildlife that they sustain. To reduce environmental impact, Sony does not limit environmental considerations to its products and services. Indeed, environmental considerations are taken into account in the design and construction of manufacturing sites producing products and offices providing services. In addition, Sony conducts environmental impact assessments and has introduced renewable energy sources at sites.

Sony carries out environmental impact surveys and studies based on the Environmental Guideline, Construction Edition (established in July 2000), when constructing new sites, setting up operations and refocusing operational activities at facilities. Eight Sony facilities have already been evaluated based on the guideline.

▶ **Construction of the New Sony Electronics (Wuxi) Plant, China**

The Sony Electronics (Wuxi) Plant, China, is one of the eight sites to have been evaluated in accordance with the guideline. The Wuxi City Management Committee acquired ISO 14001 certification and detailed environmental requirements were established for construction of the plant. The new Wuxi site met all the requirements and passed its environmental impact assessment. The following environmental measures have been implemented at the plant:

- ▶ A solvent recovery facility with equivalent capabilities to those used by Sony in Japan, was installed to reduce the atmospheric discharge of dimethyl carbonate (DMC) as a measure to prevent the discharge of organic solvents.
- ▶ A cooling system without a dry bulb unit was installed to reduce energy for refrigeration equipment.
- ▶ Introduction of an energy conservation system that collects and reuses steam for heating.

▶ **Sony Semiconductor Kyusyu Co., Kumamoto Technology Center Starts Operations**

The Kumamoto Technology Center of Sony Semiconductor Kyusyu (Japan) commenced trial operation in October 2001. The new Center has the latest in highly efficient facilities and takes advantage of new production methods such as highly flexible mini-production lines that enable a wide range of products to be produced in small lots. As a result, the new Center will be about 30% more energy efficient than plants built around the 1990s. Using know-how from other domestic semiconductor sites that have achieved zero landfill waste, Sony Semiconductor Kyusyu will separate waste from the start of commercial operations.

▶ **Sony Tower: The Evolution of an Eco-Conscious Building**

The Sony Tower in Osaka, Japan, has evolved as a showpiece of eco-conscious technology and design. This evolution took another step forward in the summer of 2001 with the building's refurbishment. Sony used this opportunity to promote the idea of eco-conscious building operation and management, and the role of showrooms as a source of environmental information for the public.

- ▶ All the power used by the building is provided by wind power generators under the Green Power Certification System, making it the first building of its kind in Japan. Electric power consumed by Sony Tower in the year ended March 31, 2002 totaled approximately 1.2 million kWh, creating a reduction in CO₂ emissions of 450 tons. (☞ page 30 of the Green Power Certification System.)
- ▶ Special environmental events are held annually to introduce the public to environment-related issues. They have attracted interest from people of all ages and are a perfect opportunity to learn first-hand about Sony's environmental activities.
- ▶ Sony is running environmental courses, targeted mainly at elementary and junior high school students, that allow participants to conduct experiments with basic equipment to discover the scientific phenomena related to environmental issues. The courses are intended to highlight the ways in which Sony approaches various environmental challenges.

URL Sony Tower: <http://www.sonytower.com/>



Rooftop wind and solar power generators

▶ **Establishment of Natural Park in Sony Chemical Corporation, Neagari Site (Japan)**

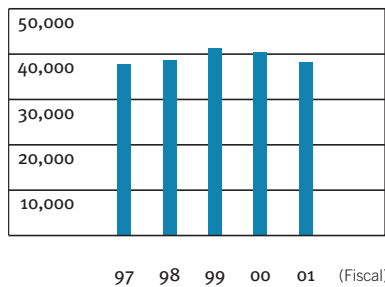
In October 2001, the Sony Chemical Corporation, Neagari Site was awarded the Chairman's Prize at the Green Factory Promotion event, sponsored by the Japan Greenery Research and Development Center. The award was in recognition of the company's landscaping program initiated in 1990. The main goal of the program has been to contribute to the local community by preserving and fostering the natural environment on plant property. In the year ended March 31, 2002, the Neagari Site initiated a new project, the Natural Park and Bird Sanctuary Lagoon Project, a Biotope (wildlife refuge) concept designed to release land to the local community. The park opened to the public in May 2002.

Global Warming

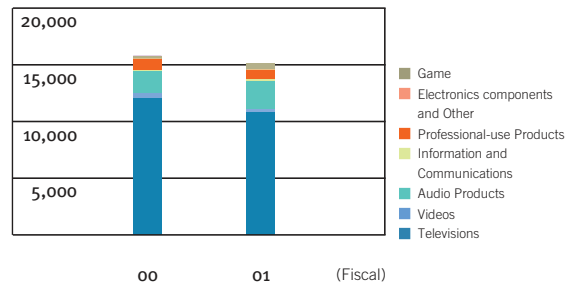
Sony has identified global warming and the accompanying climate changes as one of the most important global environmental challenges and is taking steps to reduce emissions of greenhouse gases generated by its business operations.

CO₂, PFCs and other greenhouse gases emitted during manufacturing processes are only part of Sony's focus. Sony also focuses on greenhouse gases, including CO₂, that are a byproduct of the energy consumed by customers when they use Sony products. Sony has created a special index for measuring the full scope of greenhouse gas emissions and improving the eco-efficiency of its operations (page 12). Specific remedial measures include reducing energy consumption in manufacturing processes, reducing PFCs and other greenhouse gas emissions, creating energy-conserving products and switching to renewable energy sources.

Energy Consumed by Sites
(unit: TJ)



CO₂ Emissions Accompanying Product Use
(unit: thousand ton-CO₂)



The total energy consumed by Sony sites in the year ended March 31, 2002, when converted to CO₂, comes to about 1,897 thousand tons. This amounts to a reduction of approximately 40 thousand tons from levels in the year ended March 31, 2001. It also means that at the end of the year ended March 31, 2002, Sony had achieved an approximate 5.5% reduction in CO₂ emissions, putting it well on the way to its Green Management 2005 target of a 15% reduction (in terms of sales units) set for the year ending March 31, 2006. Reductions of other types of greenhouse gases came to a total of around 64,000 tons on a CO₂ basis. CO₂ emissions from product use are estimated at about 15.09 million tons, a decrease of about 680,000 tons from the previous year. The use of electricity from wind power generators yielded a CO₂ emission reduction of about 750 tons. As a result, eco-efficiency in the year ended March 31, 2002 was 1.08 times that of the year ended March 31, 2001.

(page 12 for more information on eco-efficiency)
(page 49 to 55 for more information on environmental data)

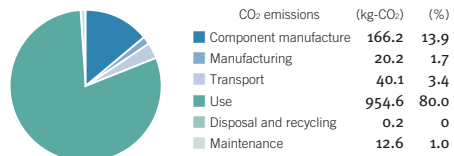
Developments in Product Design and Procurement Introduction of the Life Cycle Assessment (LCA)

Sony introduced the product assessment system at the product planning and design stages to create products that are more environmentally conscious. Efforts so far have concentrated on designing products that are smaller, lighter and consume less power. Ultimately, however, there are physical limits to the reductions that can be made in these areas. Sony has broadened its focus to encompass the entire product life cycle, from design and production through sales, use, disposal and recycling, as calls increase for products with minimal environmental impact.

Life cycle assessment (LCA) offers a way to conduct an objective and quantitative evaluation of products' CO₂ emissions and the impact they have on the environment over the course of their life cycles. LCA results are applied to develop strategies to lower that impact.

Sony began trial application of the LCA system to professional-use products, recording media and televisions in the year ended March 31, 2002.

Example of LCA Assessment DSR-2000 (Professional-use VCR)



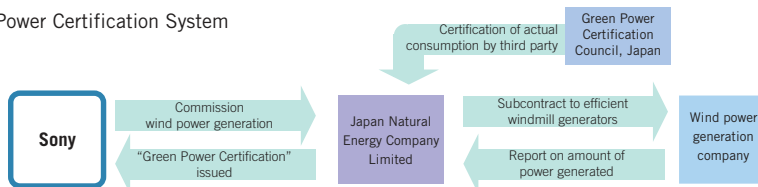
▶ **Introducing Renewable Energy Sources**

▶ **Green Power Certification System**

Under the Green Power Certification System, customers pay a surcharge to receive power generated from such renewable sources as wind and receive “Green Power Certification” to attest that they purchased renewable energy. Sony chose this system as a way of promoting wind power generation, which is often not feasible at locations where the power is actually used. In September 2001, the Choshi-Byobugaura Wind Power Station, from which Sony purchases electricity, commenced operations. Sony purchased 2 million kWh of electricity in the year ended March 31, 2002, which had the effect of cutting CO₂ emissions by about 750 tons compared with traditional power sources.

Part of this “Green Power Certification” certified electricity is used to power the Sony Tower in Japan almost in its entirety. Solar power generators supply the remainder of the electricity used by this building. (page 28 for the Sony Tower)

Green Power Certification System



▶ **Solar Power Generation at Sony Chemicals Corporation, Kanuma Site**

The No. 3 Plant of Sony Chemicals Corporation in Kanuma uses a solar power generation system. This system, which came on line in February 2000, provides a long-term supply of renewable energy with no CO₂ emissions. In the year ended March 31, 2002, its first full year of operation, the system generated roughly 83,000 kWh of electric power, about 4% of the factory’s annual power requirements. Power output of this scale translates to a reduction in CO₂ emissions of approximately 30 tons.

▶ **Developments in Sony Site Processes**

▶ **Introducing New Equipment to Conserve Energy**

Sony Music Manufacturing Inc. selected energy-efficient electrical disk manufacturing machines rather than the traditional hydraulic type. This action yielded a 7.7% year-on-year reduction in CO₂ emissions in the year ended March 31, 2002. Sony EMCS Corporation, Kohda TEC (Japan) has installed a co-generation system configured around a natural gas-powered engine and super-efficient heat pumps. The new system reduced CO₂ emissions in the year ended March 31, 2002 by 20%, compared with the previous year, as measured in terms of sales units.

▶ **Efficiently Using Existing Equipment to Conserve Energy**

The Sony Semiconductor Kyusyu Co., Kokubu Technology Center (Japan) succeeded in lowering power consumption by 2.3 million kWh by upgrading the water pumps that supply the purified water so important to semiconductor production. Sony Display Device (Singapore), meanwhile, launched a drive to reduce energy consumption by forming Energy Conservation Workgroups, which draw their membership from all departments and divisions. Their diligent efforts were rewarded with an approximate 14% drop in energy consumption from the previous year. Moreover, the entire staff of Sony Electronics Inc. (The United States) responded to the California energy crisis with an intensive energy-conservation program. Room and hallway lights were dimmed, air-conditioning temperature settings raised, and power-regulating circuits were installed in aging production equipment.

▶ **Eco-Conscious Staff Commuting Program**

Sony EMCS Corporation, Ichinomiya TEC (Japan) held company-wide energy conservation days three times during the year ended March 31, 2002—employees were encouraged to leave their cars at home and leave work at a set time. The third of three these days resulted in a 1.4-ton reduction in CO₂ emissions as 200 fewer cars were brought to work. Sony EMCS, Saitama TEC (Japan) has seized the initiative and introduced a natural gas powered eco-bus to transport employees. Natural gas has a very low impact on the environment.



This natural gas powered eco-bus shuttles workers back and forth.

▶ Efforts Being Made in Sales and Logistics

▶ Moving Ahead With the Modal Shift Plan

Sony Logistics Co., responsible for Sony distribution activities in Japan, has introduced several key conservation measures in transportation as part of new modal shift plan that carefully balances demand for materials with lead times and cost factors. The plan involves switching from trucks to more ecologically sound rail and marine transport along major cargo routes. The focus of the modal shift plan was expanded during the year ended March 31, 2002 to cover wider areas in both the Kanto and Chubu regions. As part of a joint distribution initiative, Sony Logistics is continuing its policy, launched in the previous fiscal year, of sharing transport containers with Toshiba Logistics Corporation. The containers Sony Logistics uses to send batteries, tapes and radio cassette decks to Osaka from Tokyo return loaded with Toshiba Corporation refrigerators.

In August 2001, Sony Logistics Europe B.V. introduced a modal shift plan of its own, which involves switching from trucks to barges and canals for transporting containers over the 107km distance from the port of Rotterdam to company warehouses further inland.

The modal shift succeeded in increasing the volume of cargo transported by rail and marine transport by 50%, to 18,000 tons, in the year ended March 31, 2002. This reduction in truck transport is expected to benefit the environment by eliminating emissions equivalent to approximately 5,600 tons of CO₂.

▶ Sony Marketing Discovers the Mobile Phone iMode as a Sales Support Tool

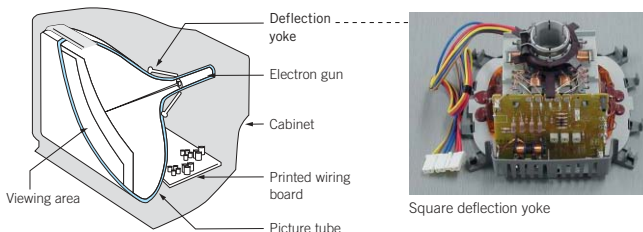
Starting in June 2001, Sony Marketing (Japan) Inc. initiated a program to use mobile phones to improve the efficiency of its sales and marketing activities. The new eMouse sales support system allows the user to instantly check on available inventory and any relevant sales data. Eliminating special trips back to the office saves precious time and helps reduce impact on the environment.

▶ Research and Development Focused on Energy Conservation

▶ Square Deflection Yokes in 36-Inch Televisions

The deflection yoke is a critical television component that generates a magnetic field used to direct electron beams within a picture tube so as to create a picture. By using a square instead of circular yoke, Sony has placed the yoke closer to the electron beam, thereby controlling the beam more efficiently. This small-size yoke also weighs 15% less and is already used in a number of Sony television models. A newly developed square yoke has reduced power consumption in the deflection circuitry by 32%. A 36-inch television incorporating the new yoke is to go on sale in Japan in the summer of 2002.

Inside a Television

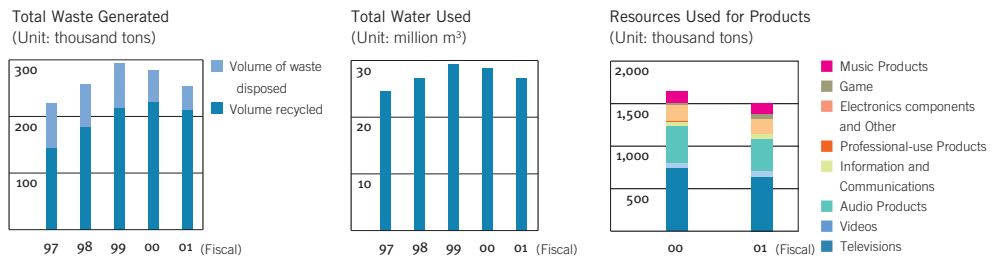


Resource Conservation and Recycling

Sony is dedicated to efficiently using and recycling the Earth's limited resources wherever possible. The Sony Environmental Vision promises to minimize environmental impact over the life cycle of products, beginning with the design, procurement, manufacturing and distribution stages and continuing through the product-use, disposal and recycling stages. To be better prepared for its role in building the recycling-oriented society of the future, Sony has created the Resource Input Index and the Resource Output Index to use as yardsticks in its efforts to increase eco-efficiency. Efforts to reduce the volume of resources used include working to produce smaller and lighter products and to reduce the number of components at the design stage. Measures to promote the cyclical use of resources will focus on increasing use of renewable natural materials with the emphasis on recycled materials and vegetable-based materials. Product packaging materials, so often simply discarded after purchase, have been identified as another high-priority area. Under the leadership of the Sony Environmental Conservation Committee, a company-wide initiative has been launched to reduce the use of polystyrene foam and to adopt a more environmentally conscious approach to packaging materials. This initiative is embodied in the 4 Rs (*1) approach.

In line with the zero landfill waste (*2) initiative, Sony sites focus mainly on reducing waste output and recycling more materials to minimize the burden on landfills.

Sony initiatives for collecting, reusing and recycling the products it makes are being implemented in ways appropriate to the differing recycling conditions in each country. Following on the heels of legislation recently introduced in some countries in Europe, Japan introduced the Law for Recycling Specified Kinds of Home Appliances in April 2001. Of the four products covered by the law, Sony already has in place a fully developed program for recycling televisions.



Total waste generated by Sony sites in terms of sales units declined by about 11.9% to approximately 257,000 tons compared with the year ended March 31, 2001. During the same period, the recycling rate of waste increased from 80.3% to 82.4%, while 11 more Sony manufacturing sites achieved zero landfill waste (*2) status, bringing the total to 35.

The biggest decline in resource use for products came in televisions and audio products. Total resources use for products declined by approximately 8.2%, or roughly 1,500,000 tons. The total volume by weight of Sony televisions collected and recycled in accordance with the Law for Recycling Specified Kinds of Home Appliances came to around 8,851 tons.

The cumulative results of efforts in the year ended March 31, 2002 to reduce impact on the environment succeeded in improving eco-efficiency by 1.13, compared with the year ended March 31, 2001, for both the Resource Input Index and the Resource Output Index.

*1: The 4 Rs approach: Reduce the volume of materials used, Reuse existing products, Recycle product materials, and Replace, where applicable, existing materials with ones that have less impact on the environment or have an established recycle system.

*2: Zero landfill waste: Defined by Sony as reusing, recycling and otherwise reducing 95% of waste generated.

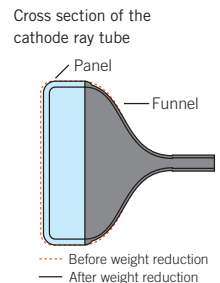
() page 12 for eco-efficiency

() pages 49 to 55 for more information on environmental data

► Developments in Design and Procurement

► Reducing Weight of Glass Used in CRTs

Glass accounts for between 70% and 80% of the weight of cathode ray tubes (CRTs) used in computer monitors. The key to resource conservation lies in reducing the volume of glass by optimizing tube shape and using thinner glass. Sony has succeeded in lowering the weight of the front panel glass by 5% and funnel by 10%. The weight of lead used to prevent the leakage of x-rays was also cut by 10%, resulting in significant resource conservation and reductions in hazardous materials.



► Waste Plastic Used for Television Speaker Boxes

Sony Electronics Inc. (The United States) has begun employing recycled waste plastic materials for making speaker boxes for television sets. The company now uses approximately 3,000 tons of recycled waste plastic per year that would otherwise have gone into landfills. Sony Electronics has already received several awards for its efforts from environment associations.

▶ **Reduce Use of Polystyrene Foam**

Sony is striving to use less polystyrene foam, which is made from petroleum, by using paper-based packaging materials such as pulp mold, cardboard and limonene recycled cushions. In Japan, new TV models of 25-inches or less employ paper-based cushioning materials. Since June 2000, TVs of 28-inches or more have been packaged in hexagonal cartons, which requires less packaging material. Existing rectangular cartons had left extra space around the rear of TV sets, requiring more packaging materials. By using hexagonal cartons that match the shape of TVs more closely, Sony reduced the volume of polystyrene foam and facilitated waste disposal. As of March 31, 2002, Sony was using hexagonal cartons for most large TVs sold in Japan. Consequently, the amount of polystyrene foam used per TV was reduced from 379 grams in 1998 to 155 grams in the year ended March 31, 2002, down by approximately 60%.

( page 25 for hexagonal cartons for TVs)

▶ **Packaging Materials Using Recycled Magazine Paper**

Sony sites in Japan produced a total of 16,000 tons of used paper in the year ended March 31, 2002. The recycling of certain types of used paper, including magazine paper, had been considered difficult. Sony, however, succeeded in setting up a system to recycle these forms of paper as packaging materials for its products. This system has led to a reduction in purchasing costs of new materials. In the year ended March 31, 2002, magazine paper was used in packaging materials for the BitPlay entertainment system, LCDs and printers. Sony also uses recycled magazine paper as packaging materials for recording media such as MDs. Sony has also set a company-wide policy to promote the use of non-bleached, non-de-inked and uncolored recycled magazine paper, and to print using only VOC-free vegetable oil based ink.



Packaging boxes made from recycled magazine paper.

▶ **Developments in Sony Site Processes**

▶ **Status on Achieving Zero Landfill Waste**

Sony achieved zero landfill waste at 35 manufacturing sites in the year ended March 31, 2002. The type of waste generated at sites depends on the type of product manufactured. Sony takes an individual, creative approach to waste reduction at each site. One noteworthy example was ST Liquid Crystal Display Corp., a joint venture with Toyota Industries Corporation which succeeded in improving the recycling ratio to 99%. This was accomplished by developing a process where by-products of the LCD manufacturing process, hydrofluoric acid and phosphoric acid, and residual exfoliation and developing fluid are converted into emulsion fuels* and sludge. Another example was the Omigawa plant at Sony Components Chiba Corporation in Japan, where a new bioremediation system for organic waste and sewage treatment successfully eliminated nearly 100% of the 100kg of organic waste (kitchen leftovers) produced daily. Another benefit was that processed wastewater has consistently maintained contaminant concentrations 20% lower than the standard limits set for release into the sewage system.

* Emulsion fuels: Emulsified fuels created by adding water and surfactants to waste oils.

▶ **Reduction in Water Used in Cleaning Processes for Ferrite Blocks**

Sony Precision Engineering Center (SPEC) is located in Singapore, a country where water is a precious commodity. SPEC has succeeded in reducing the amount of water used to clean ferrite blocks. An automatic washing device is used at the first stages of the cleaning of ferrite blocks. Within the washing device, water temperature must be strictly maintained at 35°C. SPEC carefully adjusted water levels, reducing flow from 5L to 1.5L per minute. At the same time, the water temperature-regulating thermostat was adjusted from 80°C to 50°C. These two changes enabled SPEC to reduced daily water use by 70%, from 7.2m³ to 2.16m³. Careful tests after the change confirmed that water temperature was being steadily maintained at the required temperature levels and that the cleaning effect was sufficient.

▶ **Efforts Being Made in Sales and Logistics**

▶ **Recycling of Pallets**

Sony Logistics Corporation (Japan) is actively engaged in recycling shipping materials. Sony Logistics recycled nearly 207 tons of wooden pallets and 194 tons of stretch film in the year ended March 31, 2002. The former was recycled into fuel chips and plywood board, and the latter into renewable fuels and imitation wood.

▶ **Product Recycling Efforts**

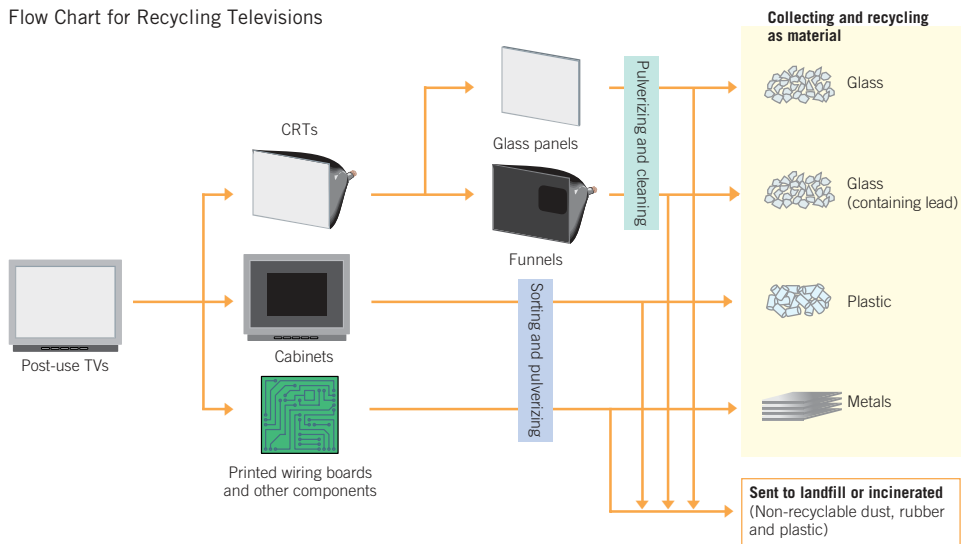
During the year ended March 31, 2002, approximately 13,000 tons of Sony products were recycled. Even when looking at recycling figures at the global level, consumer electronics products make up by far the largest share of recycled products. In Japan, approximately 340,000 Sony television sets, equivalent to 8,851 tons, were recycled during the year ended March 31, 2002.

▶ **Television Recycling and the Home Appliance Recycling Law**

Japan's Home Appliance Recycling Law, which contains provisions for recycling TVs, refrigerators, washing machines and air conditioners, took effect in April 2001. The law defines the shared responsibilities of consumers, retailers, local governments and home electronics manufacturers for taking back and recycling used products. The ultimate goal is to create a recycling-oriented society. Sony recycles TVs, its only product covered by the new law, at 14 recycling plants, including a recycling plant operated by Green Cycle Corporation, in which Sony is the principal shareholder. A number of these plants utilize the Sony-developed CRT disassembly line and waste plastic identification system to boost recycling efficiency.

The TVs that are taken back are disassembled and sorted into CRTs, cabinets and printed wiring boards. The CRTs are further disassembled and sorted according to type of glass panel and funnel. They are then pulverized and cleaned so that the glass can be reused. The plastic cabinets are sorted according to type of plastic, converted into chips and recycled for use as plastic (material recycling) or as fuel in what is referred to as thermal recycling. Fine particles that are left over from this operation are either sent to a landfill or incinerated. A total of approximately 340,000 Sony televisions were collected and recycled in the year ended March 31, 2002, and Sony was able to effectively reuse approximately 7,106 tons of recovered material.

Flow Chart for Recycling Televisions



▶ **Environmental Conservation Benefit of Recycling Televisions**

Used TVs have traditionally either gone into landfill, or have been collected only for the purpose of recovering metallic components. On average, a TV will yield no more than about 2 kg of recyclable metals. In accordance with the Home Appliance Recycling Law, Sony is recycling 15.9 kg of glass, 1.7 kg of plastics, 2.1 kg of metal and 1.4 kg of printed wiring boards and other materials from an average TV. This represents 21.1 kg of materials that no longer takes up space in a landfill. The Home Appliance Law mandates that 55% of a product must be reused in some form. This ratio has now reached 78% for TVs at Sony. Customers pay a fee of ¥2,700 per TV to have their TVs collected and recycled.

Environmental Conservation Benefit under Home Appliance Recycling Law (Sony television sets)

| | Material | Average per television (kg) | Amount recycled during fiscal 2001 (tons) |
|---------------------------|-------------------------------|-----------------------------|---|
| Recovery and recycling | Glass | 15.9 | 5,355 |
| | Plastic | 1.7 | 575 |
| | Metal | 2.1 | 704 |
| | Printed wiring boards, others | 1.4 | 471 |
| | Total | 21.1 | 7,106 |
| Landfill and incineration | | 5.2 | 1,745 |
| Total | | 26.3 | 8,851 |

Represents 336,791 recycled TVs.

* Recycling is defined as returning materials to a state in which they can be directly reused, whether sold or given away at no cost, and recycled materials in a state in which they can be effectively used as a resource. (This definition differs from the Home Appliance Recycling Law, which bases its product recycling rate on materials that can be sold to others.)

► Recycling Activities in Europe

A number of European countries have passed laws mandating the recycling of end-of-life home appliances. In accordance with these laws in Belgium, Sweden, the Netherlands, Norway and Switzerland, organizations that perform recycling operations on behalf of Sony and other manufacturers are beginning to emerge. In 2000, Sony paid approximately 5.8 million euros throughout Europe for recycling services. In the Netherlands, for example, Sony has been covering the cost of recycling home electronic products. In 2000, Sony's contribution was about 21% of the total cost for consumer electronics goods recycled in the Netherlands.

► Recycling Activities in the U.S.

Under the "We Make It, We Take It." campaign, Sony Electronics Inc. (The United States) has been conducting a collection system for end-of-life electronics products in Minnesota and Connecticut.

► Limonene Recycling System

In 1991, Sony developed a procedure for recycling polystyrene foam using limonene, an oil obtained from citrus fruit peels. The system is so effective that the recovered polystyrene is almost as good as new. Limonene is capable of reducing polystyrene foam cartons and packaging materials to 1/50 or 1/100 of their original volume. The mixture is then sent to a facility where limonene is separated from the polystyrene. Both substances can be reused. Another advantage is much lower transportation costs because the density of the recovered polystyrene is so much greater than in its original, foamed state.

The Sony Group began full-fledged, in-house limonene recycling of polystyrene foam in 1999. At present, the group recycles approximately 10 tons of used polystyrene foam each month. In the year ended March 31, 2002, about 124 tons of polystyrene was recycled. To encourage the widespread use of this recycling system, Sony licenses this technology to other companies. As of March 2002, there were three licensed facilities in Japan using limonene to recycle polystyrene foam.

▶ **Research and Development Focused on Resource Conservation**

▶ **Vegetable-based Plastic**

Vegetable-based plastic made from cornstarch made its debut as the wrapping film for the five-disc “Neige” package of mini discs (MDs) in autumn 2000. Because it is made from a biodegradable material that contains no petroleum products, a non-renewable resource, this kind of plastic is safe to put in landfills. It simply breaks down into water and carbon dioxide. Sony plans to expand its use of vegetable-based plastic in 2002. Applications include packaging material for portable radios and possibly in the enclosures for the “Walkman” and other products.



Packaging materials made of vegetable-based plastic.

▶ **Recycling Professional-use Videocassettes**

Sony has succeeded in developing a new technology that makes it possible to recycle professional-use videocassettes for the broadcasting industry. Videocassettes collected from TV stations are converted into pellets and blended with the original plastic material. In general, no more than 30% recycled material has been used in such blends, since a higher proportion lowers the strength of the resin. However, Sony has developed a new blending technology that can, with the help of special additives, restore the strength of the recycled plastic material to almost that of the original plastic material. This allows a composition of up to 85% recycled plastic without affecting the strength of the blended material.

▶ **Using Coffee Grounds as an Electrode Material**

Sony is currently developing process technology for mass-producing rechargeable lithium ion batteries with anode materials made of coffee grounds. Until now, anodes materials have been made mainly from carbonized plastic derived from petroleum products. The commercial application of this new technology will facilitate a shift to using recyclable resources for anode materials. Coffee grounds are usually discarded by producers of canned coffee beverages. The use of bacterial fermentation and natural carbonation for processing the discarded coffee beans also promises to reduce the energy required to produce the material.

▶ **Development of e-paper**

e-paper is a sheet-like display material capable of generating text and pictures like a personal computer monitor. Because of its potential to replace printed materials, which are produced in vast quantities today, this material is now the subject of intense research around the world. Sony is currently focusing on the electro-deposition display (EDD) technique to develop an e-paper that will be as easy, if not easier, to read than normal paper. Should practical application prove feasible, e-paper may one day be used as a substitute for newspapers, posters, notebooks and other paper-based products. This would significantly conserve resources and reduce the environmental impact of printed media.



e-paper (prototype)

Chemical Substances and Environmental Risk

As part of its environmental vision, tireless efforts are made to find substitutes for potentially hazardous materials, including environmental endocrine disruptors, and to reduce the use and emissions of such substances. In addition, Sony has put in place global environmental and occupational health and safety risk management systems to prevent the occurrence of accidents that could adversely affect people or the ecosystem.

In line with Green Management 2005, Sony has set restrictions and reduction targets for hazardous materials used in production processes and products. Sony classifies chemicals used in production into four categories according to the degree of danger they pose to people and the environment: Class I substances are prohibited, Class II substances are being phased out, Class III substances are to be reduced, and Class IV substances are controlled. This provides clear goals for each category for management in accordance with PRTR guidelines. When designing products, targets have been established for the elimination or reduction in use of substances that could harm the environment if not disposed of properly. This program mainly applies to heavy metals such as lead, mercury and cadmium and halogen-based compounds.

(☞ page 18 for environmental incidents)

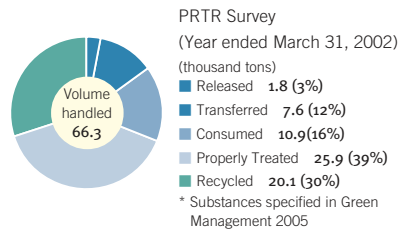
(☞ pages 15 and 53 for more information on chemicals that were used during the year ended March 31, 2002)

(☞ page 53 for description of categories of Class I to Class IV substances)

Chemicals Used by the Sony Group
(Year ended March 31, 2001)

| Chemicals | | Amount Used |
|----------------------|------------|-------------|
| Class I Substances | Prohibited | 0.26 tons |
| Class II Substances | Phased out | 468 tons |
| Class III Substances | Reduced | 19,212 tons |
| Class IV Substances | Controlled | 26,627 tons |

* The amount used is calculated as the amount purchased minus the recycled amount that was sold.



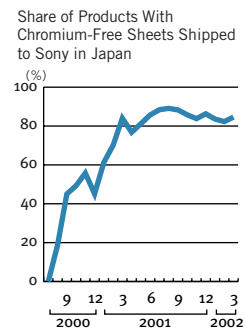
▶ Developments in Design and Procurement

▶ Introduction of Lead-Free Solder

Lead used in soldering materials can contaminate groundwater and cause other forms of environmental pollution if improperly disposed. Recognizing the environmental problem, Europe is on threshold of enacting regulations governing the use of heavy metals, including lead. Sony has set the goal of eliminating lead from products, with the exception of some applications, by the end of the year ending March 31, 2005. To reduce the amount of lead used in products, Sony is pushing ahead with the introduction of lead-free solder, comprised of tin and silver; a tin and zinc combination has also been formulated. Sony was using lead-free solder mainly in televisions, audio products, recording media and mobile phones produced in Japan and elsewhere in Asia as of March 31, 2002.

▶ Converting to Chromium-Free Galvanized Steel Sheet

The base plates and the structural chassis of many types of audiovisual products have been made of galvanized steel sheets. Traditionally, however, the surfaces of galvanized steel sheets have been treated with trace quantities of chromium VI as a rust prevention measure. To safeguard the environment, Sony launched a program in August 2000 to switch over from a chrome-plated to a new chrome-free type sheet in successive, graduated stages. As of March 31, 2002, approximately 85% of galvanized sheeting used by Sony in Japan was chrome-free.



* Galvanized steel sheeting purchased in bulk by Sony.

▶ **Reducing Use of Polyvinyl Chloride (PVC)**

Polyvinyl chloride (PVC) is used in a broad spectrum of applications, chiefly because of its excellent flame retardant and insulating properties. However, Sony has launched a program to totally eliminate this material from its products by the year ending March 31, 2005. This action is being taken out of concerns over the potential danger to the environment when waste PVC is not properly handled. Plasticizers used in polyvinyl chloride also pose risks. PVC has now been virtually eliminated from use in mechanical components and packaging materials. Sony is tackling the difficult challenge of finding a substitute for PVC in cables. PVC-free materials have been developed for headphone and remote control cables in some MD Walkman models and the headphone cables in some CLIE handheld terminals.

(☰ page 25 for MD Walkman reduced PVC material use.)

▶ **Developments in Sony Site Processes**

▶ **PRTR**

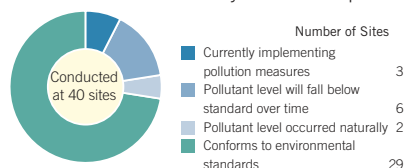
The Pollutant Release and Transfer Register (PRTR) is an environmental database or inventory of substances potentially harmful when released into the air, soil or water as well as of potentially harmful waste transported off site for treatment and disposal. This is a system designed to comprehensively manage chemicals and provide risk information. PRTR guidelines are currently being implemented in OECD countries. Sony is monitoring and managing chemicals based on its own guidelines. While other Asian countries have yet to introduce similar PRTR legislation, Sony has completed the introduction and operation of PRTR guidelines on its own at all 17 of its Asian manufacturing sites to monitor the releases and transfers of chemicals.

▶ **Results of Groundwater Surveys at Sites in Japan**

During 2001, a total of 40 manufacturing sites and technology centers conducted groundwater surveys. Survey results revealed the presence of hazardous materials exceeding groundwater standards at 11 sites. The results were reported to local authorities and further investigation revealed that Sony was the source of hazardous materials in three out of the 11 cases. Measures are now being taken in each of these three locations.

(☰ page 18 for more information on the topic)

Results of Groundwater Surveys at Sites in Japan



▶ **Complying With Revised Environmental Risk Management Guidelines**

Sony's response to the results of the foregoing pollution surveys was to make extensive revisions to the Environmental Risk Management Guidelines. Sony is now conducting environmental risk management audits and making improvements at existing facilities. The principal measures at manufacturing sites in Japan are described below.

Drilling of observation wells: Observation wells are being drilled where there is an upward or downward flow of groundwater in the vicinity of chemical storage tanks and other locations where regarded as necessary. Tests of groundwater are conducted on an annual or semi-annual basis.

Water quality monitoring: Water quality sensors have been placed immediately before the shut-off valves of the final water outlets at Sony facilities in order to measure pH levels in treated waste water.

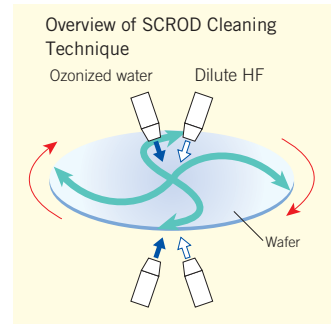
Moving underground tanks above ground: Due to the difficulty in detecting leakage of chemicals when cracks occur in underground tanks, these tanks are being moved above ground in accordance with a plan.

▶ **Reduction in Organic Solvent Use at Sony Miyagi Co. (Japan)**

Magnetic tape production processes employ organic solvents, a substance whose volatile nature makes it an atmospheric pollutant. In order to minimize releases of these solvents, Sony Miyagi installed an energy-efficient solvent recovery unit employing a new type of absorbing agent at its Tagajo site. The result has been an improvement in the solvent recovery ratio from 95% to 99.5%. The introduction of a new solvent management system further reduces environmental risk. This system effectively reduces the volume of solvents that needs to be stored in underground tanks from 180 to only 15 kiloliters, one-twelfth the original amount.

▶ **Reducing Use of Wafer Cleaning Solution**

Cleansing semiconductor wafers normally accounts for between 30% and 40% of all processes required to manufacture semiconductors. Large volumes of cleaning solution and pure water are required. Sony recently succeeded in developing a new technique that eliminates the need to submerge wafers in a cleaning solution. Referred to as SCROD, which stands for Single-wafer Spin Cleaning with Repetitive use of Ozonized water and Diluted HF, it involves spraying droplets of ozonized water and diluted HF on a spinning wafer. Centrifugal force is then employed to quickly and efficiently clean the wafer's surface. SCROD cuts water consumption to 1/25th that of conventional cleaning methods and cleaning solution utilization to 1/40th of the previous level. It also significantly reduces the volume of waste fluids produced during the cleaning process. The SCROD technique is being used at the semiconductor plants of Sony Computer Entertainment Inc., Fab1 and Fab2, and at the Kumamoto Technology Center of Sony Semiconductor Kyusyu.



▶ **Efforts Being Made in Sales and Logistics**

▶ **Finding Substitutes for Polyvinyl Chloride (PVC)**

Sony has taken steps to switch to non-crystalline co-polyester instead of the polyvinyl chloride (PVC) traditionally used for credit and e-money cards. It is now being used for the chlorine-free My Sony Card issued by Sony Finance International, Inc. (Japan) that features e-money and credit card functions. An initiative introduced by Sony Marketing (Japan) Inc. completely eliminated PVC in the product display stands, carts, sales promotion tools and other materials used at stores in fiscal 2001 by using materials such as paper and cardboard.



A My Sony Card made from non-crystalline co-polyester.

▶ **Research and Development Focused on Reducing Use of Chemical Substances**

▶ **Development and Application of Low-Melting Point Lead-Free Solder**

A solder composed of tin and silver has been the most widely used substitute for lead-based solder in high-volume applications. Its comparatively high melting point (approximately 220°C vs. 183°C for lead-based solder), however, makes it necessary to update reflow ovens. Furthermore, this solder can only be used with highly heat-resistant components. Through its work with Nihon Genma Mfg. Co. Ltd., Sony succeeded in developing a lead-free solder with a low melting point, permitting its use under about the same conditions as lead-based solder. The new tin-zinc solder (melting point of 196°C) can be used with an atmospheric reflow oven. This new solder is already being used in the manufacture of printed wiring boards for lithium-ion battery packs.

* Atmospheric Reflow: Unlike in nitrogen reflow ovens, this method employs atmospheric air. The reflow soldering process involves applying a solder paste to the printed wiring board and heating it to harden the solder.

▶ **Extending the Life of Chemical Solutions Used in Semiconductor Manufacturing Processes**

Semiconductor manufacturing processes require large volumes of a variety of chemical solutions. BHF, or buffered hydrofluoric acid, is used in the semiconductor wafer etching and cleaning processes. The unstable nature of BHF causes it to change chemically over time, making it difficult to use for extended periods. After extensive research, Sony devised a technique that extends the life of BHF theoretically by up to 10 times. This is done by adding the required amount of an aqueous ammonia solution. Sony hopes this technique will significantly cut the volume of BHF solution required, as well as greatly reduce the large volumes of sludge and wastewater generated when treating waste BHF.

▶ **New Photoresist Reduces Organic Solvent Volume by 90%**

Sony Chemicals Corporation and Nippon Paint Co., Ltd. have succeeded in developing a new photoresist material that reduces the required volume of volatile organic solvents by 90%. This technique reduces the minute quantity of halogen, a possible source of dioxins, contained in color pigments by 90% as well. Developed for the manufacture of printed wiring boards in electronic devices, the new photoresist material also features a shorter drying time. Development is continuing on ways to employ this new material in mass production.

Sony and the People

From its inception, Sony has constantly created markets and proposed new lifestyles.

Our mission is to offer the opportunity to create and fulfill dreams to all kinds of people, including shareholders, customers, employees, and business partners. We pledge to continue to take on the challenge of preserving Sony's position as a unique and creative company.



Customers

Customer satisfaction (CS) is at the core of Sony's operations. Our customers always expect the best from Sony. The greater the expectations, the harder they are to fulfill. To ensure that we meet those expectations, Sony is working across the board to garner the satisfaction, trust and confidence of its customers.

In 2001, Sony's CS Charter was introduced to enhance customer satisfaction and to foster greater awareness of this important issue within our organization.



The CS Charter



CS Campaign (CS21)

▶ Customer Satisfaction is Sony's Corporate Culture

All employees, not just those in direct contact with the customer, need to be aware of customer satisfaction (CS) issues. Wherever they work in the Sony organization, whether it be product development, design, manufacturing or marketing, employees have to make CS their number one priority. Keeping the customer's perspective foremost in mind, it is imperative that each and every Sony employee meets the high expectations of Sony customers. To ensure that this approach becomes ingrained across the whole Sony Group, regardless of organization or business field, Sony has launched a Customer Satisfaction Campaign (CS21). The ultimate goal is to make CS a cornerstone of Sony's corporate culture.

▶ Sony's Global Repair Network

Sony's repair and servicing network spans the globe, with bases in approximately 8,000 locations. Although shipments of consumer electronics products have risen in recent years, the number of products actually being repaired is falling. In the year ended March 31, 2002, repairs declined by around 10% from the preceding year. One clear trend is that fewer products are being repaired outside the warranty period in the Japanese, North American and European markets. Sony believes that this is due to major improvements in product quality and lower product prices which makes repair costs seem comparatively expensive. Cheaper products mean that customers perceive repair costs as being prohibitively high relative to the original purchase price. To address this and other issues, Sony is working to build a repair and servicing system that better meets the needs of each customer and ensures customer satisfaction.

▶ Trends in Customer Inquiries

In 1963, Sony established a Customer Information Center in Japan to provide timely and appropriate responses to customer inquiries. These inquiries are shared throughout Sony, as they constitute a valuable source of feedback on its products. The success of the system paved the way for customer information centers to be set up at Sony sales subsidiaries worldwide. In the year ended March 31, 2002 alone, there were around 12 million customer inquiries to Sony in the Japanese, North American and European markets. The number of inquiries has been growing in recent years and is expected to rise further as electronic components become more technologically advanced and complex. Sony is currently enhancing its ability to rapidly respond to this growing demand by putting in place a customer response system that makes use of IT tools such as the Internet.

▶ **Quality Assurance Issues**

A number of quality-related issues occurred in 2001, leading Sony to voluntarily recall some of its products. Sony followed up with the launch of a quality management review project, and is now focusing on intensive efforts to rebuild its quality assurance system and improve product quality.

One example of the quality assurance issues Sony faced during the year was a problem involving the overheating of mobile phone battery packs. The excess heat deformed the battery pack casings of certain mobile phones on the market. After investigating the problem, the cause was found to be flecks of solder adhering to the battery pack during the assembly process. Sony's response was to voluntarily recall and replace all battery packs, free of charge, in order to prevent similar incidents. Further steps included improvements to the soldering process and the setting up of a new inspection process.

Shareholders


The Sony management team recognizes the importance of corporate accountability as part of its mission to maximize shareholder value. Sony's policy is to disclose positive and negative news promptly, fairly and regularly to institutional and individual investors and industry analysts throughout the world.

▶ **Disclosure and Investor Relations**

Sony discloses not only earnings releases, but also information required by potential investors and analysts to make informed investment decisions. As such, Sony is committed to timely disclosure. The company regards annual reports and company websites as effective channels for providing such information. Sony is implementing ongoing improvements to these sources to make them easier to understand.

Investors are given a say in management decisions through a feedback system in which the views and suggestions of investors and analysts are brought to the attention of Sony management. Sony has also introduced measures to link management performance to remuneration. These measures, which include granting stock options to directors and upper-level management and applying economic value-added (EVA®)* methodology to evaluate the performance of individual business units, are just some of the ways in which management is encouraged to approach issues from the viewpoint of investors.

* EVA® is a registered trademark of Stern Stewart & Co.

For more information  <http://www.sony.co.jp/en/SonyInfo/IR/index.html>

▶ **Sony Corporation Shareholder Meetings**

Sony regards shareholder meetings as an important forum for direct communication with shareholders. As part of a program to maintain close communication with shareholders, an informal shareholder discussion session is held after each general meeting to give shareholders an additional opportunity to freely ask questions. In order to ensure that shareholders, including the large contingent of overseas investors (38.7% of the total as of March 31, 2002), have a say in the decision-making process, Sony has taken a number of steps to promote the exercise of voting rights. These include the introduction of a system in June 2002 to enable shareholders to cast their votes over the Internet.

Employees—Equal Opportunity

Basic Policies and System

The cornerstone of Sony’s policy on recruitment and promotion is to not discriminate on the basis of race, gender or disability, or in any other way. Sony Corporation formulated a human rights policy in November 2000, recognizing that respect for human rights is a priority issue for all of humanity. In all spheres of activity, Sony is working to foster greater awareness of human rights. At Sony Europe GmbH, all forms of discrimination are strictly prohibited. Sony has put in place harassment guidelines addressing discrimination based on race, gender or disability and policies addressing equal opportunity employment. Sony Electronics Inc. (The United States) has a basic policy in respect to human resources, which is to prohibit all forms of discrimination, including harassment.

Promoting Employment for Physically and Mentally Challenged in Japan

In April 2002, Sony established a special-purpose subsidiary, Sony Hikari Corp., to provide employment opportunities to mentally challenged individuals who desire to enter the workforce. Sony Hikari is the second such company devoted to this purpose, following the establishment of Sony Taiyo Corporation in Oita Prefecture in 1978. Staffed by specially qualified instructors, Sony Hikari currently has 15 mentally challenged employees, each striving to develop individual abilities as a member of the Sony Group and society.

Sony Electronics Inc. (The United States) Employees Recognized for Second Straight Year

For the second consecutive year, a Sony employee has been named as one of ten “Employees of the Year” by *CAREERS & the disABLED*, a magazine dedicated to equal opportunity and employment for people with disabilities in the U.S. The award recognizes the contribution of employees with disabilities to enlightening both companies and society in general about the expertise, quality of work and the significant results achieved by people with disabilities. In 2001, the award went to Timothy Scarbeary, an Internet Product Specialist at Sony Electronics. Tim, who is confined to a wheelchair because of muscular dystrophy, helps raise money for young diabetics, on his own time. In 2002, Keith Seibert, a visually impaired member of Sony Electronics, was recognized for his achievements. And Sony Electronics was selected as one of the top 50 best companies for the disabled. This annual ranking is based on the number of votes cast by readers of *CAREERS & the disABLED*, who select companies they would most like to work for and companies they think offer a working environment suitable for the disabled.



The 2002 award winner Keith Seibert (left) seen here with Human Resources professional Anne Lloyd.

Gender-Neutral Employment

Sony’s human resources policies prohibit gender discrimination. The gender composition of the Sony workforce, however, has been a concern for some time. Thanks to improvements in labor practices and regulations relating to maternity and other issues (maternity leave and part-time working hours) over the last 10 years, we are gradually seeing a proportional increase in women working at the managerial level.

Breakdown of Sony Corporation’s Workforce
(As of March 31, 2002)

| | Male | Female |
|---|---------------|--------------|
| Management | 4,468 | 75 |
| Assistant manager level | 5,693 | 577 |
| General (excluding assistant manager level) | 2,843 | 3,434 |
| Total | 13,004 | 4,086 |

(Includes employees awaiting transfer, but excludes transferred employees)

Performance Appraisal & Career Development System

At the core of Sony Corporation’s approach to staff training is the belief that each employee be inspired to take on challenges and “seize the initiative in building a career.” Under Sony’s Performance Appraisal & Career Development system, employees are individually responsible for their goals and receive support from the company to map out a career plan. Employees and supervisors set goals together, and meet twice a year to review progress toward achieving them. Employees also prepare their own career plans, and receive advice from supervisors. Both goals and career plans are entered on a form online.

Job Posting System

Sony Corporation’s job posting system is designed to offer challenges to employees who wish to further their careers by finding jobs within the company that they feel best suit their experience and abilities. The system is designed to encourage employees to develop their talents and succeed in what they do. Jobs are advertised internally as openings become available.

Employees—Education, Training and Work Conditions

Sony is introducing innovative and unique forms of employee education and training.

▶ Sony University

The Sony University, a strategic arm of the Sony Group, is dedicated to identifying and fostering next-generation business leaders. A specially designed campus was completed in November 2001 and the University began by revamping the existing curriculum.

The University's mission is to foster and develop the abilities of individuals—who will play a prominent role in the company's future—by offering educational programs. Cutting across organizational boundaries, the university will also strengthen the overall cohesion of the Sony Group. Approximately 10 educational programs per year are being offered, and selected participants from Sony Group companies around the world participate in the program.

▶ e-learning: Campus Europe

Sony has established the Sony Campus Europe, an e-learning platform designed to enhance employee education by offering lifetime learning courses online. Ongoing education and self-development are essential to today's Sony employee. It is important for the company to train both general and management personnel in a wide range of areas so that they understand how to prioritize work and recognize levels of importance. Sony Campus Europe allows Sony employees to obtain the education and training they require when they are ready. Roughly 150 people have completed Sony Campus Europe training courses, while 325 are enrolled in current programs.



Sony Campus Europe Home Page

▶ The Learning Center

The Learning Center, part of Sony Electronics Inc. (The United States), offers an extensive list of courses for employees based on Sony methods that are geared to a broad range of educational needs. The faculty includes teaching staff from associate universities and corporate affiliates, as well as other Sony employees. The courses on offer include management and specialist training, cross-cultural exchange, computer training, Sony Six Sigma and EVA®. Teaching staff are stationed at three locations: San Diego, CA, San Jose, CA and Park Ridge, NJ.

▶ Flexible Working Hours and Conditions

In Japan, Sony has introduced a flex-time working system. This system allows employees the flexibility to configure working hours and conditions to fit with their individual needs and lifestyles. In addition, mandatory working hours have been eliminated for mid-level employees involved in research, development and design activities, who are expected to work under their own supervision and receive remuneration linked to results.

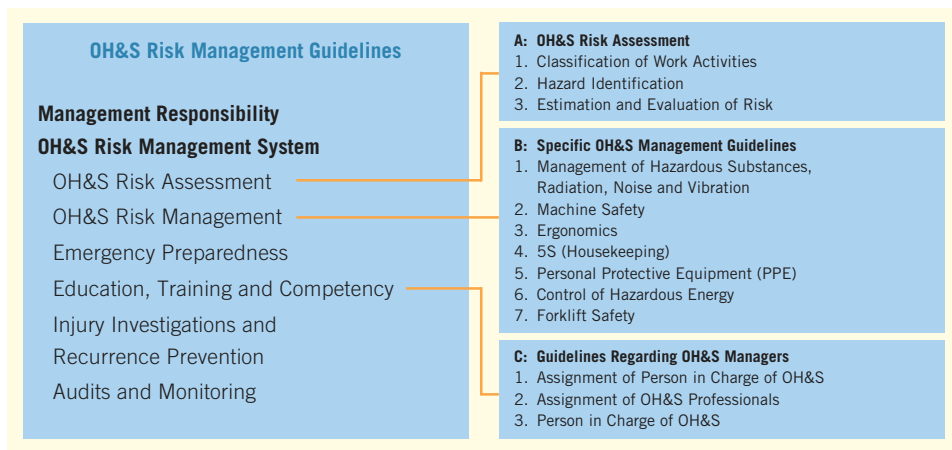
| Year Ended March 31, 2002 Beneficiaries | (Number of employees) |
|---|-----------------------|
| Leave of absence or shorter working hours for maternity reasons | 266 |
| Leave of absence or shorter working hours for nursing care activities | 9 |
| Leave of absence for volunteer activities | 1 |

Employees—Occupational Health & Safety Management

Sony's Global Policy on Occupational Health & Safety, adopted in 1998, designates occupational health & safety (OH&S) as an integral part of all Sony business operations. This policy obliges Sony global sites to implement OH&S activities over and above those required by law, and stipulates that OH&S activities be carried out in accordance with the Plan, Do, Check, Act (PDCA) cycle.

Implementing OH&S Risk Management Guidelines

OH&S Risk Management Guidelines were introduced to standardize OH&S management methods used at Sony Group sites worldwide. Based on a PDCA cycle-oriented management system and incorporating specific OH&S risk reduction methods, these guidelines are aimed at establishing minimum standards for OH&S management. This is expected to raise the level of OH&S at Sony facilities, especially in countries and regions where relevant legislation has not yet been put into place.



These guidelines are based on the principles of “Sony’s Environmental Vision” and “Sony’s Global Policy on Occupational Health & Safety” and focus specifically on risk management designed to prevent occupational injury and illness. The guidelines establish standard procedures for application at Sony operations worldwide, encompassing a wide range of areas, including chemical substance management, ergonomics and personal protective equipment (PPE). Ergonomics includes managing workplace environments and procedures to control the risk of ergonomically harmful practices—working in awkward postures, handling heavy objects, standing for long periods and performing repetitive tasks, as well as the prevention of eyestrain arising from extensive use of computer monitors. The guidelines target reductions in these kinds of specific risks associated with day-to-day operations at all Sony sites around the world.

URL <http://www.sony.net/eco/>

OH&S Activities in the Community

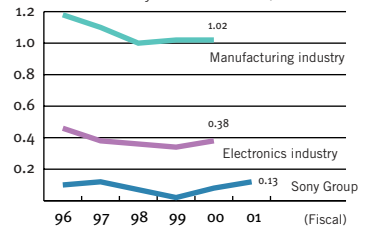
Sony’s Global Policy on Occupational Health & Safety encourages all Sony Group sites to actively participate in their respective national and regional health and safety programs. In keeping with this policy, Sony presented the risk assessment it performed when developing the AIBO entertainment robot to the National Industrial Safety and Health Convention, arranged by the Japan Industrial Health and Safety Association. (page 26 for product information for AIBO)

Collection and Disclosure of Injury Statistics

Sony will disclose injury statistics, a key performance indicator of OH&S management at its operations.

Injury Statistics (Japan)

(Incident rates for injuries resulting in the loss of 4 days or more of work)



The incident rate represents the work-related injuries in terms of the ratio of the number of injuries per one million work hours.

Incident rate = $\frac{\text{Number of injuries resulting in the loss of four days or more of work}}{\text{total working hours} \times 1,000,000}$

Communities

Sony is committed to enhancing relationships with communities as a good corporate citizen. Focused on educational programs for children, Sony is active in promoting the arts, culture, international exchanges and environmental activities. Sony is also making efforts toward providing physically and mentally challenged people with opportunities to develop their abilities and gain more independence.

Sony's community affairs program includes financial support as well as product donations, to respond to the needs of communities, building partnerships with non-profit organizations and sponsoring volunteer programs for Sony employees. Through these activities Sony aims to contribute to local communities as a truly global corporation.

▶ **SOMEONE NEEDS YOU**

The SOMEONE NEEDS YOU (SONY) program was launched in the U.S. to encourage Sony Group employees to participate in volunteer activities. During the year ended March 31, 2002 more than 14,500 Sony employees in 20 countries participated in program activities in their local communities. One of the projects in the U.S. involved Sony employees painting colorful murals on the wall of a shelter for abused children. Program activities in Europe included visiting homes for the elderly. In Japan and Asia, many companies held blood drives and cleaned up local communities.



A visit to a home for the elderly in Europe.

▶ **Partnership with NGOs**

International NGO FoE (Friend of the Earth) Japan and Sony affiliate All Inc. are collaborating on a program called "Be a friend of the Earth!", available only in Japanese, that broadcasts information on global environmental issues. All proceeds from the broadcasts are donated to FoE Japan. It is a user-oriented program that encourages people to participate in environmental protection activities over the Internet. Furthermore, Sony is a member of the Corporate Environmental Responsibility Group of Earthwatch Europe, an NGO dedicated to supplying both monetary and human resources to researchers involved in outdoor survey activities designed to protect natural and cultural resources and heritages. Earthwatch has sponsored over 1,600 natural and cultural heritage-related surveys in 111 countries since 1972.

▶ **Emergency Relief and Humanitarian Assistance**

The Sony Group responded immediately to provide various means of support to the victims of the Sept. 11 terrorist attacks in the United States. Sony Group employees contributed funds to assist and support the families of victims of the tragic events. Many Sony employees in the United States participated in various volunteer activities.

The Sony Group supports the resolution of refugee problems for humanitarian reasons. In that regard Sony contributed to the UNHCR as a way to offer humanitarian support for the many refugees who continue to seek assistance in the world today.

▶ **"ECOMove," the 1st International Festival of Environmental Film Festivals**

The ECOMove "Festivals of Festivals" took place at the Sony Center in Berlin, Germany in December 2001. Sony joined as cooperating partner to support this event. The aim of ECOMove, as a platform of Environmental Film Festivals, is to raise awareness of interrelated global and ecological issues. ECOMove encompasses a variety of events, including the screening of films about the environment, award ceremonies, workshops, exhibitions and panel discussions focusing on environmental communication issues, as well as corporate strategies and critical but constructive journalism.

Children

The 21st century has presented several broad challenges to humanity. One is improving the standard of living of people worldwide. Another is living in harmony with the Earth's natural environment. Education, particularly studies focused on the nature of humanity, will play an increasingly important role in resolving these issues.

Sony will continue to support a wide range of educational activities for children, our future. It is important to encourage children to think and act independently and to build character and enrich their creativity. At the same time, children should develop sympathy for others and social skills, by developing relationships with people from all walks of life. At the same time, children should be encouraged to explore nature and appreciate its beauty and wonder. Developing craftsmanship skills is also key to introducing children to the joy of seeing things through and creatively solving problems.

▶ The Sony Science Education Program for Children

In a prospectus drafted at the time of Sony's establishment, Sony founders Masaru Ibuka and Akio Morita wrote that one of primary goals of the company was to enhance scientific literacy among the Japanese people. They believed that introducing science education in elementary schools was key to rebuilding Japan in the aftermath of World War II. This belief was behind the establishment of the Sony Science Education Promotion Program in 1959. Thereafter, these activities were carried on by the Sony Foundation for Education, which has continued to offer financial support for schools and teachers over the ensuing 42 years.

In the year ended March 31, 2002 the Sony Science Education Program for Children was started to develop children's interest in science. The program supports elementary and junior high schools and teachers nationwide, especially those that are enthusiastically engaged in fostering interest in science among children. In the year ended March 31, 2002, 102 out of approximately 160 applicants received subsidies and computers. Schools that have been selected will present results of scientific educational programs at four locations nationwide.

▶ Sony Wonder-Science Laboratory

Held at Sony Group companies and elementary and junior high school nationwide, this program aims at providing children with the opportunity to actually create things and discover interesting natural phenomena in the process. We also hope to introduce children to the joy of making things. Specifically, the Sony Foundation for Education sends instructors to events, while Sony employees and local teachers run the program.

During the year ended March 31, 2002, 880 children participated in 19 workshops, where they built scientific toys and carried out interesting experiments.

▶ Educational Support Programs

In 2001, Sony began providing assistance for public elementary schools in the regional communities of Mexico. Support involves building computer classrooms, renovating school buildings, and providing desks, chairs and audio visual equipment. Thus far, Sony has assisted two public schools. In another program, Sony provided support for a project in South Africa called School TV Access, which is run by the South African Broadcasting Company, since its inception in 1999. Sony has contributed color televisions and videocassette recorders to 250 elementary schools over the past 3 years, to provide greater access to educational programs. In Europe, Sony has installed equipment at a recording studio operated by Benjamins Media in France, which provides cassette recordings of children's literature for children with visual disabilities. Sony is also assisting in public relations activities for the project.



Children at one of the participating schools study changes in wildlife at a local stream.



Possibly a future expert studying how to recycle polystyrene foam with limonene. ■■ page 35

▶ **Sony Creative Science Award**

This contest was started in 1998 to stimulate interest in science among Singaporean elementary school students, and to foster creativity. The contest involves toys that incorporate scientific principles, and draws in about 2,000 contestants from around 100 schools every year.

▶ **The Sony Cup Electronic Design Contest**

Held once every two years, Sony supports an electronic design contest aimed at promoting electronics education among college students in China. The students participate in the contest in teams of three, and design and create electronic circuits over a four-day period. In fiscal 2001, 2,071 teams of 6,213 students, representing 346 Chinese universities took part in the contest.



The award ceremony for the Sony Cup Electronics Design Contest.

▶ **Complimentary Gift of School Satchels**

Sony and certain group companies present the children of employees with the gift of a school satchel (or writing set) when they enter elementary school. This tradition dates back to 1958, only 13 years after the end of World War II, when ordinary Japanese people still struggled to make ends meet. Sony's co-founder Masaru Ibuka came up with the idea of giving school satchels to Sony employees' children when they enter elementary school. The goal was to celebrate the occasion, and also to help his employees economically. The year 2002 marked the 44th time the presentation was held. Sony gave gifts to 789 students this year, bringing the total presented so far to 20,448.



Masaru Ibuka presents a school satchel (circa 1960).

Data Section

Data: Statistical Perspective on Sony and the Environment

Sony collects environmental data from sites and business units worldwide according to various guidelines such as those for data collection and environmental accounting. It is then categorized, analyzed and processed. In this chapter, we explain Sony's approach to data presented in the Data Section of this report, as well as calculation methods. More detailed statistics and the latest data can be viewed online at [URL http://www.sony.net/eco/](http://www.sony.net/eco/)

Scope, Collection Period and Accuracy of Data

Data collection period: From April 2001 to March 2002

- The data collection period for Sony sites outside Japan was the 11-month period from April 1, 2001 to February 28, 2002, with estimates provided for the remaining one month. For chemical substances, most data from Japanese sites was also gathered during the same 11-month period, with estimates provided for the remaining one month.
- The data collection period for certain data pertaining to greenhouse gases, excluding CO₂, was calendar 2001.
- The collection periods for some data for collected and recycled products in the Americas and Europe were also calendar 2001.

Scope of Data: Sites with ISO 14001 certification as of March 31, 2001

- Data was not gathered from some ISO 14001-certified sites. Data was accepted from certain non-ISO-certified sites that provide environmental data on a voluntary basis.

Data accuracy: The chemical substances and environmental cost data collected from certain sites may be slightly less accurate than others.

Sites with ISO 14001 Certification

- Generally, the number of sites listed represents those that have acquired certification or are eligible for future certification. The number of non-manufacturing sites in the U.S. represents those that have acquired ISO 14001 certification independently in order to reflect the actual status of environmental management activities. U.S. non-manufacturing sites include 73 sites certified collectively.
- Sites eligible for ISO 14001 certification, in principle, refer to sites that have been operating for at least two years, excluding sites that meet the conditions outlined below.
- Conditions: Hardware research, development and design sites, and distribution, warehouse and manufacturing sites with less than 50 employees; and hardware sales, software research, production and sales, mail-order sales, insurance and finance sites and sites that serve as corporate headquarters with less than 100 employees.

(■) page 17 for more information on ISO 14001 certification status)

(■) page 55 for a list of sites newly ISO 14001-certified in the year ended March 31, 2002)

Environmental Accounting

Sony uses environmental accounting to quantify the effect of its environmental activities. Sony studied the balance between environmental conservation cost for the year ended March 31, 2002 and reductions in environmental impact for the year in comparison with the previous year.

The result is effective for evaluating the environmental activities for the current year and can be applied to the planning of future environmental activities.

The environmental conservation effect is not limited to the direct impact of Sony business activities but includes the impact Sony products have on the environment while being used by the customer.

The cost of environmental conservation measures for the year ended March 31, 2002 came to about ¥4.2 billion in direct investment (¥5.5 billion in the previous fiscal year) and about ¥26.8 billion in expenses (¥22.7 billion in the previous fiscal year). Direct investment declined approximately ¥1.3 billion year on year, while expenses climbed about ¥4.1 billion. Sony placed curbs on direct investments due to the global economic downturn during the fiscal year. Higher expenses were mainly due to the increase in environmental remediation costs, which were ¥7.1 billion. These costs resulted from two factors: environmental incidents at sites and voluntary environmental surveys at other sites; and environmental incidents of some Sony products. (Table page 18 for more information on the environmental incidents).

The effect of environmental conservation activities was calculated by comparing environmental impact with the year ended March 31, 2001 levels. The amount of energy consumed during product use decreased by roughly the equivalent of 1.25 million tons-CO₂. Likewise, energy consumed during production and service activities was reduced to the equivalent of about 180,000 tons-CO₂. Sony also reduced product weight by about 180,000 tons. Waste generated was reduced by 12,000 tons, and water consumption decreased by 2.76 million m³. The volume of chemical substances used declined by 557 tons, while environmental risk management improved by 157 points. Converted to monetary terms, the total environmental conservation effect came to approximately ¥29.2 billion.

Environmental Conservation Costs (¥ Million)

| Category | Investment | Expenses | Main Activities | |
|--|--------------|---------------|--|-----------------------|
| Product design | 46 | 1,871 | Design of environmentally conscious products | |
| Product recycling cost | 0 | 295 | Collection and recycling of discarded home electronics goods, packaging materials and batteries | |
| Production and service activities cost | 2,250 | 5,129 | Pollution prevention | |
| | 1,601 | 5,223 | For reducing environmental impact | Breakdown of expenses |
| | | | Energy conservation and global warming measures | 1,190 |
| | | | Resource conservation and recycling measures | 3,118 |
| | | | Water resource measures | 302 |
| | | | Reduction of hazardous materials | 493 |
| 3 | 83 | Others | 120 | |
| Administrative costs | 205 | 5,192 | Green purchasing | |
| Administrative costs | 205 | 5,192 | For environmental promotion organizations within Sony and building and maintaining environmental management systems | |
| R&D costs | 62 | 1,637 | R&D focused on products and manufacturing technologies designed to reduce environmental impact | |
| Communication and Community relations activities | 14 | 246 | For site environmental reports and greenification as well as other community activities for environmental conservation | |
| Environmental remediation costs | 6 | 7,101 | For cleanup of soil contamination and other forms of environmental damage | |
| Total | 4,186 | 26,777 | | |

Environmental Conservation Effect

| Category | | Fiscal 2000 (Results) | Fiscal 2000 (Adjusted computed value) | Fiscal 2001 (Results) | Environmental Conservation Effect (Material volume base) | Monetary Conversion of Environmental Conservation Effect (¥ Million) |
|-----------------------|---|-----------------------|---------------------------------------|-----------------------|--|--|
| Greenhouse gases | During product use (CO ₂ conversion of energy consumed in product use) ton-CO ₂ | 15,772,350 | 16,340,371 | 15,093,758 | 1,246,613 | 3,865 |
| | During production and service activities (CO ₂ conversion of energy consumed by sites) ton-CO ₂ | 2,249,878 | 2,330,904 | 2,146,081 | 184,823 | 573 |
| Resource conservation | Product weight (Excluding those collected/recycled) (ton) | 1,508,677 | 1,563,010 | 1,358,254 | 177,756 | 20,620 |
| | Waste from sites (ton) | 55,404 | 57,399 | 45,146 | 12,253 | 1,421 |
| Water | Volume of water consumed at sites (m ³) | 28,624,900 | 29,655,789 | 26,892,506 | 2,763,283 | 1,390 |
| Hazardous Materials | Class-controlled substances (ton) | 45,235 | 46,864 | 46,307 | 557 | 724 |
| Environmental risk | Improvements at sites (point) | | 196 | 353 | 157 | 557 |
| Total | | | | | | 29,150 |

▶ Calculating Environmental Conservation Costs

▶ **Aggregate total direct investments and expenses for environmental conservation activities during the year ended March 31, 2002.**

▶ **Expenses include labor costs, depreciation, leasing fees and other overhead.**

▶ **Main Differences with Data Reported in the Environmental Report 2001**

- Environmental management and risk management system costs have been reclassified as administrative costs. Restoration costs and expenditures following legal cases concerning environmental pollution, previously classified as environmental risk management costs, have been reclassified under a new category, environmental remediation costs.
- R&D costs have been newly added.

▶ Calculating Sony's Environmental Conservation Effect

▶ **Items**

Sony uses the following five original Sony indices, greenhouse gases, resources, water, hazardous materials and environmental risks at sites, which are defined in the Sony Environmental Vision, to calculate the environmental conservation effect. The methods for calculating these items are described below.

Greenhouse Gases

<During product use>

Sony calculates that operating power consumption of products manufactured for a given year during their lifespan

= Production volume x (Operating power consumption x Estimated hours of operation per year + Standby power consumption x Estimated standby time per year) x Years used x Global warming coefficient (for each region).

* Figures may include estimates or projections.

<Manufacturing and service activities>

Calculated from the energy used by Sony sites (pages 29 and 52) and the global warming coefficients for each country.

Resources

<Product weight>

Total weight of products produced by Sony for a given year – weight of products collected from markets and recycled.

Reference: The total weight of products collected from markets and recycled was approximately 12,618 tons, which converts to a monetary value of ¥1,464 million.

* Figures may include estimates or projections.

<Sony sites>

The total volume of waste from Sony sites. (pages 32 and 52)

Water

Water use at Sony sites. (pages 32 and 52)

Hazardous materials

Totals for Class II, III and IV substances. (pages 37, 52 and 53)

Environmental Risk

Sony Site Environmental Risk Score (calculated based on volumes of hazardous substances handled and costs as well as quality of management of hazardous substances at Sony sites in accordance with Sony risk management guidelines)

▶ **Main Differences with Data Reported in the Environmental Report 2001**

- There has been an increase in product-related data values due to an increase in data collection categories and the use of more sophisticated calculation methods.
- The switch from using the global warming coefficient for Japan to using local global warming coefficients has led to an increase in calculated emissions of greenhouse gases.
- Sony has replaced certain estimates of site data used to calculate waste disposal and hazardous materials at sites with actual data, which has yielded different results.
- Sony has changed its method of calculating quantitative indicators of environmental risk. Accordingly, the score that would have been calculated where no risk management measures are taken was used as the risk management score for the year ended March 31, 2001.

▶ **Environmental Impact Adjusted to Equivalent Capacity Utilization**

The environmental impact data for the fiscal year ended March 31, 2001 was adjusted by the formula below to facilitate comparison with the fiscal year ended March 31, 2002.

The adjustment effectively rescales the environmental impact in the fiscal year ended March 31, 2001, in proportion to the year-on-year change in net sales for the fiscal year ended March 31, 2002 versus the fiscal year ended March 31, 2001, based on the concept of eco-efficiency.

Fiscal 2000 Adjusted Environmental Impact = Fiscal 2000 Environmental Impact (Pre-adjusted) x Fiscal 2001 net sales/
Fiscal 2000 net sales (Fiscal 2000 sales: ¥7,314,824 million, Fiscal 2001: ¥7,578,258 million)

▶ **Monetary Conversion of Environmental Conservation Effect**

Greenhouse gas effect: ¥3,100/ton-CO₂

Resources: ¥116,000/ton

Water: ¥503/m³

Hazardous materials: ¥1,300,000/ton

Environmental risk: ¥3,550,000/point

Price quoted based on the UK's CO₂ emissions trading market

Calculated from the costs of waste disposal and recycling

Calculated from the averaged value of both waterworks and drainage costs

Calculated based on environmental incidents at Sony

Calculated based on environmental incidents at Sony

Environmental Performance Data

List of Sony Environmental Performance Data (At Sony Sites)

1 Terajoule = 1 trillion Joules

| | | Unit | Fiscal 1997 | Fiscal 1998 | Fiscal 1999 | Fiscal 2000 | Fiscal 2001 |
|---------------------|-------------------------|----------------|-------------|-------------|-------------|-------------|-------------|
| Energy | Electricity consumption | TJ | 28,469 | 28,458 | 30,610 | 30,046 | 29,282 |
| | Gas consumption | TJ | 6,089 | 7,172 | 7,376 | 6,287 | 5,592 |
| | Oil consumption | TJ | 3,211 | 3,094 | 3,285 | 3,301 | 3,357 |
| | Total | TJ | 37,769 | 38,724 | 41,271 | 39,634 | 38,231 |
| Water | Water consumption | m ³ | 24,561,184 | 26,907,650 | 29,420,871 | 28,624,900 | 26,892,506 |
| Waste | Waste generated | Tons | 223,388 | 256,450 | 293,652 | 281,450 | 257,032 |
| | Recycled/compacted | Tons | 144,395 | 180,878 | 215,150 | 226,046 | 211,887 |
| | Disposal | Tons | 78,993 | 75,572 | 78,502 | 55,404 | 45,146 |
| Hazardous materials | Class II substances | Tons | 144 | 42 | 51 | 703 | 468 |
| | Class III substances | Tons | 13,106 | 10,799 | 11,222 | 17,042 | 19,212 |
| | Class IV substances | Tons | 24,328 | 23,162 | 28,824 | 27,490 | 26,627 |
| | Total | | 37,578 | 34,003 | 40,096 | 45,235 | 46,307 |

* Figures for electricity, gas and oil consumption are stated on a crude oil-equivalent basis.

Emissions of Greenhouse Gases at Sony Sites (Unit: ton-CO₂)

| | HFCs | PFCs | SF ₆ | NF ₃ | Others | Energy-derived CO ₂ | Total |
|--------|-------|---------|-----------------|-----------------|--------|--------------------------------|-----------|
| FY2000 | 8,148 | 242,203 | 58,535 | 3,182 | 246 | 1,937,564 | 2,249,878 |
| FY2001 | 6,444 | 186,465 | 46,984 | 8,412 | 420 | 1,897,356 | 2,146,081 |

* Sony voluntarily discloses information on NF₃ due to the large volumes used, even though it is a substitute gas that can be easily destroyed by abatement tools when compared with PFCs.

Environmental Performance Data

Greenhouse Gases and Energy Consumption (Sony Sites)

- Energy consumption is measured by converting the electricity, gas and oil consumed at sites into calories. (1kWh = 9.91MJ)
- Greenhouse gas emissions are reported in accordance with the GHG protocol. Energy-derived CO₂ emissions are calculated by first multiplying the energy consumed at each site by the local country or region's CO₂ emission coefficient and then subtracting the CO₂ offset contribution allowed under the Green Power Certification System. Emissions of non-CO₂ greenhouse gases are calculated by multiplying emissions for individual substances by the global warming coefficient. The CO₂ emission coefficient used for energy is based on the GHG protocol coefficient and a coefficient developed through studies conducted by the Japan Electric Machine Industry Association. The global warming coefficient is based on a coefficient proposed in the Second Assessment Report of the Intergovernmental Panel on Climate Change (IPCC).
- The GHG protocol is an international standard proposed by the World Resource Institute (WRI) and the World Business Council for Sustainable Development (WBCSD) and designed to provide corporations with a standard format for reporting greenhouse gas emissions.

Greenhouse Gases and Energy Consumption (Product Use Phase)

- The energy used by products during operation is the lifetime energy consumption of products manufactured in the year ended March 31, 2002 given by the following formula:
Production volume x (Operating power consumption x Estimated hours of operation per year + Standby power consumption x Estimated standby time per year) x Years used. Note that this does not represent just the energy consumed by products during the year ended March 31, 2002.
- The average product operating times (standby times) and years used have been calculated on the basis of research data.
- The figures include estimates based on projections and forecasts.
- The level of CO₂ emissions during product operation has been calculated from the energy consumption of products using the GHG protocol.
- The conversion coefficients are selected from the standard conversion coefficients (for Japan, the Americas, Germany in the case of Europe, and Singapore in the case of Asia and China) according to the product's intended destination.

- CO₂ emissions are calculated from the lifetime energy consumption of products, similar to energy consumption during product use. As such, CO₂ emissions do not represent emissions for the year ended March 31, 2002 only.

Resource Input and Output

- Total resource input is calculated on the basis of resource output. Gross material input = Product weight (including packaging) + Waste generated by sites (Waste + Recycled/compacted material) – Recycled and Renewable material
- Product weight represents the combined weight of Sony products in the year ended March 31, 2002 (including some accessories and user manuals) and packaging material and may include estimates and projections.
- Waste generated at sites consists of recycled waste, compacted waste and discarded waste.
- Recycled and renewable materials include parts of CRT glass panels, old magazines, cardboard, paper, recycled plastic, limonene-recycled polystyrene foam, organic plastics and other recycled materials.
- Recycled packaging material includes all recycled cardboard and container packaging (Japan) that make up packaging material for Sony products, in accordance with Japan's Containers and Packaging Recycling Law.
- Cardboard: Sony assumes that all cardboard is collected and recycled, as recycling infrastructure is well developed and cardboard is not subject to Japan's Containers and Packaging Recycling Law.
- End-of-use products collected and recycled is the volume of household appliances, batteries and other products collected and recycled in Japan, the U.S. and Europe, and includes volumes calculated from recycling expenses.

Water (Sony Sites)

Water includes the water purchased and groundwater drawn in by each site.

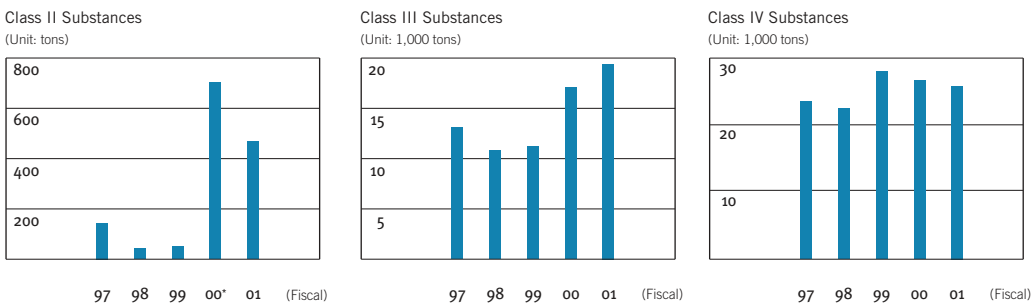
Hazardous Materials (Sony Sites)

- Data is not provided for certain metals, gases, aerosols and non-identifiable chemicals that are not subject to PRTR requirements in Japan.
- Hazardous materials refers to those handled at Sony sites. Note that the figures provided on page 53 represent the handling volume, less recycled volume.

Status of Hazardous Materials in Use

Progress is being made in phasing out lead solder by the end of the year ending March 31, 2005 under Green Management 2005. Lead solder (equivalent to lead) was added to the list of Class II substances in the year ended March 31, 2001. Domestic semiconductor manufacturing sites have increased the use of hazardous materials by 20% over the previous year, mainly due to increased production, the startup of new production plants and the construction of a new LCD device plant. The Sony Group's use of substances falling into Classes I through IV declined 2% in the year ended March 31, 2002 to about 46,000 tons. Lower output in Asia and other manufacturing declines offset the impact of higher semiconductor production in Japan. The use of two Class I substances was terminated during the year ended March 31, 2002. Both substances, methyl chloride (for treatment of metal surfaces) and tetra-chloroethylene (for film development), had been used only in limited applications. Sony continues to use mercury as an additive in batteries. During the year ended March 31, 2002, a total of 262 kg of this element were consumed, 20% less than in the previous fiscal year. Consumption of Class II substances fell about 33% from 703 tons to 468 tons. Of the decline, lead-based solder accounted for 211 tons, or 45%. Among Class III substances, the most widely used category of chemicals is volatile organic compounds (VOCs). These compounds accounted for 7,000 tons, or 37%, of the approximately 19,000 tons of Class III substances consumed during the year ended March 31, 2002. The use of Class IV substances declined 3% to about 27,000 tons, compared with the previous fiscal year.

Note: Volumes used are calculated by deducting the volume of a substance sold for recycling from total purchases.



* The volume of lead-based solder use increased in the year ended March 31, 2001 when it was reclassified from a Class III to a Class II substance.

** Class I substances now being almost totally eliminated are no longer included in the graph.

Class I to IV Substances

| | | | | | |
|----------------------|------------|---|--|---|---|
| Class I Substances | Prohibited | *Chlorine Solvents Carbon tetrachloride 1,1,1-Trichloroethane 1,1,2-Trichloroethane 1,2-Dichloroethane 1,1-Dichloroethylene | 1,2-Dichloroethylene Methylene chloride Chloroform Trichloroethylene Tetrachloroethylene | *Ozone-Depleting Substances CFCs (non-refrigerant) HCFCs (non-refrigerant) Methyl bromide *Heavy Metal Compounds Cadmium and its compounds Mercury and its compounds | *Carcinogenic Substances Asbestos Vinyl chloride monomers PCBs Benzene |
| Class II Substances | Phase Out | *Substances Harmful to Reproductive Functions Methyl cellosolve and its acetate Ethyl cellosolve and its acetate | *Endocrine Disruptors Dioxin (substance generated unintentionally) | *Ozone-Depleting Substances Halon CFCs (used as refrigerant in freezers launched before 1980) | *Heavy Metal Compounds Lead solder |
| Class III Substances | Reduce | *VOCs Methanol IPA MEK n-Hexane Toluene Xylene Ethyl acetate Butyl acetate | *Heavy Metal Compounds Chromium (VI) compounds Lead and its compounds Antimony and its compounds Arsenic and its compounds Nickel compounds Zinc compounds Cobalt and its compounds Manganese and its compounds | *Greenhouse Substances PFC (PRTR controlled) Sulfur hexafluoride HFCs N ₂ O *Toxic and Deleterious Substances Chlorine Formaldehyde Hydrofluoric acid *Other substances controlled under the PRTR system in individual countries | *Air Pollutants NOx SOx |
| Class IV Substances | Control | Acetone Cyclohexanone Ammonia Acids and alkalis | Substances for treating effluent (such as flocculating agents and precipitants) BOD COD | CFCs (used as refrigerant in freezers launched after 1981) HCFCs (refrigerant) HFCs (refrigerant) | |

*Substances controlled by laws and regulations in individual countries.

▶ **Developments in NOx, SOx, BOD and COD Emissions in Japan**

Progress made at manufacturing sites in boiler efficiency and switching from fuel oil to natural gas have further curtailed emissions. The total volume of NOx emissions came to 326 tons, down 8% from the previous fiscal year, while SOx emissions fell 1% to 62 tons. Increased load due to introduction of new solvent recovery towers at recording media production sites boosted total BOD emissions by 10% to 150 tons, while total COD emissions fell by 5% to 92 tons due to the reduction of chemical substances and improvements made in semiconductor and printed wiring board production processes. Note that 10 sites now only discharging domestic wastewater were excluded from BOD emission surveys and seven sites now only discharging either domestic wastewater or sewage were excluded from COD emission surveys. Sites totaling three that have either closed down or have changed from boiler-generated to electrical energy have also been excluded from surveys.

| | 1999 | 2000 | 2001 |
|-----|----------|----------|----------|
| NOx | 460 (41) | 352 (39) | 326 (36) |
| SOx | 289 (35) | 63 (35) | 62 (35) |

| | 1999 | 2000 | 2001 |
|-----|----------|----------|----------|
| BOD | 108 (46) | 137 (41) | 150 (31) |
| COD | 60 (33) | 96 (34) | 92 (27) |

Note: Fiscal 2000 NOx and SOx data for some sites have been revised.

▶ **Update on PCB Storage in Japan**

With the exception of some power condensers for initial power reception equipment, Sony does not use PCBs. Furthermore, electric appliances containing PCBs that are not in use, such as power condensers, fluorescent lighting stabilizers and small, low-voltage condensers for TVs, are carefully stored at sites. The table below shows the storage situation of end-of-use appliances containing PCBs.

Storage Situation of Electric Appliances Containing PCBs (Fiscal 2001) (Number of Units)

| High-voltage condensers, reactors, etc. Large electric appliances | Fluorescent stabilizers | TV condensers | Small condensers | PCBs (Number of Units and Weight) |
|--|-------------------------|---------------|------------------|--------------------------------------|
| 269 | 21,236 | 43,932 | 1,056 | 41 and 25.015kg |

Notes: The categories follow the classifications used to report to government agencies. Some electric appliances reported last fiscal year under high-voltage condensers are now included under small condensers.

Apart from electric appliances containing PCBs shown in the table, Sony stores and manages PCB contaminants, waste cloth and other pollutants.

Sony collected 8 high-voltage condensers, 388 fluorescent stabilizers, and 26 TV condensers in the year ended March 31, 2002. These were added to the new classifications in the year ended March 31, 2002, when figures were revised to correct partly erroneous data in the previous fiscal year's figures.

Summary of Products with High Environmental Performance

Listed below are examples of products in major Sony product categories that have a high environmental performance. Several of these products are pictured on pages 25 through 27.

| Category | Model | Standby Power Consumption (W) | Operating Power Consumption (W) | Lead-free Solder | Halogen-free Flame Retardant | Packaging |
|-----------------------------------|--------------|-------------------------------|---------------------------------|------------------|------------------------------|-----------|
| Car audio | XR-CA430X | 0.0213 | | ■ | ■ | ■ |
| Handheld computer (ex. cameras) | PEG-NR70 | 0.1 | 0.37 | ■ | ■ | ■ |
| Handheld computer (incl. cameras) | PEG-NR70V | 0.1 | 0.37 | ■ | ■ | ■ |
| MD Walkman | MZ-E909 | 0.1 | Playback145H | ■ | ■ | ■ |
| MD Walkman | MZ-N1 | 0.75 | Playback110H | ■ | ■ | ■ |
| Digital still camera | DSC-P9 | 0.4 | 1.9 | ■ | ■ | ■ |
| Digital camcorder | DCR-TRV50 | 0.2 | 3.4 | ■ | ■ | ■ |
| Digital camcorder | DCR-TRV40 | 0.2 | 3.4 | ■ | ■ | ■ |
| Notebook PC | PCG-SR9M/K | 1.8 | 34 | ■ | ■ | ■ |
| Notebook PC | PCG-R505FR/D | 1.4 | 36 | ■ | ■ | ■ |
| Color television | KV-14DA1 | 0.07 | 64 | ■ | ■ | ■ |
| Color television | KV-29DS55 | 0.07 | 130 | ■ | ■ | ■ |
| Color television | KV-21DA55 | 0.07 | 91 | ■ | ■ | ■ |
| Color television | KV-32DX550 | 0.08 | 178 | ■ | ■ | ■ |
| Computer CRT display | CPD-G220 | 3 | 115 | ■ | | ■ |
| Color LCD for computer | SDM-NS1AV | 3 | 48 | | ■ | ■ |
| LCD video projector | VPL-CX4 | 5 | 190 | ■ | | ■ |
| MD system | MDS-JE780 | 0.3 | 10 | ■ | ■ | ■ |
| Personal audio system | CMT-P555DVD | 0.2 | 70 | ■ | ■ | ■ |
| DVD player | DVP-NS515 | 0.11 | 11 | ■ | ■ | ■ |
| Video cassette recorder | SLV-N77 | 1.8 | 18 | ■ | ■ | ■ |
| Video cassette recorder | SLV-SE220 | 3 | 15 | ■ | ■ | ■ |
| AIBO | ERS-311/312 | 0.1 | 5 | ■ | | ■ |
| Mobile phone | C413S | 0.009 | 0.834 | | ■ | ■ |
| Mobile phone | C1002S | 0.009 | 0.67 | ■ | ■ | ■ |

| | | |
|-------------------------------|--|---|
| Lead-free solder | ■ All printed wiring boards and circuit components | ■ All printed wiring boards and some components |
| | ■ Main printed wiring board(s) | |
| Halogen-free flame retardants | ■ None in enclosure and printed wiring boards | ■ Eliminated from printed wiring boards |
| Packaging | ■ No styrene foam | ■ Recycled styrene foam using limonene |

Newly Certified Sites: ISO 14001 and Occupational Health and Safety Management System Certification

Sites that were certified in the year ended March 31, 2002 are shown in the table below.

A complete list of sites certified in the year ended March 31, 2001 or earlier is available online at [URL http://www.Sony.co.jp/en/SonyInfo/Environment/data/en_data_top.html](http://www.Sony.co.jp/en/SonyInfo/Environment/data/en_data_top.html)

Newly Certified Sites: ISO 14001

Japan: Manufacturing sites

| Site | Acquired |
|--|----------|
| Sony Semiconductor Kyusyu Corporation *1 | 2001.12 |
| ST Liquid Crystal Display Corporation | 2002.01 |
| Sony Fukushima Corporation *2 | 2002.03 |

Japan: Non-manufacturing sites

| Site | Acquired |
|---------------------|----------|
| Sony Assurance Inc. | 2001.10 |
| Sony Music Group *3 | 2002.02 |

Europe: Non-manufacturing sites

| Site | Acquired |
|---|----------|
| Sony Music Entertainment (Italy) S.P.A. | 2001.07 |
| Sony Overseas S.A. | 2001.12 |

U.S.: Non-manufacturing sites

| Site | Acquired |
|---|----------|
| Sony Music Distribution/Illinois | 2001.09 |
| Sony Comercio e Industria Ltda., Brazil | 2001.07 |
| Sony da Amazonia Ltda-Filial, Brazil | 2001.07 |
| Sony Card Administradora Ltda. | 2001.07 |
| Sony American Zone *4 | 2001.12 |

*1) Group certification, including Kokubu Technology Center, Nagasaki Technology Center, Oita Technology Center, Sony Computer Entertainment Inc. Fab1, and the Headquarters of Sony Semiconductor Kyusyu Corporation.

*2) Group certification of Motomiya plant and Koriyama plant

*3) Group certification of 16 Sony Music Group companies: Sony Music Entertainment (Japan) Inc., Sony Music Systems Inc., SME Visual Works, Inc., SME Families Inc., Sony Music House Inc., Defstar Records Inc., Sony Music Japan International Inc., Sony Music Records Inc., EPIC Records Japan Inc., Ki/oon Records Inc., Sony Music Associated Records Inc., Sony Music Distribution (Japan) Inc., Sony Family Club Inc., Sony Creative Products Inc., Sony CP Laboratories Inc., Global Rights Inc.

*4) Group certification of 73 non-manufacturing sites in North America

Sony Service Center (Irvine, Long Beach, Niles, Westwood, Bristol), Sony Logistics Center (Carson, Fremont, San Ysidro, Roselle, Cranbury), Sony Electronics Inc. (Cypress, San Jose, Boulder, Sunrise, Norcross, Itasca, Lanham, Eden Prairie, Kansas City, Oradell, Park Ridge, Teaneck, Woodcliff Lake, Irving, Richmond), Sony Factory Outlet (Lake Elsinore, Tracy, Castle Rock, Wrentham, Birch Run, Central Valley, Jeffersonville, Grove City, Lancaster, Gaffney, San Marcos, Pleasant Prairie), Sony Electronics Call Center (Ft. Myers), Sony Gallery Store (Farmington Hills), Sony AOEM Div. (Farmington Hills), Sony Repair Parts Center (Kansas City), Sony Design Center (Park Ridge), Sony Consumer Products Center (Laredo), Sony AOEM Div. (McAllen), Sony of Canada LTD. (Coquitlam, Willowdale, Whitby), Sony Pictures Entertainment (Sony Pictures Studios, The Culver Studios), Sony Music Entertainment Inc. (550 & 555 Madison Avenue, New York), Sony Music Distribution (Rolling Meadows, Lexington, Jericho, Atlanta, Dallas, Los Angeles, Novato, Beltsville), Sony Music Regional Sales Office (Edina), Sony Music Marketing & Recording Administration (Nashville), Sony Music Publishing (Nashville), Sony Music Entertainment Inc. (New York, Santa Monica), Sony Discos (Miami Beach 605 & 407 Lincoln Road, New York, San Antonio, California, Puerto Rico), Aiwa America Inc., Aiwa North American Parts Center, Sony Corporation of America

Newly Certified Sites: Occupational Health and Safety Management System

Japan: Manufacturing sites

| Site | Acquired |
|---|----------|
| Sony Semiconductor Kyusyu Corporation, Oita Technology Center | 2001.04 |
| Sony Corporation, Atsugi Technology Center | 2001.04 |
| Sony Precision Technology Inc., Isehara Plant | 2001.05 |
| Sony Hamamatsu Corporation | 2001.09 |
| Sony EMCS Corporation, Senmaya TEC | 2002.02 |

Asia: Manufacturing sites

| Site | Acquired |
|--|----------|
| Sony India Pvt. Ltd. | 2001.05 |
| Sony Electronics (Malaysia) Sdn. Bhd | 2001.08 |
| Sony Mobile Electronics (Thailand) Co., Ltd. | 2001.09 |
| Sony Semiconductor (Thailand) Co., Ltd. | 2001.09 |
| Sony Magnetic Products (Thailand) Co., Ltd. | 2002.02 |
| Sony Technology Malaysia Sdn. Bhd. | 2002.02 |
| Sony Chemicals (Suzhou) Co., Ltd. | 2002.02 |
| Sony Siam Industries Co., Ltd. | 2002.02 |
| Sony Precision Engineering Center | 2002.03 |

Glossary

| Glossary | Remarks |
|-------------------------------|--|
| Cogeneration system | An energy-efficient system providing both heat and power. |
| Environmental accounting | Compares between the cost of environmental protection programs and corresponding reductions in the environmental impact (the combined burden on the environment caused by Sony's business activities and the use of its products). |
| Eco-efficiency | An index obtained by dividing sales by an environmental impact figure. This index is used to manage five items: greenhouse gas emissions, resources input, resources output, water and chemicals. |
| e-learning | Training and other educational programs provided over the Internet or an intranet. As no classrooms is needed, e-learning allows individuals to study at any time and place. |
| Funnel glass | The funnel-shaped portion of a cathode ray tube behind the picture surface. |
| Greenhouse gases (GHG) | Gases that absorb solar infrared radiation reflected from the Earth's surface, raising air temperature. This category of gases typically refers to the following six compounds: CO ₂ , methane, nitrous oxides, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF ₆). |
| Green purchasing | Products and services are selected by taking into account their environmental impacts. |
| Halogenated flame retardants | Chlorine, fluorine and other halogen elements added to plastics to make them fire resistant. |
| Hexagonal carton | A shipping carton for large-screen televisions that is shaped to match the profile of the television. |
| Home Appliances Recycling Law | A law enacted in April 2001 to promote the reuse of resources. Other laws apply to efficient use of resources and green purchasing. |
| ISO 14001 | An international standard for environmental management systems. Certified systems must use a "plan-do-check-act" (PDCA) structure in which environmental management is conducted and inspected in a consistent manner based on policies and reviewed by management. |
| Lead-free solder | Solder that replaces lead-based solder formulations that could be harmful to the environment by releasing lead if disposed of improperly. |
| Life cycle assessment (LCA) | A method for determining environmental impact of a product or service beginning with the sourcing of raw materials and ending with recycling. |
| Limonene | Oil obtained from the peels of citrus fruit. Used mainly for fragrances in food products and cosmetics. |
| Material recycling | Obtaining materials by breaking down or melting a discarded product. |
| Modal shift | The shift of cargo transportation from trucks and other relatively inefficient means to ships, railroads and other means of transportation that use less energy per unit of cargo transported. |
| Network Companies | Sony businesses formed by creating independent units from what had been the Electronics Business. There are currently five network companies. |
| OHSMS | An occupational health and safety management system framework using the same PDCA structure as ISO 14001. |
| Polyvinyl chloride | A widely used plastic that has fire and electrical resistance. Improper disposal of this compound can be harmful to the environment and there are environmental concerns regarding the plasticizers used in polyvinyl chloride resin. |
| Pulp mold | A cushioning component for packaging made from old newsprint or other reused materials. |
| Rechargeable battery | A battery that can be recharged and reused. |
| Recycled materials | Materials produced from discarded products for the purpose of their reuse. |
| Reuse | The reuse of a product or internal component without making any alterations. |
| Risk management | Analyzing potential sources of risk prior to the occurrence of a problem and taking preventive measures. |
| Sales unit volume | A figure obtained by dividing sales by a figure related to environmental impact. For example, if Sony had 500 tons of CO ₂ emissions per ¥10 million in sales during fiscal 2000, the sales unit volume would be 50 tons per ¥1 million. If CO ₂ emissions were then 800 tons in fiscal 2001 and sales were ¥20 million, the sales unit volume would be 40 tons per ¥1 million, a decline of 20 percent. |
| Site | Refers to manufacturing and non-manufacturing sites. |
| Stakeholder | Any party that associates with Sony. Examples include but are not limited to shareholders, other investors, suppliers, government agencies, mass media, research institutions, non-government organizations, customers, local communities, employees and children. |
| Standby power consumption | Power consumption of a product while power is switched off but it remains capable of receiving a power-on command from a remote control unit. |
| Thermal recycling | Reusing the thermal energy of discarded products through their incineration. |
| Used magazine paper | Paper obtained from magazines and other printed materials for the purpose of recycling. The recycling rate of this type of paper is low due to the much greater difficulty of their breakdown compared with newsprint and cardboard. |
| VOC | Volatile organic compounds, substances that have been used as solvents in ink and other products but contribute to air pollution and acid rain. |
| Zero landfill waste | At Sony, this is defined as reducing to less than 5 percent the amount of waste sent to landfills through waste reduction, reuse and recycling programs. |

Note: This glossary explains the meaning of terms used within the context of this publication. As Sony has its own uses for some of these terms, these explanations may not match the generally accepted definitions in some cases.

Independent Verification Report

Following last year's practice, Sony Social & Environmental Report 2002 has been independently verified by PricewaterhouseCoopers to ensure the reliability of data gathering and reporting procedures used in preparing the report. In the current fiscal year, Sony has requested PricewaterhouseCoopers to focus particular attention on the reporting of greenhouse gas emission volumes.

PricewaterhouseCoopers is one of the world's largest professional firms offering a variety of specialized services, including accounting, auditing, tax accounting and consulting services.

Independent Verification Report

May 7, 2002

To: Nobuyuki Idei
Chairman and CEO, Sony Corporation
Kunitake Ando
President and COO, Sony Corporation

PricewaterhouseCoopers ("PwC") has been asked to verify and provide an opinion on certain aspects of the Sony Corporation ("Sony") Social & Environmental Report 2002 ("the Report"). The preparation of the Report is the responsibility of Sony.

Objectives of Verification

The objective of this verification is to express an opinion on:

- (a) The reliability of the processes used by Sony to identify, collect and report significant environmental data and information included in the Report; and
- (b) The accuracy and completeness of data and information related to greenhouse gas ("GHG") emissions included in the Report. (Associated only with manufacturing sites where our local verification took place.)

Basis of Opinion

Currently there are no generally accepted international environmental reporting and verification standards. Therefore, we have referred to emerging practices and guidance.

Summary of Procedures Performed

We conducted a verification of 13 sites, including the Sony headquarters ("HQ"). Both at the corporate and site levels we:

- Conducted interviews with management and persons responsible for the preparation of the Report;
- Analyzed data;
- Inspected relevant documents; and
- Agreed sampled data to supporting documents.

We have performed the following procedures on significant environmental data and information included in the Report.

At the Corporate Level

1. Environmental management of the entire Sony Group
We obtained an understanding and assessed the status of the organization and the overview of operation of the environmental management and data items collected by the environmental management.
2. Processes used by the Sony Group to identify, collect and report environmental data and information
We obtained an understanding of the methods used by the Sony Group to identify significant environmental data and information, and to measure each data item. We assessed how and when the data is collected and reported.

3. Information and data included in the Report

We tested a sample of data from the Report to assess consistency with supporting documents.

At the Site Level

1. Overview of environmental management

We obtained an understanding and assessed environmental management regarding significant environmental data and information included in the Report, at each site, as follows.

- Information about significant laws and regulations, regulatory limits and standard values;
- Identification and record of significant environmental aspects;
- Information about material flow controls;
- Strategic goals and objectives, including environmental preservation programs;
- Existence of environmental incidents; and
- A system to collect environmental performance data and its status.

2. Processes used by each site to identify, collect and report environmental data and information

We obtained an understanding of the methods used by each site to identify significant environmental data and information, and to measure each data item. We assessed how and when data is collected and reported.

3. Data and information reported to HQ for the preparation of the Report

We tested a sample of data from the Report to assess consistency with supporting documents.

The scope of verification includes the following parameters and items.

- Energy consumption and GHG;
- Environmental accounting;
- Environmental pollutants;
- Emissions into the air;
- Emissions into water;
- Waste production, recycling and disposal;
- Environmental education; and
- Environmental local community activities.

Opinion

On the basis of the above work, we have reached the following opinion:

1. At the locations where our procedures were conducted, the processes used to identify, collect and report significant environmental data and information included in the Report are reliable, except that there are some sites that need to improve processes on environmental pollutants and/or environmental accounting.
2. GHG emissions data included in the Report for inspected manufacturing sites are accurate and complete.

PricewaterhouseCoopers

PRICEWATERHOUSECOOPERS 

Sites Inspected

| Name of Site (As of March 31, 2002) | Country | Business Line |
|---|-----------|----------------------------|
| Sony Corporation Headquarters | Japan | HQ |
| Sony Semiconductor Kyushu Co., Ltd., Kokubu Technology Center | Japan | Electronics |
| Sony Corporation, Sendai Technology Center | Japan | Electronics |
| Sony Chemical Corporation, Kanuma Site | Japan | Electronics |
| Sony Assurance Inc. | Japan | Finance |
| Sony Communication Network Corporation | Japan | Others (Internet Business) |
| Sony Neagari Corporation | Japan | Electronics |
| Sony Corporation, Home Network Company | Japan | Electronics |
| Sony Music Entertainment Inc., Pitman | USA | Music•Games |
| Sony España S.A., Barcelona Plant | Spain | Electronics |
| Sony Display Device(Singapore) | Singapore | Electronics |
| Sony Electronics(M) Sdn. Bhd. | Malaysia | Electronics |
| Shanghai Suoguang Electronics Co., Ltd. | China | Electronics |

- ★ indicates focused parameters at respective sites.
- : GHG emissions
- : Environmental and Occupational Safety and Health risk management
- ★ : Environmental friendly products

Our Recommendations to Sony

Last year was our first environmental report verification assignment with Sony and was focused exclusively on the processes used to identify, collect and report the information in the Report. This year, we conducted more detailed procedures in order to provide an opinion on the reliability of those processes. During the verification process, we made a number of recommendations about Sony's environmental management. The following is the summary of our recommendations.

1. Environmental Pollutants

Due to the lack of detailed standard measurements, it is very difficult to measure and aggregate data of environmental pollutants accurately. Sony is working on developing a system to measure and aggregate environmental pollutants data. At some inspected sites, a transparent system for measuring and aggregating such data has been implemented. At other sites, the system was not complete and the basis of calculation was not clear. It is expected that regulations related to environmental pollutants will become stricter globally. Therefore, we recommend that Sony improve the system accordingly.

2. Environmental Accounting

Although environmental accounting is in the middle of its development, Sony has been trying to collect environmental accounting data globally. However, an environmental accounting system implemented at some inspected sites was not comprehensive and some data were not included in the aggregation because they were not fully following Sony's "Environmental Accounting Guidelines." We recommend further improvement of Sony's environmental accounting system so that more reliable environmental data can be reported internally and externally.

3. GHG

The GHG data included in the Report was calculated at HQ based on energy and chemical consumption data collected from the sites. Generally, it is necessary to consider the following in order to achieve an accurate measurement of GHG emissions;

- Identification of emission sources;
- Accurate measurement of GHG associated with chemical consumption; and
- A CO2 emission factor varies in each country due to quality of energy.

At the inspected sites, we did not find any energy and chemical consumption data missing from reports to HQ. During the conversion process at HQ, an appropriate CO2 emission factor was used for each region. As to GHG emissions associated to chemical consumption, there were different cut-offs and calculation methods used for some data generation. We recommend that Sony adopt the same cut-offs and calculation methods for all GHG data generation.

4. Soil and Groundwater Pollution

The domestic Sony group conducted a survey on groundwater and soil pollution during FY 2001. This survey was mainly focused on facilities. In order to obtain a better understanding of risks associated with soil contamination, we recommend that Sony select measurement locations for the survey based on the study of all environmental pollutants used since the establishment of factories.

5. Social Information

Although the procedures for identifying, collecting and reporting social information as well as the data itself, is out the scope of our verification, we conducted certain procedures, to assess processes Sony HQ used to collect and report significant social information included in the Report. We did not find any issues to be addressed.

Fostering Trust and Dreams



Seiichi Watanabe
Corporate Executive Vice President
Chairman, Sony Environmental Conservation Committee

In the 20th century, industrial societies championed mass production, mass consumption, and mass waste disposal. By contrast, the 21st century has forced us to rethink our values, demanding that we transform into a society that is responsive to environmental concerns. That entails harnessing new technologies that benefit, rather than hurt, the environment.

Global environmental conservation is one of the most pressing issues for Sony today. We have formulated an environmental vision that seeks to double eco-efficiency by the year ending March 31, 2011. This year's report tracks Sony's progress against various milestones along the way, and sets forth specific targets for the year ending March 31, 2006, the halfway point of our journey. Sony's business activities and products touch every corner of the world. Conscious of this fact, Sony has advanced standardized environmental activities on a global scale.

However, several environmental incidents and problems relating to products did occur in the year ended March 31, 2002. Learning from the experience, Sony will reinforce its efforts to be a reliable, trustworthy, and leading company on all fronts, including environmental issues. We will pursue environmental activities that match the expectations of shareholders, customers and other stakeholders. Furthermore, Sony will vigorously pursue breakthroughs in environmentally beneficial technologies and innovative business models that make an essential contribution to building sustainable societies. I hope this report serves to deepen your understanding of Sony's social and environmental activities. We welcome your opinions and comments on this report, which will be applied to continuing improvements in the future.

Sony welcomes questions, comments and suggestions regarding the content of this Social & Environmental Report and the Sony Group's activities. Please contact us at one of the following five Environmental Conservation Committee offices.

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For up-to-date information concerning Sony's environmental conservation activities, please visit the following site:
Sony environmental conservation activities homepage
URL: <http://www.sony.net/eco/>

For Sony's latest business results and other information, please visit the following site:
Sony homepage
URL: <http://www.sony.net>



Environmental exhibition room:
Sony Eco Plaza

Learn about Sony's environmental activities through visuals and demonstrations.
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